



Highlights of the Department of the Navy FY 2022 Budget Office of Budget - 2021



Highlights of the Department of the Navy FY 2022 Budget Table of Contents

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CHAPTER 1: INTRODUCTION

Section I: Introduction

Overview	1-1
Strategic Guidance and Themes	1-2
President’s Interim National Security Strategic Guidance	1-2
Secretary of Defense Priorities.....	1-3
Acting Secretary of the Navy Strategic Vision	1-4
Chief of Naval Operations (CNO) Strategic Guidance	1-6
Commandant of the Marine Corps (CMC) Strategic Guidance	1-7
Security and Operational Environment.....	1-9
FY 2022 President’s Budget Overview	1-12
Defend the Nation	1-13
Take Care of Our People	1-18
Succeed through Teamwork	1-19
Resource Summary	1-22

CHAPTER 2: DEFEND THE NATION

Section II: Procurement

Overview	2-1
Ship Procurement, Navy	2-2
Aircraft Carriers.....	2-2
Submarine Programs.....	2-3
Surface Ship Programs.....	2-4

Amphibious and Logistics Platforms	2-5
Aircraft Procurement, Navy	2-6
Fixed Wing	2-6
Rotary Wing	2-8
Unmanned Aerial Vehicles (UAVs).....	2-9
Weapons Procurement, Navy	2-9
Ship Weapons	2-11
Aircraft Weapons.....	2-13
Procurement, Marine Corps	2-15
Major Procurement Programs	2-16
Procurement of Ammunition, Navy and Marine Corps	2-19
Other Procurement, Navy	2-20
Industrial Plant Equipment Program	2-20
Ship Programs.....	2-20
Ship Maintenance and Repair.....	2-21
Prioritize Investment in Information Warfare	2-22

Section III: Development

Research and Development Support	3-1
Science and Technology	3-2
Ship Research and Development	3-2
Aviation Research and Development.....	3-4
Weapons Research and Development.....	3-6
Navy Laser Family of Systems (NLFoS)	3-7
Ground Equipment Research and Development.....	3-7

Section IV: Readiness

Navy Overview	4-1
Ship Operations	4-2
Active Ship OPTEMPO.....	4-3
Mobilization	4-3
Ship Maintenance	4-5
Air Operations.....	4-6
Active Tactical Air Forces	4-6
Aircraft OPTEMPO	4-8
Aircraft Depot Maintenance	4-9
Navy Reserve Operations.....	4-10
Reserve Component Air Forces.....	4-11

Reserve Component Aircraft Depot Maintenance	4-12
Marine Corps Overview	4-13
Marine Corps Operations	4-14
Active Operations.....	4-14
Ground Equipment Depot Maintenance	4-15
Marine Corps Reserve Operations	4-16
Reserve Ground Equipment Depot Maintenance	4-17
Facility Sustainment, Restoration, and Modernization.....	4-17
Facility Sustainment.....	4-18
Facility Restoration and Modernization	4-18
Facility Demolition.....	4-18
Marine Corps Infrastructure Reset	4-19
Base Operating Support	4-19
Environmental Restoration, Navy.....	4-20

Section V: Military Construction

Overview	5-1
Military Construction	5-1
Base Realignment and Closure	5-4

Section VI: Direct War & Enduring Costs

Overview	6-1
----------------	-----

CHAPTER 3: TAKE CARE OF OUR PEOPLE

Section VII: Personnel

Overview	7-1
Military Personnel.....	7-2
Active Navy Personnel	7-2
Reserve Navy Personnel	7-4
Active Marine Corps Personnel	7-6
Reserve Marine Corps Personnel.....	7-8
Civilian Personnel.....	7-10

Section VIII: Military Family Housing

Overview	8-1
----------------	-----

Family Housing 8-1

Section IX: People Programs

Overview 9-1
 Education 9-1
 Sexual Assault Prevention and Response (SAPR) 9-3
 Mental Health 9-3
 Child and Youth Programs 9-4
 Morale, Welfare, and Recreation 9-5

CHAPTER 4: SUCCEED THROUGH TEAMWORK

Section X: Allies and Partners

Overview 10-1
 International Cooperation 10-2

CHAPTER 5: BUSINESS MANAGEMENT ENABLERS

Section XI: Revolving Fund

Navy Working Capital Fund (NWCF) Overview 11-1
 Cash Management 11-2

Section XII: Reform and Audit

Reform 12-1
 Better Alignment of Resources (BAR) 12-2
 Business Process Improvements (BPI) 12-3
 Business System Improvement (BSI) 12-6
 Divestitures (DIV) 12-7
 Policy Reform (POL) 12-12
 Weapon System Acquisition Process (WSA) 12-15
 Audit Business Transformation 12-16
 Auditability Progress 12-17
 USN & USMC General Fund Balance Sheets 12-20

OTHER

Appendix A: Appropriation Tables

Military Personnel, Navy (MPN)..... A-1
 Medicare-Eligible Retiree Health Fund Contribution, Navy (DHAN)..... A-1
 Reserve Personnel, Navy (RPN) A-1
 Medicare-Eligible Retiree Health Fund Contribution, Navy Reserve (DHANR) A-1
 Military Personnel, Marine Corps (MPMC)..... A-2
 Medicare-Eligible Retiree Health Fund Contribution, Marine Corps (DHAMC).... A-2
 Reserve Personnel, Marine Corps (RPMC) A-2
 Medicare-Eligible Retiree Health Fund Contribution, Marine Corps Reserve (DHAMCR)..... A-2
 Operation and Maintenance, Navy (O&MN) A-3
 Operation and Maintenance, Marine Corps (O&MMC) A-4
 Environmental Restoration, Navy (ERN)..... A-4
 Operation and Maintenance, Navy Reserve (O&MNR) A-5
 Operation and Maintenance, Marine Corps Reserve (O&MMCR) A-5
 Shipbuilding and Conversion, Navy (SCN) A-6
 Aircraft Procurement, Navy (APN) A-7
 Weapons Procurement, Navy (WPN)..... A-8
 Procurement, Marine Corps (PMC) A-9
 Procurement of Ammunition, Navy and Marine Corps (PANMC)..... A-10
 Other Procurement, Navy (OPN)..... A-10
 Research, Development, Test, and Evaluation, Navy (RDT&E,N)..... A-11
 Military Construction, Navy and Marine Corps (MCN, MCNR)..... A-12
 Family Housing, Navy and Marine Corps (FHCON, FHOPS)..... A-13
 Base Realignment and Closure Accounts (BRAC) A-13
 Navy Working Capital Fund (NWCF)..... A-13

Appendix B: List of Acronyms

List of Acronyms..... B-1

List of Supporting Figures

1.1 Security and Operational Environment 1-10
 1.2 Operational Context 1-11
 1.3 FY 2022 DON Total Budget Request by Appropriation Group..... 1-12
 1.4 Secure Maritime Advantage with Allies and Partners 1-20

1.5	FY 2022 Budget Reform Savings	1-21
1.6	DON FY 2022 Fiscal Context.....	1-22
1.7	FY 2022 DON Total Budget Request by Appropriation	1-23
2.1	Procurement, FY 2021 – FY 2022	2-1
2.2	Shipbuilding Procurement Quantities and Total Funding.....	2-3
2.3	Aircraft Procurement Quantities and Total Funding.....	2-6
2.4	Weapons Procurement Quantities and Total Funding	2-10
2.5	Funding for Major Information Warfare Programs	2-23
3.1	RDT&E Funding	3-1
4.1	FY 2022 Active Navy O&M Funding.....	4-1
4.2	DON Battle Force Ship Inventory	4-2
4.3	Strategic Sealift.....	4-4
4.4	Hospital Ships	4-4
4.5	Department of the Navy Ship Maintenance	4-6
4.6	DON Aircraft Force Structure	4-7
4.7	DON Flying Hour Program Funding.....	4-7
4.8	DON Aircraft Inventory	4-8
4.9	Aircraft Depot Maintenance and Aviation Logistics	4-10
4.10	Reserve Component Aircraft Force Structure	4-12
4.11	Reserve Component Aircraft Depot Maintenance	4-12
4.12	FY 2022 Active Marine Corps O&M Funding.....	4-13
4.13	Marine Corps Ground Equipment Depot.....	4-16
4.14	Marine Corps Reserve Ground Equipment.....	4-17
5.1	Historical Military Construction Funding.....	5-1
5.2	Military Construction Funding Summary	5-2
5.3	BRAC Funding Summary	5-4
6.1	FY 2022 Direct War & Enduring Costs Funding.....	6-1
6.2	DON Direct War & Enduring Costs Funding	6-2
7.1	Active Navy End Strength by Type.....	7-3
7.2	Active Navy End Strength Trend.....	7-4
7.3	Reserve Navy End Strength by Type	7-5
7.4	Reserve Navy End Strength Trend	7-5
7.5	Active Marine Corps End Strength by Type	7-7
7.6	Active Marine Corps End Strength Trend	7-8
7.7	Reserve Marine Corps End Strength by Type.....	7-9
7.8	Reserve Marine Corps End Strength Trend	7-9
7.9	Civilian Manpower Work Areas, FY 2022	7-10
7.10	DON Civilian Manpower in Full-Time Equivalent Personnel	7-12
8.1	Family Housing Funding Summary	8-2

8.2 Navy & Marine Corps Family Housing Units	8-2
9.1 Higher Education Funding	9-1
9.2 Other Education Funding	9-2
9.3 Sexual Assault Prevention and Response Funding	9-3
9.4 Mental Health Funding	9-4
10.1 Secure Maritime Advantage with Allies and Partners	10-1
11.1 Summary of NWCF Costs	11-2
12.1 FY 2022 Budget Reform Savings	12-1
12.2 Summary of DON Efficiencies for the FY 2012 – FY 2022 Budgets.....	12-2

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The estimated cost of this report for the Department of the Navy (DON) is \$36,817. The estimated total cost for supporting the DON budget justification material is approximately \$3,919,738 for the 2021 fiscal year. This includes \$84,638 in supplies and \$3,835,100 in labor.

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CHAPTER 1, SECTION I: INTRODUCTION

OVERVIEW



As identified in *Advantage at Sea: Prevailing with Integrated All-Domain Naval Power*, the United States is a maritime nation and our security and prosperity depend on the seas. Since its inception, the United States has relied on safe and reliable access to the world's oceans. America's naval Service defends our Nation by preserving freedom of the seas, deterring aggression, and winning wars. The increasingly

aggressive world actors that threaten the freedom of the world's waterways, intimidate U.S. allies, and seek a more hostile international order, reinforce the need to maintain a potent, integrated Navy and Marine Corps that maximizes our naval contribution to the joint force. In a world more interconnected and interdependent than ever before, a fully integrated and forward maneuverable Navy-Marine Corps Team has never been more important to the security of our Nation and the preservation of rules-based international order. Seapower provides mobile, self-reliant, survivable, and distributable forces perfectly suited to combat the contemporary threats the nation faces. Competition from an ascendant China and a disruptive Russia is spurring a period of rapid transformation in the strategic environment. Though the U.S. still maintains far more tonnage than China, China's navy has more ships than the U.S. Navy, and they are building ships at a much greater rate. Such trends necessitate an acceleration of investment by the Department of the Navy (DON) to reverse the erosion of U.S. military advantages from China's and Russia's aggressive naval growth and modernization. We must maintain resolve to compete with, deter, and, if necessary, defeat our adversaries while we accelerate

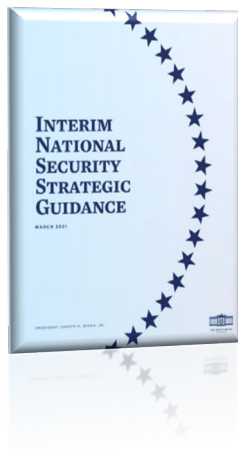


development of a modernized, integrated all-domain naval force for the future.

The President's Budget submission for FY 2022 (PB22) maintains operational concepts, capabilities, and plans to bolster deterrence and improve our competitive advantage. It supports readiness through sustained investment and performance improvement. The budget accelerates investments in more lethal, networked capabilities and concepts, integrated with the joint force. PB22 provides the nation with a robust, sustainable, and balanced, all-domain fleet. The budget funds key personnel initiatives, reflecting a continued commitment to the Sailors and Marines that volunteer to serve our nation. Finally, PB22 continues a commitment to budgetary reform and fiscal accountability, ensuring good stewardship of taxpayer dollars.

STRATEGIC GUIDANCE AND THEMES

President's Interim National Security Strategic Guidance



The FY 2022 President's Budget request reflects the cascading priorities as detailed in the hierarchy of U.S. Defense strategic guidance. At the top of this hierarchy, the President's Interim National Security Strategy Guidance of the new presidential administration sets the direction for all subsidiary guidance documents to follow. The "Core Strategic Proposition" of the Interim Guidance follows:

The United States must renew its enduring advantages so that we can meet today's challenges from a position of strength. We will build back better our economic foundations; reclaim our place in international institutions; lift up our values at home and speak out to defend them around the world; modernize our military capabilities, while leading first with diplomacy; and revitalize America's unmatched network of alliances and partnerships.

The guidance lists various asymmetric threats to the country, to include biological, climate, cyber, violent extremism and terrorism, and weapons of mass destruction.

The guidance discusses the rise of the People's Republic of China (PRC) as an aggressive power, and it speaks to Russia as a potential disruptor to the U.S. and its

allies. Iran and North Korea are mentioned as potentially burgeoning threats to regional stability, along with terrorism and violent extremism.

The global security landscape is further characterized by “...a revolution in technology that poses both peril and promise. The world’s leading powers are racing to develop and deploy emerging technologies, such as artificial intelligence and quantum computing.”

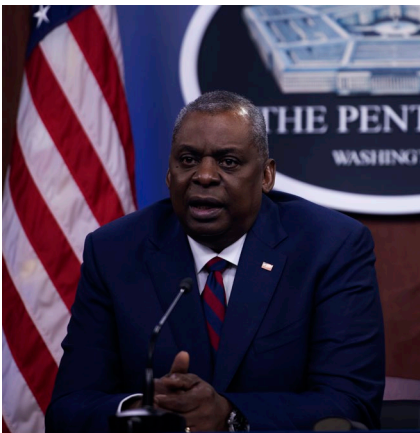
The three key goals of our interim National Security Strategy are:

1. *Defend and nurture the underlying sources of American strength, including our people, our economy, our national defense, and our democracy at home;*
2. *Promote a favorable distribution of power to deter and prevent adversaries from directly threatening the United States and our allies, inhibiting access to the global commons, or dominating key regions; and*
3. *Lead and sustain a stable and open international system, underwritten by strong democratic alliances, partnerships, multilateral institutions, and rules.*

In order to accomplish these goals, the U.S. will “reinvigorate and modernize strategic alliances and partnerships around the world”. The Interim Guidance calls for a significant military presence in the Indo-Pacific region and Europe, and for a smaller force in the Middle East. The number of forces in these areas will be determined by a forthcoming Global Posture Review.

Secretary of Defense Priorities

To supplement and clarify the Interim Guidance, Secretary of Defense Austin issued a message in March 2021 to the Department of Defense (DoD) emphasizing his three



priorities of defending the nation, taking care of people, and succeeding through teamwork. His message reiterated China “as our number one pacing challenge” and echoed some of the same messages about people, readiness, and development of the future force. The three key themes are:

Defend the Nation. The Secretary stated the priorities of defeating COVID-19, prioritizing China, addressing other advanced and persistent threats, innovation, and tackling the climate crisis. He stressed rapid

innovation while we divest of legacy capabilities to “improve the efficiency of the force and guarantee freedom of action in contested, complex operating environments.”

Take Care of Our People. The priorities related to people are growing talent, building resilience and readiness, and ensuring accountable leadership. The Secretary emphasized a full embrace of “a diversity of backgrounds, experiences, and thought” to “drive innovative solutions across the enterprise”.

Succeed through Teamwork. In order to succeed, the Secretary proposed prioritizing collaboration and joint action with partners and allies to “secure our common interests and promote our shared values.” Most obviously, unity is needed within the DoD in order to “ensure the greatest success in protecting and defending our Nation.”

Acting Secretary of the Navy Strategic Vision

Following the issuance of the President’s Interim Guidance and the Secretary’s statement, the Acting Secretary of the Navy Thomas Harker issued his strategic vision which details operating...



“as one to protect the American people and our interests in the most effective and efficient way possible.

We will invest in the health, readiness, and capability of our force of today, and the force of the future, to maintain our Nation’s forward maneuverability and decisive maritime advantage, while strengthening our force-multiplying alliances and partnerships with the interagency, across industry, throughout the joint force, and around the world.”

The Secretary promotes his “enduring priorities” of “One Navy-Marine Corps Team,” “Put People First,” and “Maritime Dominance – Now and In the Future”.

One Navy-Marine Corps Team. The DON will strive to “achieve seamless integration, communication, and collaboration across the Department.” The DON will achieve this goal through building “a strong culture of

communication, collaboration, trust and transparency across the department, supported with appropriate tools and processes.” The DON will prioritize the modernization of business systems, driving towards a more data-driven decision-making culture. We will strive for a “common understanding of maritime challenges” and the DON’s contribution to joint operations. The DON will strengthen relationships with our military allies and partners to optimize operational integration.



Put People First. The DON will “build and sustain a strong, diverse, healthy, sustainable force that is ready when called upon.” The DON will achieve this goal by responding to COVID-19 with a “robust, proactive, and coordinated response” to minimize the impact to Sailors, Marines, and civilians (keeping readiness high) and by

contributing to the national effort to combat the disease. We will cultivate “the talent and unique insights of personnel from diverse personal, cultural, and professional backgrounds,” and “build the workforce of the future” through investments in professional development, training, and education. The DON team will create a positive work environment devoid of sexual assault, sexual harassment, racism, and violent extremism. The Department will take care of Sailors, Marines and their families through fairness in promotion practices and programs to improve quality of life.



Maritime Dominance – Now and In the Future. The DON will “develop and maintain the strategic concepts and warfighting capabilities, readiness, and sustainment necessary to ensure U.S. dominance of the maritime domain against an evolving threat environment.” The Department will achieve this goal through properly positioning global forces to ensure the proper capabilities can be brought to bear in sufficient force to ensure victory against great power, regional, and other aggressors, while maintaining a degree of

operational flexibility. The design of the future force will enable the Navy and Marine Corps to “effectively engage in strategic competition and sustain maritime supremacy against the full spectrum of potential threats while remaining financially viable and operationally sustainable.” To combat climate change, the DON will invest in technologies to reduce our carbon footprint, and concurrently, the Department will adapt itself as necessary to mitigate any potential negative effects resulting from the changing climate. We will take advantage of emergent, game-changing technologies through targeted investments in artificial intelligence, cyber weapons, unmanned technologies, directed energy, and hypersonics. Further, investments in facilities, infrastructure, and systems are necessary to properly support our naval forces.

Chief of Naval Operations (CNO) Strategic Guidance

The Chief of Naval Operations (CNO) recently issued the *CNO Navigation Plan 2021*, in which the Chief establishes the Navy’s strategic priorities. The end state of this plan follows:

“Our Navy will be manned, trained, and equipped to control the seas and project power. Our fleet will be a potent, formidable force that can decisively win at sea, deter our competitors, and assure our allies and partners. Joining with the Marine Corps and Coast Guard, we will deliver Integrated All-domain Naval Power to prevail in day-to-day competition, in crisis, and in conflict.”

The guidance emphasizes the critical balance of maintaining readiness while transforming the fleet. By maintaining forward presence, the Navy adds credibility to our national influence abroad and is postured to respond to threats or crises involving our regional allies, to protect freedom of navigation in international waterways, and to otherwise protect our national interests abroad. While maintaining readiness, and within fiscal limitations, the Navy must prioritize in order to deliver the cutting edge capabilities it needs to win against strategic competitors. The explosive rate of technological change complicates this management of force readiness and force modernization efforts. The



CNO's guidance emphasizes Sailors, readiness, capabilities, and capacity as reflected in the excerpt below:

“Develop a Seasoned Team of Naval Warriors. Develop a dominant naval force that can outthink and outfight any adversary. Our Sailors will remain the best trained and educated force in the world. We will cultivate a culture of warfighting excellence rooted in our core values.

Deliver a More Ready Fleet. Deliver a Navy that is manned, trained, and equipped to deploy forward and win in day-to-day competition, in crisis, and in conflict. We will consistently complete maintenance on-time and in full, refurbish our critical readiness infrastructure, master all-domain fleet operations, and exercise with like-minded navies to enhance our collective strength.

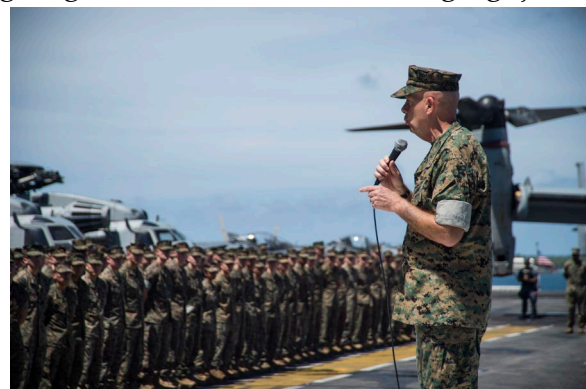
Deliver a More Lethal, Better-Connected Fleet. Deliver a Navy capable of projecting synchronized lethal and non-lethal effects across all domains. We will deploy the Naval Operational Architecture by the middle of this decade; an array of counter-C5ISR capabilities; weapons of increasing range and speed; and a directed-energy system capable of defeating anti-ship cruise missiles.

Deliver a Larger, Hybrid Fleet. Grow a larger, hybrid fleet of manned and unmanned platforms – under, on, and above the sea – that meets the strategic and operational demands of our force. We will deliver the Columbia class program on time; incorporate unmanned systems into the fleet; expand our undersea advantage, and field the platforms necessary for Distributed Maritime Operations.”

Commandant of the Marine Corps (CMC) Strategic Guidance

The U.S. Marine Corps is vigorously redesigning the force for naval expeditionary warfare in actively contested spaces, aligning the Service with emerging joint operating concepts as part of a naval expeditionary force.

The future Fleet Marine Force (FMF) requires transformation from a legacy force to a modernized force with new organic capabilities. As outlined in the *Commandant's Planning Guidance (CPG)* and *Force Design 2030*, the FMF will enable



the Navy and Marine Corps to restore the strategic initiative, and to define the future of maritime conflict by capitalizing on new capabilities to deter conflict and operate persistently inside an adversary's weapon engagement zone (WEZ). The CMC's top three priorities in FY 2022 focus on Force Design, Talent Management Reform, and Training and Education Reform.

Force Design. This continues to be the CMC's number one priority. The Marine Corps needs to be organized, trained, equipped and postured to meet the demands of the rapidly evolving future operating environment. The imperatives of maritime competition, deterrence, and conflict in an era of warfare dominated by the emergence of a mature precision-strike regime demand change. The goal of Force Design is to provide the fleets and joint force a naval expeditionary force that will:

- Successfully compete with peer adversaries in the maritime gray zone.
- Deter, and if required, fight and win in support of naval campaigns.
- Facilitate sea denial and sea control.
- Win the reconnaissance and counter-reconnaissance (scouting & counter-scouting) competition.
- Persist inside actively contested spaces.
- Be capable of "rapidly sensing, making sense of, and acting upon information" inside an enemies weapons engagement zone.

Talent Management Reform. The Commandant's goal is to develop a true talent management system that measures success by our ability to attract, recruit, identify, incentivize, and retain the most talented individuals across the entire force. The objectives of this initiative include:

- Retain the most talented Marines and replace individuals leaving the Marine Corps with even more talented Marines.
- Adopt a model focused on the longer-term "accession to retention," (today's model is focused on accession to end of first enlistment).
- Accommodate the changing interests and needs of the most talented within our force, such as change in primary occupational field, marriage and childbirth or adoption, and family stability for children in high school.

Training and Education Reform. The Marine Corps cannot assume it will maintain a technical advantage over peer competitors in all areas, all the time. This becomes even more critical for our forces to maintain a competitive edge in decision-making at both the individual Marine and unit level of competence. The goal of this initiative is to adopt an "information age approach" in training and education that produces better leaders and warfighters. This approach includes:

- Focus on identifying, developing, and sustaining the unique talents of individual Marines.
- Increase the intellectual standards for all Marines, but particularly officers-at every stage of their selection for and attendance at formal schools.
- Graduate Marines from Initial Military Occupational Specialty (MOS) school prepared to join their first units at a higher level of technical and tactical competence.
- Change how we train and educate, moving away from rote memorization, testing and “perfect” school solutions to practical judgment under pressure.
- Expand use of force training and wargaming and make live-constructive training a normal part of the training continuum.

SECURITY AND OPERATIONAL ENVIRONMENT



The emergence of China as a great power is the single biggest threat to the United States, its allies, and interests around the world. Though China’s navy does not have anywhere near the tonnage of the U.S. Navy, China has surpassed the U.S. in the quantity of ships it possesses, having rapidly grown its Navy from 262 to 350 ships. This

fleet is supported by the largest missile force in the world. China’s navy continues to invest in larger, more capable surface warfare ships, aircraft carriers, and submarines, and they continue to build ships at a faster rate than the U.S. Navy. By 2023, China expects to launch its third aircraft carrier, and continues its development of cutting edge technologies to include fifth-generation fighter aircraft.

Russia remains a competitor as well. Russia has been modernizing all facets of its military to include warships, aircraft and missiles. Russia is pushing the technological envelope with its development of hypersonic missiles, tactical nuclear weapons, and modern submarines. Both China and Russia have interests in direct conflict with those of the U.S. and its allies, and both countries have in recent years become more aggressive with their threats to the international rules-based order as the growth in

their military capabilities have greatly reduced the U.S. military advantage that was once insurmountable to our enemies.

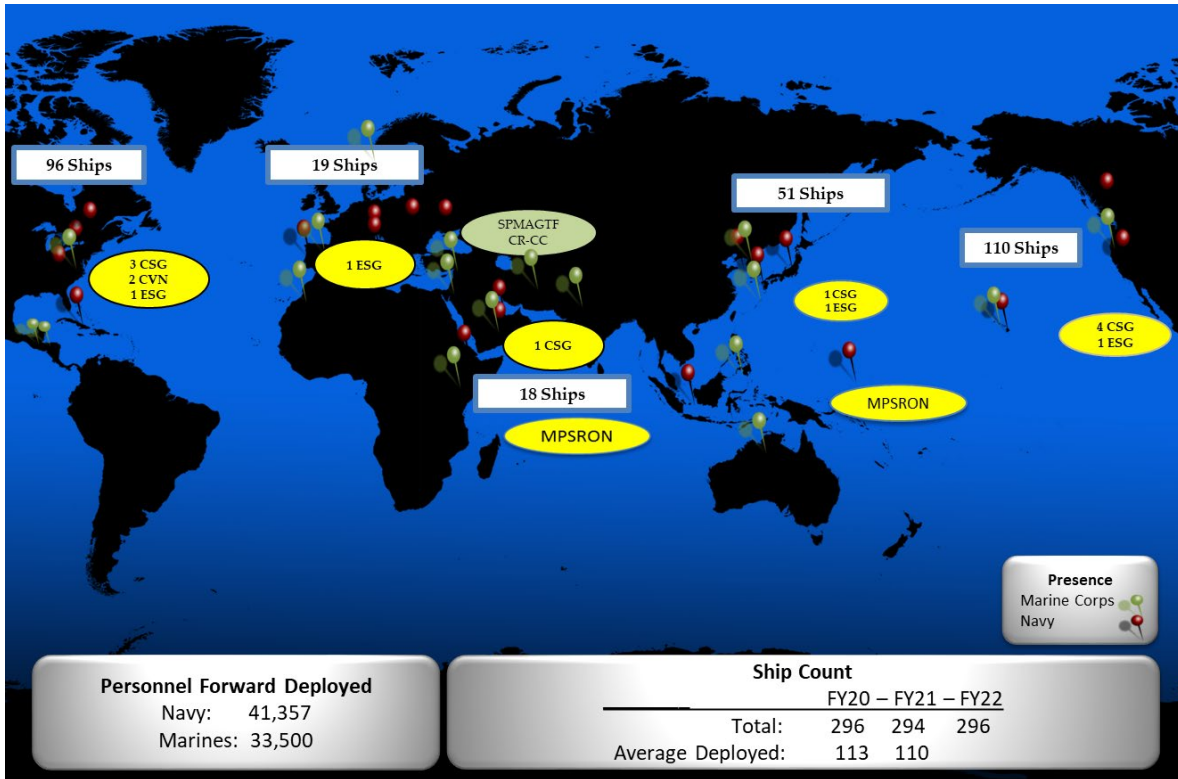
Figure 1.1 – Security and Operational Environment



Photo Sources: /¹ Maxar Technologies; /² wenweipo.com; /³ Associated Press, /⁴ Military and Security Developments Involving the PRC 2020: Annual Report to Congress, /⁵ Via Xinhua News Agency

The threats the U.S. faces from these potential adversaries exists in multiple domains and geographic locations. The PRC in particular has proven itself a grave concern on multiple fronts. China has challenged international norms and laws at home and abroad, and it has challenged the rights of its neighboring countries and freedom of navigation in the South China Sea. The PRC has become increasingly flagrant in their violations of human rights in western China and Hong Kong; their rhetoric and military posture towards Taiwan have worsened; their disregard for the rights of neighboring countries is showcased by their building of artificial islands to claim almost the whole of the South China Sea; and they have worked to wrest territories and resources from countries worldwide by purchase, subversion, or by intimidation. The PRC's and Russia's revisionist approaches at sea threaten U.S. interests, undermine alliances and partnerships, and degrade the free and open international order. Their aggressive naval growth and modernization are eroding U.S. military advantages.

Figure 1.2 – Operational Context (as of 6 May 2021)



Both China and Russia are actively waging a cyber war against the U.S. and its allies. In addition to China and Russia, enemies of a much smaller scale could also threaten the U.S. asymmetrically, and potential nuclear or biological threats cannot be ignored. The threats to the U.S. encompass all domains: on land, in the sea, in the air, in space, and in the cyber realm. The Navy and Marine Corps team must have the ships, aircraft, weapons, facilities, equipment, manning, and training necessary to effectively cooperate with the other services and international allies and partners to counter and defeat all threats to the U.S. and its allies in multiple domains simultaneously.

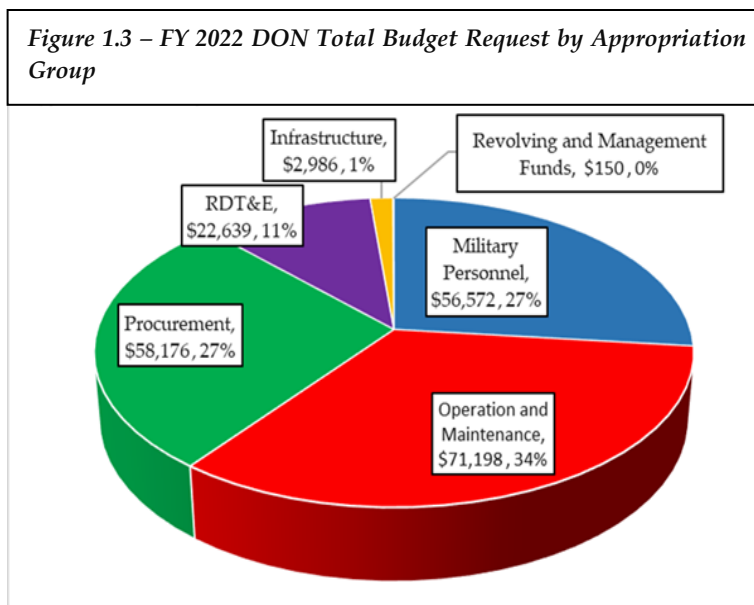
Today 90 percent of the world’s manufactured goods are transported on the world’s oceans, and critical lines of communication span the ocean floor, hosting most of the world’s internet traffic. Both China and Russia have chosen to posture themselves to project military power into the maritime domain. China, for reasons mentioned above, is already asserting itself against its maritime neighbors, slowly progressing towards its goal of total domination of the South China Sea. As climate change continues, the Arctic becomes more navigable, and Russia increases its presence in the Arctic sea, seeking control of resources and corridors of navigation there. In addition, other nations such as Iran, North Korea, and non-state actors are exploiting

asymmetric capabilities to create instability and uncertainty on the global maritime commons. Figure 1.1 displays the prodigious presence of both China and Russia in the world's oceans, and exemplifies the need for a counterbalance of U.S. and allied naval forces in these regions in particular, but also throughout the world, to ensure the freedom and security of the world's waterways.

To meet the challenges discussed, the Navy and Marine Corps provide forward postured sea-based forces (Figure 1.2), including 41,357 Sailors and 33,500 Marines currently deployed or underway on 112 ships, to include four carrier strike groups, and two expeditionary strike groups. In addition, the Navy maintains cyber mission teams across the globe conducting cyber operations in support of naval forces. The Navy and Marine Corps are engaged in joint, integrated operations around the globe, providing immediate response options, assuring allies and deterring our adversaries.

FY 2022 PRESIDENT'S BUDGET OVERVIEW

The budget ensures that the DON will be ready for the global challenges before us with the personnel, platforms, and technology to secure vital sea lanes, stand together with our allies, and protect the United States of America as reflected in Figure 1.3. The total FY 2022 President's Budget request for the Department of the Navy (DON) is \$211.7 billion, providing the resources needed to effectively defend the nation and take care of our people while leveraging teamwork for success. This budget represents a \$3.8 billion increase over our FY 2021 enacted budget.



Our procurement accounts decrease by 5.7 percent to fund the increases in operation & maintenance (up 3.4 percent), military personnel (up 3.5 percent), research and development (up 12.4 percent), and infrastructure accounts (up 13.9 percent) as we seek to innovate and modernize the force while

maintaining and enhancing readiness and people-focused programs. Figure 1.3 displays the total DON FY 2022 President's Budget request by appropriation group.

Defend the Nation

The FY 2022 President's Budget reflects hard choices to divest of less capable platforms and systems to invest in a powerful and superior future force. Throughout the budget process and in all aspects of capability acquisition, design, construction, and deployment, the Department balances the urgent readiness needs of our force today with investments in the future force and effective business process reforms in order to ensure our Sailors and Marines are always ready to fight and win in any climate or place.

To maintain dominance, the United States needs a balanced Naval force, capable of striking targets from all domains. The force design must emphasize distributed awareness, lethality and survivability in high-intensity conflict. This budget provides a balanced approach to growing capacity, equipping Sailors and Marines to deliver synchronized lethality across all domains of the future conflict.

Procurement

Shipbuilding procurement funding decreases from \$23.3 billion in FY 2021 to \$22.6 billion in FY 2022, for a reduction of 3.0 percent. However, the Department carefully balanced resources and requirements, weighing the effects of our program decisions on the industrial base to ensure our nation maintains the skills, capabilities, and capacities critical to our national defense. In FY 2022, we fund eight battle force ships.



The Department continues to prioritize building a capable and lethal submarine fleet, with incremental funding for the FY 2021 Columbia class submarine and two Block V Virginia class fast attack submarines (SSBNs). The one Arleigh Burke class destroyer (DDG-51) will be a Flight III ship equipped with the Advanced Air and Missile

Defense Radar and the AN/SLQ 32 Surface Electronic Warfare Improvement Program Block III. One Constellation class guided missile frigate (FFG) is requested, which is a more lethal and survivable multi-mission small surface combatant to address increasingly complex threats in the global maritime environment; funding is also requested for advance procurement for a future ship. The budget also requests one John Lewis class oiler (T-AO 205) and advance procurement funds for a future oiler. The John Lewis class oiler will recapitalize the existing Henry J. Kaiser class oilers to supply fuel and dry cargo to Navy ships at sea. Two Navajo class towing, salvage, and rescue ships (T-ATS) are requested which will be the functional replacement for the Powhatan class (T-ATF) fleet tugs and the T-ARS class salvage ships. One ocean surveillance ship (T-AGOS(X)) is requested to gather underwater acoustical data to support the Integrated Undersea Surveillance System mission by providing a ship platform capable of theater anti-submarine passive and acoustic surveillance.

Aviation procurement funding decreases from \$19.5 billion in FY 2021 to \$16.5 billion in FY 2022, a 15.6 percent decrease. This decrease is attributable to the end of procurement for F/A-18, P-8A, VA-92A, and E-6B. The budget funds procurement of

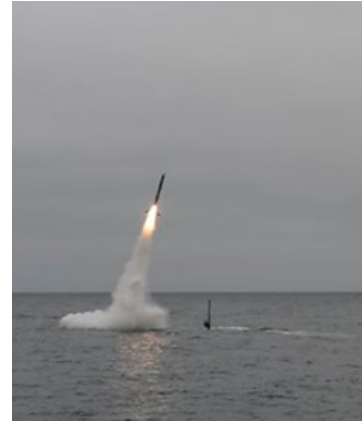


107 aircraft (fixed-wing, rotary-wing, and unmanned) in FY 2022. Fixed-wing aviation investments are comprised of 17 F-35B and 20 F-35C Lightning IIs, five E-2D Advanced Hawkeyes, and six KC-130J Super Tankers. FY 2022 continues the ramp-up of CH-53K King Stallion helicopter production with nine helicopters, and a multi-year procurement of

the CMV-22 Osprey, Carrier Onboard Delivery (COD) variant (three aircraft) and MV-22B Osprey (five aircraft). The budget also purchases the TH-73A Advanced Helicopter Training System with a buy of 36. Unmanned aircraft investments include six Medium Altitude Long Endurance-Tactical (MALE-T) Unmanned Aerial Systems (UASs). The procurement of MQ-4C Tritons is paused in FY 2022 to allow the Integrated Functional Capability-4 (IFC 4.0) design to mature, which will eliminate concurrency risk and minimize the retrofit cost.

Weapons procurement funding decreases from \$4.5 billion in FY 2021 to \$4.2 billion in FY 2022, a 0.6 percent decrease, while funding key ship and aviation weapons. FY 2022 ship weapons procurement includes: 60 Block V Tactical Tomahawks, 300

navigation and communications kits, 156 recertification kits, and 39 Maritime Strike Tomahawk kits; 125 Standard Missile-6s; 100 Rolling Airframe Missiles; 108 Evolved Sea Sparrow Missiles; 58 MK 48 Advanced Capability heavyweight torpedoes and 30 kits; 91 MK-54 anti-submarine torpedoes; 34 Naval Strike Missiles; and 14 Littoral Combat Ship Surface-to-Surface Missile Modules. Aircraft weapons procurement includes: 178 AIM-9X/Sidewinders, 54 Advanced Anti-Radiation Guided Munitions-Extended Range; 164 Joint Air-to-Ground Missiles; 18 Miniature Air Launched Decoys; 48 Long-Range Anti-Ship Missiles; 25 Joint Air-to-Surface Standoff Missiles Extended Range; 120 Hellfire Captive Air Training Missiles; and 180 Small Diameter Bombs Increment II.



Marine Corps procurement increases from \$2.7 billion in FY 2021 to \$3.0 billion in FY 2022, an increase of 11 percent. This reflects the Marine Corps investment in modernization and innovation in support of the Commandant's *Force Design 2030* initiatives to build the future force. Key efforts funded include: 613 Joint Light Tactical Vehicles; 92 Amphibious Combat Vehicles; and 8 Ground/Air Task-Oriented Radar systems.

Research and Development

Shifting from today's procurements to future force investments in lethality, our budget request provides continued research and development (R&D) efforts to insert critical technologies to deliver asymmetric capabilities and technological advantages against adversaries in all environments and across all spectrums. Research and development funding increases 12.4 percent to \$22.6 billion. This budget sustains ship, aircraft, and weapons development efforts. We recapitalize our strategic nuclear deterrent through the Columbia class submarine development program, and we provide R&D funds for other ship building efforts such as the Ford class carrier, SSN(X) future attack submarine, the Constellation class guided missile frigate, and DDG(X). The budget provides funds to continue development of unmanned surface

vessels, unmanned undersea vehicles, and unmanned aerial systems. The DON continues to advance capabilities in the F-35 Lightning II for both the Navy and Marine Corps. In the area of weapons development, we are providing for longer range, and hypersonic weapons and increasing investments in areas including Conventional Prompt Strike and our Standard Missile family of missiles. The budget request continues investment in key Marine Corps development programs such as the Ground Based Anti-Ship Missile, Ground/Air Task Oriented Radar, CH-53K King Stallion helicopter, and the Amphibious Combat Vehicle.

Readiness

Navy and Marine Corps forces remain deeply engaged, forward deployed, and at a high operational tempo providing National Command Authority immediate options, assuring allies and deterring our adversaries. This budget request supports requirements for our carrier strike groups, amphibious ready groups, and Navy and Marine aviation units to train and respond to persistent and emerging threats. The Navy deploys full spectrum-ready forces to further security objectives in support of U.S. interests. The Navy and Marine Corps forward-postured, sea-based forces provide immediate response options and assure our allies of our commitment.

The budget maintains naval operational readiness. The Navy continues its commitment to ship maintenance, leveraging data analytics in maintenance management and funding repairs, overhauls, and refueling of submarines, aircraft carriers, and surface ships at the Navy's four public shipyards, regional maintenance centers, intermediate maintenance facilities, and private shipyards. This account increased by \$0.5 billion from the FY 2021 enacted position, which funds 97 percent of our full requirement. Ship maintenance improvements include better contracting strategies, increasing dry dock capacity, optimizing facility and pier layout, level load port workloads, and more accurate availability duration planning. These efforts will provide industry with a stable and predictable demand signal to encourage maintenance capacity growth to match our growing fleet. We continue to capitalize on the OPN pilot program for funding private contractor shipyard maintenance in the Pacific by extending it to both fleets. Similarly, ship operations funding increases 6.4 percent



over last year. This resources our full requirement, allows for 58 days underway while deployed and 24 days underway while non-deployed per quarter.

The Marine Corps is redesigning the force for naval expeditionary warfare in actively contested spaces Marine Corps readiness is focused on building a more lethal force by training for advanced and persistent threats; growing cyberspace activities; and optimizing depot maintenance to achieve 80 percent serviceability of reportable expeditionary ground equipment. These efforts will help ensure the Marine Corps is prepared to operate inside actively contested maritime spaces in support of fleet and joint force operations.

Aircraft depot maintenance and logistics funding increases as we seek to maximize readiness by prioritizing funding based on criticality and impact. To sustain our higher mission capable rates for strike fighters. Funding for the Flying Hour Program increases to meet our tactical air (TACAIR) requirement, increased aviation cost-per-hour for some of our newer aircraft, and allow for the increased contract maintenance for training aircraft. TACAIR proficiency is critical to winning the high-end fight.



Our current budget request appropriately prioritizes shore investments to increase fleet readiness. For FY 2022 facilities sustainment, restoration, and modernization funding overall decreases 6 percent to \$4.2 billion. We slightly increase DON sustainment funding over FY 2021, with the Navy and Marine Corps funded to 80 percent of the facilities sustainment model. Restoration and Modernization funding is reduced 34.7 percent compared to FY 2021, but that reduction is driven by one-time natural disaster costs for critical infrastructure projects that artificially inflating the FY 2021 budget. Base operating support funding in FY 2022 increases 4.1 percent over FY 2021, and prioritizes people programs such as sexual assault prevention, suicide prevention, and childcare, as well as funding traditional requirements like utilities, security, transportation, and port and airfield operations.

Take Care of Our People

The greatest source of readiness and strength for our force will always be the people who wear the uniform and comprise our civilian workforce, as well as the families that serve alongside them. We are committed to ensuring our Sailors, Marines, and civilians are trained and equipped to execute the mission and return home safely, and that their families are provided with the housing, medical attention, and education they deserve. In this budget request, the DON continues its commitment to education, sexual assault prevention and response (SAPR), mental health, child and youth programs, and morale, welfare and recreation programs.



Sailors and Marines are our greatest asset and comprise the foundation of operational readiness. This budget takes care of our people, providing a 2.7 percent pay raise to uniformed and civilian personnel. The FY 2022 budget aligns our military manpower size and composition with the force structure decisions to ensure proper manning for new and existing platforms and capabilities. Our active Navy military manpower decreases by 1,600 from the FY 2021 authorized level to 346,200 as the Navy actively manages personnel to match the needs of the fleet. This budget sustains Sailor 2025 and personnel system transformational objectives, and it supports new platforms and new capabilities, while reducing overall strength due to planned decommissionings of several ships. Our reserve Navy military manpower (58,600) decreases slightly from FY 2021. This number of Selected Reservists and full-time support personnel will provide critical strategic depth aligned with the needs of the force.

Our active Marine Corps military manpower of 178,500 end strength in FY 2022 represents a reduction of 2,700 from the FY 2021 enacted budget. This end strength decrease aligns with force structure changes and enables the Marine Corps' Force Design 2030 modernization initiatives. The reduction of active duty end strength is part of the larger effort to modernize the Marine Corps by divesting of legacy defense

programs and the force structure that supports those legacy capabilities, such as tanks, bridging and law enforcement, along with a reduction of surge capacity, with the intent of investing in modernization. Our Selected Reserve Marine Corps military manpower (36,800) maintains a “Ready-Relevant-Responsive” force capable of seamlessly operating as a part of the Total Force to fulfill combatant command and service rotational and emergent requirements.

The FY 2022 budget requests funding for 223,113 civilians, including foreign national indirect hires, recognizing the key role the civilian workforce has in the Department. This increase of less than one percent from FY 2021 represents sustained and targeted growth necessary for mission success. Our civilians supplement our uniformed service members, and provide critical support in a wide range of areas. While the bulk of these civilians are critical enablers for functions such as ship maintenance, research and development, and installation management, the DON maintains emphasis on audit accuracy and adds personnel for Sexual Assault Prevention and Response Office (SAPRO). Our civilian workforce supports a larger, more capable and agile naval force.

Succeed through Teamwork

A dominant naval force is central to the effective execution of our strategic goals. We must be ready at all times to execute as one integrated naval force – Navy and Marine



Corps seamlessly linked at every level – with common logistics, infrastructure, practices and support networks – executing a fleet-wide emphasis on

resilient and combat ready forces. These integrated connections must extend beyond the DON as well, encompassing our vital partners across the joint force and the whole of government, as well as our industry partners, shipyards, and allies and partners around the world.

As shown in Figure 1.4, the Navy and Marine Corps are engaged in joint, integrated operations around the globe, providing immediate response options, assuring allies

and deterring our adversaries. The strategic maritime defense partnerships we maintain today with our partners and allies extend the reach and power of our force.

The DON is also working alongside our partners, we are aligning our efforts to produce the right platforms and capabilities for the warfighter, and ensure maximum availability and throughput from design to production to maintenance. We are working closely with our partners and suppliers in the defense industrial base to ensure the continued viability of the crucial businesses and infrastructure needed to ensure our ships, aircraft, and ground equipment are available when needed for the defense of our nation.

Figure 1.4 Secure Maritime Advantage with Allies and Partners

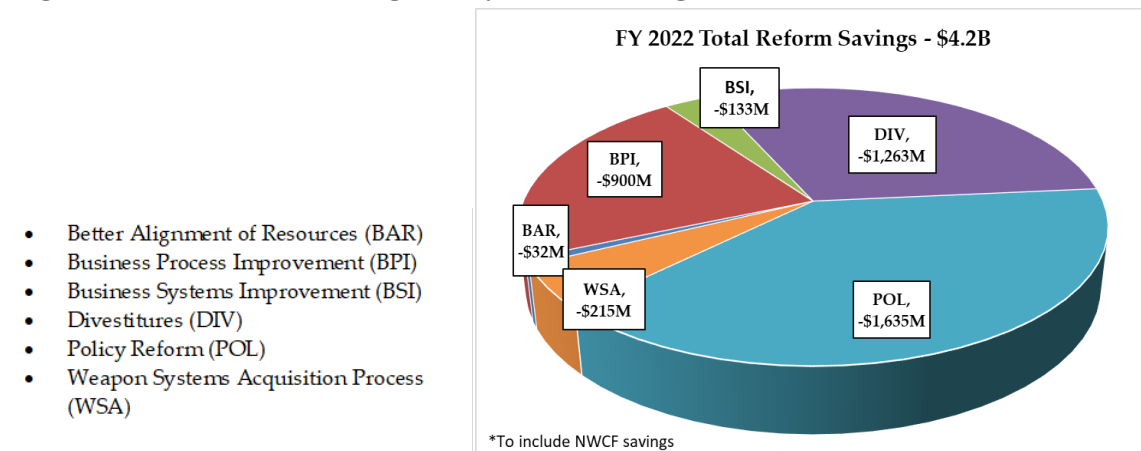


Reform

Successful implementation of strategic guidance in a constrained budgetary environment requires maximizing the use of every dollar. We continued the practice of rigorously reviewing the Department's budget, scrutinizing each line item's net contribution to strategic direction. This included prioritizing the allocation of dollars based on alignment to strategy, return on investment, relative value, portfolio

optimization and specific outcome metrics. The continued use of data-driven process reforms like performance-to-plan have helped illuminate the highest leverage points and areas where we can accelerate learning. We identified resources that are categorized by: better alignment of resources (BAR); business process improvements (BPI); business system improvements (BSI); divestment of legacy systems and programs (DIV); policy reform (POL); and weapons systems acquisition process (WSA). The DON achieved reform savings of \$4.2 billion in FY 2022 that were reapplied within the department as shown in Figure 1.5.

Figure 1.5 FY 2022 Budget Reform Savings



Audit

The Navy and Marine Corps have benefitted greatly from audit, and our team is aggressively working to remediate the root causes of the discrepancies found by our auditors. Auditor findings highlight opportunities for operational and process improvements, and we are capitalizing on them. The leadership of the Navy and Marine Corps embrace the lessons learned from the audit as a means of improving our warfighting capability and readiness and demonstrating excellence. We are collectively making progress to address the auditors' findings and supporting the USMC's goal of attaining a positive opinion next year. A DON Audit Roadmap was created to identify key milestones for each priority area, targets resources for maximum impact, helps manage risk, and delineates a clear path to a clean opinion.

RESOURCE SUMMARY

The combined base and direct war DON FY 2022 President’s Budget request is \$211.7 billion. Figure 1.6 provides the historical trends of our DON budget back to FY 2010. The yellow line in the graph shows that the real purchasing power of the DON budget (in constant, FY 2010 dollars) has remained essentially flat since FY 2010.

Figure 1.6 – DON FY 2022 Fiscal Context (Dollars in Billions)

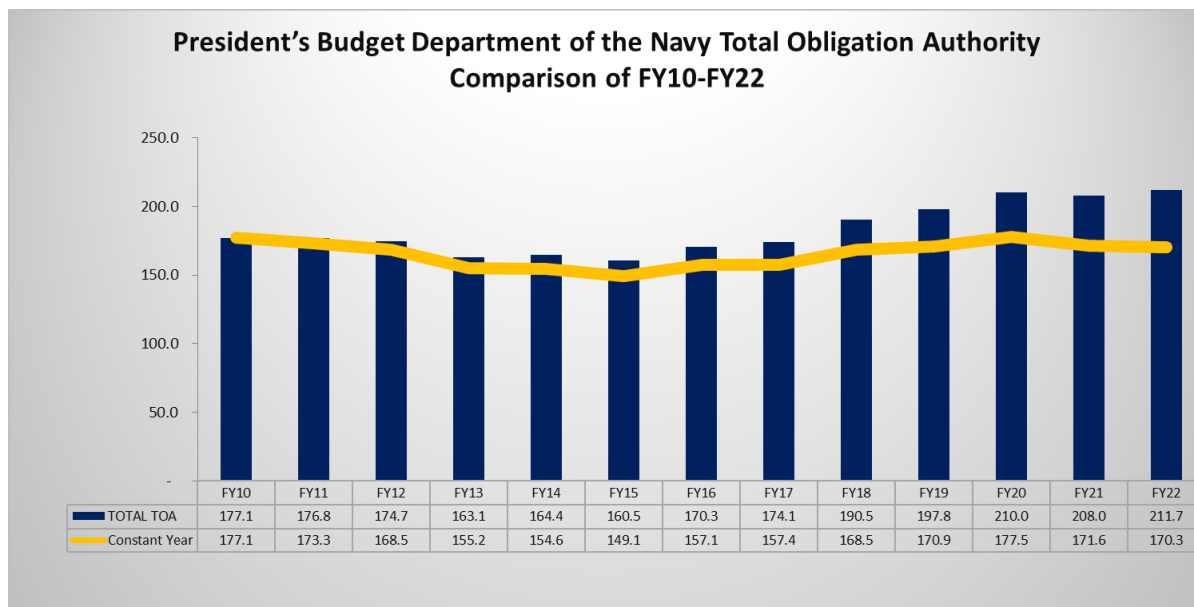


Figure 1.7 displays the total DON FY 2022 President’s Budget request by appropriation and service, providing comparisons to FY 2020 and FY 2021 to add context. This budget request balances sustaining readiness with investments in future capabilities to field a current and future force capable of deterring and defeating any threat to our Nation, our allies, and our interests.

Figure 1.7 – FY 2022 DON Total Budget Request by Appropriation \$211.7B

<i>(In millions of Dollars)</i>	FY 2020	FY 2021	FY 2022
Military Personnel, Navy	31,866	34,113	35,497
Military Personnel, Marine Corps	13,945	14,676	14,748
Reserve Personnel, Navy	2,007	2,212	2,317
Reserve Personnel, Marine Corps	740	846	882
Medicare-Eligible Retiree Health Fund Contribution, Navy	1,550	1,673	1,888
Medicare-Eligible Retiree Health Fund Contribution, MC	860	905	993
Medicare-Eligible Retiree Health Fund Contribution, Res Navy	137	146	160
Medicare-Eligible Retiree Health Fund Contribution, Res MC	77	82	86
Operation and Maintenance, Navy	58,203	58,666	60,441
Operation and Maintenance, Marine Corps	9,649	8,371	9,025
Operation and Maintenance, Navy Reserve	1,123	1,114	1,149
Operation and Maintenance, Marine Corps Reserve	295	292	285
Environmental Restoration, Navy	-	421	298
Aircraft Procurement, Navy	19,160	19,513	16,477
Weapons Procurement, Navy	4,134	4,483	4,221
Shipbuilding and Conversion, Navy	21,243	23,269	22,571
Other Procurement, Navy	10,624	10,854	10,876
Procurement, Marine Corps	3,001	2,696	3,043
Procurement of Ammunition, Navy/Marine Corps	1,040	869	988
National Sea-Based Deterrence Fund	1,821	-	-
Research, Development, Test, and Evaluation, Navy	20,585	20,138	22,639
Military Construction, Navy and Marine Corps	6,431	1,936	2,368
Military Construction, Naval Reserve	55	71	72
Family Housing, Navy (Construction)	48	43	78
Family Housing, Navy (Operations)	334	366	357
National Defense Sealift Fund	377	-	-
Consolidated Prior BRAC	125	205	111
Navy Working Capital Funds	119	-	150
TOTAL	209,550	207,963	211,721
<i>Navy</i>	162,488	162,901	163,866
<i>Marine Corps</i>	47,061	45,062	47,855

This Department of Navy budget request implements overarching guidance in a responsible and effective way, balancing the need to sustain readiness today with investments in future capabilities to field a current and future force capable of deterring and defeating any threat to our Nation, our allies, and our interests.

Our budget reflects our resolve to compete, deter, and – if necessary – defeat our rivals, while accelerating the development of a more lethal fleet and having the Navy and Marine Corps generate an integrated all-domain naval power. Only by working as a team and taking care of our people will we be able to defend the nation in the years ahead.



Defend the Nation



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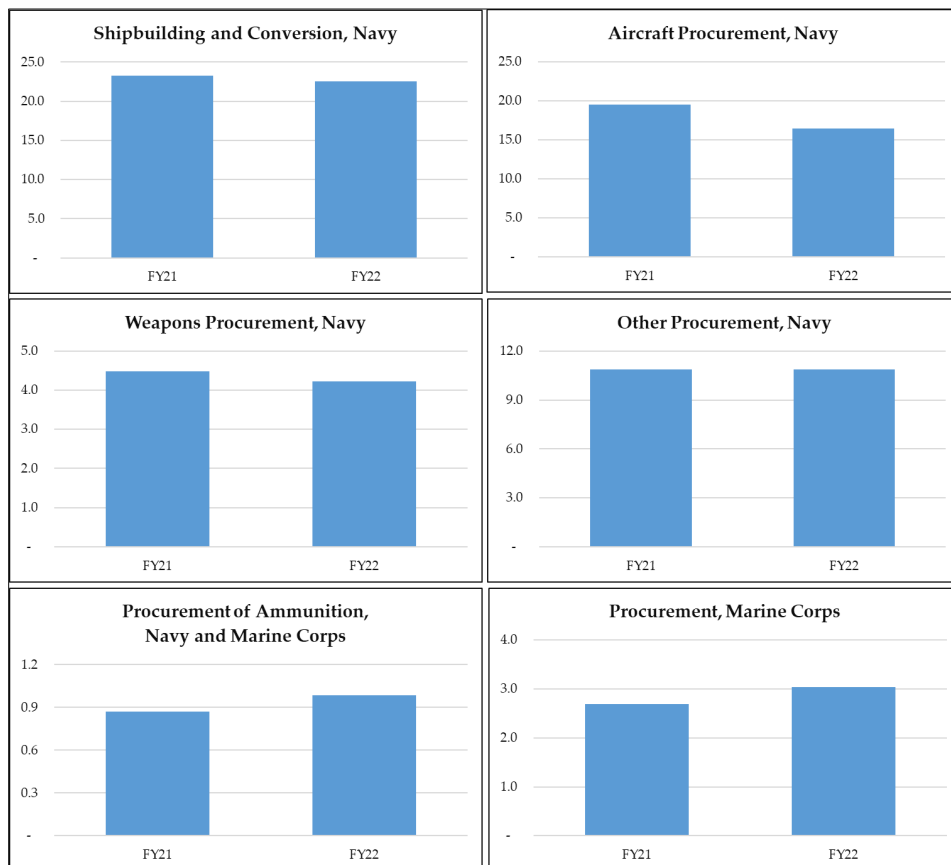
CHAPTER 2: DEFEND THE NATION

SECTION II: PROCUREMENT

OVERVIEW

To maintain dominance, the United States needs a balanced naval force, capable of striking targets from all domains. The Department plans to procure eight battle force ships in FY 2022. The FY 2022 budget continues investments in F-35 strike fighter aircraft, and we increase our preferred munitions inventory, building capacity for the high-end fight. We also invest in unmanned vehicles, cybersecurity, command, control, communications, computers, and intelligence, addressing the multiple dimensions of conflict the Department faces. This budget provides a balanced approach to growing capacity, equipping Sailors and Marines to deliver synchronized lethality across all domains of the future conflict. Figure 2.1 displays procurement funding streams in FY 2021 (enacted) and FY 2022.

Figure 2.1 – Procurement, FY 2021 – FY 2022 (Dollars in Billions)



SHIP PROCUREMENT, NAVY

To compete and win, the United States needs a balanced naval force, capable of striking targets from all domains. The force design must emphasize distributed awareness, lethality and survivability in high-intensity conflict. The force must be adaptable, able to perform missions on the high and low spectrum of combat, and be capable of projecting power by delivering precision effects at long ranges. The Navy's FY 2022 shipbuilding budget procures eight battle force ships, including two Virginia class submarines, one Arleigh Burke class destroyer, one Constellation class guided missile frigate, one John Lewis class fleet replenishment oiler, one ocean surveillance ship, and two Navajo class towing, salvage, and rescue ships. The plan from FY 2021 to FY 2022 is shown in Figure 2.2.

Aircraft Carriers

The next generation aircraft carrier, the Ford class, is the centerpiece of the carrier strike group. Taking advantage of the Nimitz class hull form, the Ford class will feature an array of advanced technologies designed to improve warfighting capabilities and allow significant manpower reductions. With \$2.4 billion requested in FY 2022, the Department will finance the fifth increment of detailed design and construction for the third Ford class carrier (USS Enterprise (CVN 80)) and fourth



increment for the fourth Ford class carrier (USS Doris Miller (CVN 81)). The CVN 80 and CVN 81 were awarded as a two-carrier procurement. Awarding the two carriers together is estimated to save the Department approximately \$4 billion compared to the Navy's original cost estimates for buying CVN 80 and CVN 81 separately.

Figure 2.2 – Shipbuilding Procurement Quantities and Total Funding

	FY 2021	FY 2022
New Construction:		
Columbia Class Submarine	1	-
SSN 774 (Virginia class)	2	2
DDG 51	2	1
FFG	1	1
LPD Flight II	1	-
Expeditionary Fast Transport (EPF)	1	-
T-AO 205	-	1
T-ATS	2	2
T-AGOS(X)	-	1
Total New Construction QTY	10	8
Total New Construction (\$B)	\$ 20.1	\$ 18.1
Other Construction:		
LCAC SLEP	3	2
Ship to Shore Connector	-	2
LCU 1700	5	4
Sealift (used)	2	5
Total Other Construction QTY	10	13
Total Shipbuilding QTY	20	21
Total Shipbuilding (\$B)	\$ 23.3	\$ 22.6

Submarine Programs

The Navy continues to prioritize building a capable and lethal submarine fleet. The FY 2021 budget funded the first Columbia class submarine, which will provide continuous sea-based strategic deterrence into the 2080s. The FY 2022 request of \$4.6 billion will provide the second of three years of incremental full funding for this ship. Additionally, the FY 2022 funding request will continue detailed design efforts, continuous missile tube production, and advanced construction and procurement of major hull components and propulsion systems for the future Columbia class submarines. These efforts help stabilize the manufacturing base and reduce cost and schedule risk for the entire submarine program.

Virginia class fast attack submarines continue to join the existing fleet of Los Angeles and Seawolf class submarines to provide covert force application throughout the world's oceans. The FY 2022 budget request of \$6.4 billion includes funds for two



Block V Virginia class fast attack submarines, related advance procurement and economic order quantity funds executing as part of the FY 2019 – FY 2023 multi-year procurement (MYP), and advance procurement funds for the FY 2024 Block VI ships. All hulls in Block V will include Acoustic Superiority, a step improvement in acoustic stealth

and on-hull sensors. The FY 2022 hulls will include the Virginia Payload Module (VPM), a hull section with four additional payload tubes capable of carrying an additional 28 Tomahawk cruise missiles which increases the Tomahawk capacity from 12 to 40 per ship.

Surface Ship Programs

The Navy continues to invest in capabilities to modernize all-domain lethality and build a ready maritime force postured for long-term competition and warfighting. The FY 2022 budget requests \$2.0 billion for one Arleigh Burke class destroyer. This destroyer will be a Flight III ship equipped with the Advanced Air and Missile Defense Radar (AMDR) and the AN/SLQ 32 Surface Electronic Warfare Improvement Program Block III. The FY 2022 budget request also contains \$1.2 billion to procure the third Constellation class guided missile frigate and advance procurement for two future ships. This is a more lethal and survivable multi-mission small surface combatant to address increasingly complex threats in the global maritime environment.



Amphibious and Logistics Platforms

The FY 2022 budget requests \$68.6 million to support a future America class landing helicopter assault amphibious (LHA) ship. The America class replaces the Tarawa class (LHA 1) amphibious assault ships and the retiring Wasp class (LHD 1). The America class ensures the amphibious fleet remains capable of expeditionary warfare and provides a forward presence and power projection as an integral part of joint, interagency, and multinational maritime expeditionary forces. The FY 2022 budget includes an additional increment of full funding of \$60.6 million for the LPD 31, USS Pittsburgh (FY 2021 ship). This LPD Flight II ship will functionally replace the Widbey Island class ships and Harpers Ferry class class ships for embark, transport, control, insert, sustainment, and extract of Marine Air-Ground Task Force elements and supporting forces by helicopters, landing craft, and amphibious vehicles. The FY 2022 budget includes \$744.2 million for one John Lewis class oiler (T-AO 205) and advance procurement funds for one future oiler. The John Lewis class oiler will recapitalize the existing Henry J. Kaiser class oilers to supply fuel and dry cargo to Navy ships at sea. The FY 2022 budget request includes \$183.8 million for two towing, salvage, and rescue ships (T-ATS). T-ATS class will be the functional replacement for



the T-ATF class fleet tugs and the T-ARS class salvage ships. The FY 2022 budget incorporates \$434.4 million for the purchase of one ocean surveillance ship (T-AGOS(X)). This ship gathers underwater acoustical data to support the Integrated Undersea Surveillance System (IUSS) mission by providing a ship platform capable of theater anti-submarine passive and acoustic surveillance. This is the first ship in the

class. The Navy's Landing Craft Utility (LCU) 1700 program will procure four craft in FY 2022 for \$67.9 million. The LCU 1700 class is the functional replacement for the LCU 1610 class and provides heavy-lift capability to transport personnel and cargo from the ship to the shore. As the Navy continues to deliver prior year ship-to-shore connectors, FY 2022 requests \$156.7 million for two additional connectors. These connectors serve as the functional replacement for the Landing Craft, Air Cushion (LCAC), which is reaching the end of service life and provides the capability to rapidly move USMC assault forces from amphibious ships to the beach.

AIRCRAFT PROCUREMENT, NAVY

The APN account is decreasing in FY 2022 as we reach end-of-purchase for F/A-18E/F Super Hornet, P-8A Poseidon, VH-92 Presidential Helicopter and MQ-4C Triton. The aviation program is shown in Figure 2.3.

Figure 2.3 – Aircraft Procurement Quantities and Total Funding

	FY 2021	FY 2022
Fixed Wing:		
F/A-18E/F	24	-
F-35C (CV)	26	20
F-35B (STOVL)	10	17
P-8A	9	-
E-2D	5	5
KC-130J	5	6
E-6B	1	-
Rotary Wing:		
CH-53K	9	9
MV-22B/CMV-22B	13	8
TH-73A	36	36
VH-92A	5	-
UAV:		
MQ-4C Triton	1	-
MALE-T	-	6
Total Major Aircraft QTY	144	107
Total Aircraft Procurement (\$B)	\$ 19.5	\$ 16.5

Fixed-Wing

The F/A-18E/F Naval Strike Fighter is a twin-engine, mid-wing, multi-mission tactical aircraft. The primary mission is a strike fighter, which includes the traditional applications such as fighter escort and fleet air defense combined with the attack applications such as interdiction and close air support. The Department completed aircraft procurement in FY 2021 with a total of 678 aircraft.

Our multifaceted strategy to sustain and recapitalize the Strike Fighters is reliant on fully funding sustainment accounts, reducing strike fighter utilization, and

procurement of additional F-35B/C Lightning II aircraft. The F-35C Carrier Variant (CV) provides the Navy and Marine Corps with a multi-role stealthy strike fighter to complement the F/A-18 Hornet. The F-35B Short Takeoff and Vertical Landing (STOVL) variant is a multi-role strike fighter replacing the AV-8B Harrier for the Marine Corps.



The P-8A Poseidon's ability to perform undersea warfare to include intelligence, surveillance, and reconnaissance (ISR); long-range surface warfare; and high-altitude torpedo capability missions make it a critical force multiplier for the joint task force commander. The Department completed aircraft procurement of P-8A Poseidon in FY 2021 with a total of 128 aircraft.



The E-2D Advanced Hawkeye program is the next generation, carrier based early warning, command, and control aircraft that provides improved battle space detection, supports theater air missile defense, and offers improved operational availability. FY 2022 is the fourth year of a five-year MYP which will complete the program of record.

The KC-130J Super Hercules aircraft is designed for cargo, tanker, and troop carrier operations. The mission of the KC-130J is to provide tactical in-flight refueling and assault support transport. FY 2022 is the fourth year of a five-year MYP for the program.

The E-6B Mercury aircraft is being procured as an in-flight trainer aircraft for the E-6 program. The Navy will dedicate these in-flight trainers to the performance of required pilot training, thus alleviating some of the readiness strain on the aging operational E-6 mission aircraft. The E-6 is a manned airborne communications platform designed to provide a survivable, enduring, and reliable airborne command and control communications capability in support of the President, Secretary of Defense, and United States strategic and non-strategic forces.

Rotary-Wing



The CH-53 Sea Stallion is the DoD's only ship-board compatible heavy-lift helicopter. The Marine Corps has been operating the CH-53E Super Stallion since the early 1980s and is replacing this legacy aircraft with the upgraded and more capable CH-53K King Stallion. The new CH-53K will have heavy-lift capabilities that exceed all other DoD rotary-wing platforms.

The V-22 Osprey shifts procurement to the CMV-22B variant, which will replace the C-2A Greyhound Carrier Onboard Delivery (COD) aircraft. The MV-22B variant fills a critical capability role with the Marine Corps by incorporating the advantages of a vertical/short takeoff and landing aircraft that can rapidly self-deploy to any location in the world. FY 2022 is the fifth year of a five-year MYP awarded in FY 2018.



FY 2020 was the first year that the Department of the Navy procured the Advanced Helicopter Training System (AHTS) to replace the TH-57B/C Sea Ranger Training System. The AHTS is a family-of-systems that provides the capability to train advanced rotary-wing and intermediate tilt-rotor students for designations as Naval aviators in the Navy, Marine Corps, and Coast Guard.

The VH-92A Presidential Executive Helicopter is the replacement helicopter for the VH-3D Sea King and the VH-60N White Hawk, the aircraft currently used for the safe and timely transportation of the President, Vice President, and other distinguished officials as directed by the White House Military Office (WHMO). The first year of procurement for this aircraft was FY 2019 and the Department completed aircraft procurement in FY 2021 with a total of 11 aircraft.

Unmanned Aerial Vehicles (UAVs)

The FY 2022 budget continues procurement of unmanned platforms in support of joint force and combatant commander demands for increased ISR capability and capacity.

MQ-4C Triton, is a high-altitude, long-endurance Unmanned Aircraft System (UAS) designed to provide persistent maritime ISR of nearly all the world's high-density sea lanes, littorals, and areas of national interest. FY 2022 budget reflects the procurement pause of MQ-4C Tritons in FY 2021 and FY 2022 to allow the Integrated Functional Capability-4 (IFC4.0) design to mature, which will eliminate concurrency risk and minimize the retrofit cost.

Marine Group 5 UAS is a Medium Altitude Long Endurance-Tactical (MALE-T) UAS that supports USMC capability requirements as identified within the Marine Air/Ground Task Force Unmanned Aircraft System Expeditionary (MUX) Initial Capabilities Document (ICD). The MALE program supports a subset of capabilities identified within the MUX overall requirements roadmap. MALE is proposed to be a land-based UAS that provides direct support to the Marine Littoral Regiment (MLR) in peer-to-peer conflict. It will provide stand-off sensing and Command, Control, Communication, and Computers (C4) capabilities, while supporting numerous low-cost stand-in Marine Air-Ground Task Force (MAGTF) assets. It will enhance the MLR's domain awareness and survivability, while broadening its sea-control/sea-denial capabilities. FY 2022 provides funding to support the procurement of MQ-9A Extended Range UAS, communications relay sensors and various payloads.

WEAPONS PROCUREMENT, NAVY

Figure 2.4 shows quantities in the FY 2022 request for specific weapons programs. The FY 2022 weapons procurement budget is \$4.2 billion.

Figure 2.4 – Weapons Procurement Quantities and Total Funding

	FY 2021	FY 2022
Ship Weapons:		
TACTOM	122	60
TACTOM Recert	156	156
TACTOM Mod	156	300
TACTOM- MST	15	39
SM 6	125	125
RAM Blk II	100	100
ESSM Blk II	99	108
MK 48 HWT	105	58
MK 48 CBASS KITS	34	30
MK 54 LWT MOD 1	69	91
NSM	15	34
LCS SSMM	32	14
Aircraft Weapons:		
SIDEWINDER (AIM-9X)	294	178
AMRAAM	122	-
AARGM	87	-
AARGM - ER	16	54
JAGM	150	164
MALD-N	12	18
LRASM	43	48
JASSM	-	25
HELLFIRE (CATM)	95	120
SDB II	248	180
Total Weapons QTY	2,095	1,902
Total Weapon Procurement (\$B)	\$ 4.5	\$ 4.2

	FY 2021	FY 2022
Other Weapons:		
JDAM - GPS Tailkits	3,271	2,971
APKWS - G&C Section (rocket)	1,086	1,038

Ship Weapons

The Tactical Tomahawk (TACTOM) missile provides a premier attack capability against long-range, medium-range, and tactical targets on land and can be launched from both surface ships and submarines. The Block IV Tactical Tomahawk preserves Tomahawk's long-range precision-strike capability while significantly increasing



responsiveness and flexibility. The Department will procure 60 Block V TACTOMs, 156 recertification kits, 300 navigation and communications (NAV/COMMs) kits, and 39 Maritime Strike Tomahawk (MST) kits in FY 2022. FY 2022 is the second year of procurement for the MST kits. MST is a rapid deployment capability which includes seeker kit hardware.

The Standard Missile-6 (SM-6) is the primary air defense weapon for Aegis cruisers and destroyers. The SM-6 Block I possesses an extended range engagement capability to provide an umbrella of protection for U.S. forces and allies against the full spectrum of manned fixed and rotary-wing aircraft, unmanned aerial vehicles, and land attack and anti-ship cruise missiles in flight. The DON has focused on its efforts to integrate the kill chain consisting of the E-2D Advanced Hawkeye, the Cooperative Engagement Capability (CEC), the Aegis Combat System, and the SM-6 missile. The program procures 125 missiles in FY 2022 and is currently under a five-year MYP contract that completes in FY 2023.

The Rolling Airframe Missile (RAM), a cooperative effort with Germany, is a high firepower, low-cost, lightweight ship self-defense system designed to engage anti-ship cruise missiles and asymmetric threats. The production of Block II missiles provides increased kinematic capability against high maneuvering threats and improved radio frequency (RF) detection against low probability of intercept threats. RAM is investing in the RAM Block II Raid engineering change proposal (ECP) to provide an upgraded seeker and Missile-to-Missile Link (MML) capability to



counter emerging complex raid threats. The FY 2022 budget supports the procurement of 100 RAM Block II missiles including hardware to support fleet training requirements.

The Evolved Sea Sparrow Missile (ESSM) serves as the primary surface-to-air ship self-defense missile system. ESSM is an international cooperative effort to design, develop, test, produce, and provide in-service support to a new and improved version of the SPARROW missile (RIM-7P) with a kinematic performance to defeat current and projected threats that possess low altitude, high velocity, and maneuver characteristics beyond the engagement capabilities of the RIM-7P. ESSM Block II replaces the guidance section with a dual mode active/semi-active X-band seeker. In FY 2022, the Navy will procure 108 missiles.



The MK 48 Advanced Capability heavyweight torpedo is used solely by submarines and is employed as the primary anti-submarine warfare and anti-surface warfare weapon aboard attack, ballistic missile, and guided missile submarines. Procurement quantity decreases from 105 in FY 2021 to 58 in FY 2022. Procurements continue to support the Navy's requirement for additional warshot torpedoes available for pre-combat loadout (Pre-CLO). FY 2022 efforts will continue guidance and control and after body/tailcone modifications to the existing torpedo, optimizing the weapon for both deep and littoral waters, and adding advanced counter-countermeasure capabilities. FY 2022 is the seventh year of procurement. 30 MK-48 CBASS kits are procured in FY 2022.

The MK-54 is an anti-submarine torpedo deployed from surface ships and ASW air platforms in littoral scenarios operating in shallow water acoustic and environmental



conditions; effective in the presence of threat countermeasures and capable in deep water engagements. The MK-54 Mod 0 Lightweight Torpedo (LWT) maximizes the use of non-developmental item (NDI) technologies, incorporating the proven technologies from existing torpedo programs with state-of-the-art commercial-off-the-shelf (COTS)

processors and is a modular upgrade to LWT Inventory. MK-54 Mod 1 builds on the MK-54 Mod 0 improvements to expand the torpedo's capability in shallow water littoral environment and also improves the torpedo's counter-countermeasure capability to allow higher effectiveness in current and future threat environments. The program fully transitioned to the sole procurement of Mod 1 in FY 2021 and will procure a quantity of 91 in FY 2022.



The Naval Strike Missile (NSM), formerly the Over-the-Horizon (OTH) missile, provides the littoral combat ship/guided missile frigate (LCS/FFG) with long-range, anti-surface offensive capability against surface combatants. The NSM Weapon Systems (WS) consists of a Missile Launch System and a complement of missiles. This program procures 34 missiles in FY 2022.

The Littoral Combat Ship Surface-to-Surface Missile Module (LCS SSMM) combined with the Longbow Hellfire Missile form a segment of the Surface Warfare (SUW) mission package which increases firepower and offensive/defensive capabilities against large numbers of highly maneuverable, fast, small craft threats, giving LCS the ability to protect the sea lanes and move a force quickly through a choke point or other strategic waterway. The FY 2022 budget supports procurement of 14 LCS SSMM.

Aircraft Weapons

Aircraft weapons arm the warfighter with lethal, interoperable, and cost effective weapons systems. The AIM-9X (Sidewinder) missile is a "launch-and-leave" munition that employs passive infrared energy for acquisition and tracking of enemy aircraft. FY 2022 continues procurement of AIM-9X (178 total missiles) Block II and Block II+ missiles which incorporates specialized external materials to enhance aircraft platform survivability.





The Advanced Medium Range Air-to-Air Missile (AMRAAM) is the next generation, all weather radar-guided missile designed to counter existing air-vehicle threats having advanced electronic attack capabilities. Upgrades to the missile incorporate active radar in conjunction with an inertial reference unit and microcomputer that make the missile less dependent on the aircraft fire control system. Due to delays with

the Form Fit Function Refresh (F3R) program, procurements are delayed one year in FY 2022.

The Advanced Anti-Radiation Guided Munition (AARGM) is an upgrade to the legacy High-Speed Anti-Radiation Missiles (HARM), with a multi-mode guidance and targeting capability. AARGM-Extended Range (AARGM-ER) capabilities will provide improved AARGM operational capabilities adding extended range, increased survivability and effectiveness against complex, new and emerging threats. In FY 2021, the Department concluded procurement of AARGM and will procure the AARGM-ER in FY 2022 at a quantity of 54 missiles. FY 2022 is the second year of procurement for this capability.

The Joint Air-to-Ground Missile (JAGM) is the replacement for Hellfire missile. JAGM is an air-launched missile system, which utilizes multi-mode seeker technology providing advanced line-of-sight and beyond-line-of-sight capabilities. FY 2022 funding supports the second JAGM full-rate production contract, purchasing 164 all up rounds (AURs).

Drones and Decoys supports the air-launched electronic warfare (EW) systems capability through the integration of a Navy variant of the Miniature Air Launched Decoy (MALD). FY 2022 funding is the second year of procurement of 18 MALD-Ns, containers, cables, and associated support. Initial Operational Capability (IOC) delivery is in FY 2022.

The Long-Range Anti-Ship Missile (LRASM) is the next generation anti-surface warfare missile that is designed to provide precise, discriminating, and lethal long-range air-launched capabilities. LRASM is a semi-autonomous anti-ship missile, which reduces dependence on external platforms and GPS navigation in order to

penetrate sophisticated enemy air defense systems. FY 2022 is the sixth year of procurement, during which the DON procures 48 missiles.

The Joint Air-to-Surface Standoff Missile Extended Range (JASSM-ER)/AGM-158B is procured by the DON to enhance long-range strike and offensive anti-surface warfare (OASuW) capability. In FY 2022 the JASSM program will award the 20th production lot in which the U.S. Navy, along with the U.S. Air Force, will procure 25 assets for the first time.

The AGM-114 Hellfire is a family of laser-guided missiles employed against point and moving targets by both rotary and fixed-wing aircraft. The FY 2022 request procures 120 Hellfire Captive Air Training Missiles (CATMs).

Small Diameter Bomb Increment II (SDBII) is an Air Force led, ACAT I, joint program which provides the warfighter a capability to attack mobile targets in all weather conditions from stand-off range. SDBII addresses the requirement to attack mobile targets; achieve multiple kills per pass; carry multiple ordnance; provide all weather operations; achieve near-precision munitions capability; provide capability against fixed targets; reduce the munitions footprint; increase weapons effectiveness; minimize potential for collateral damage; reduce susceptibility of munitions to countermeasures; and provide a migration path to net centric operations capability. FY 2022 is the fifth year of procurement for the DON with procurement of 180 bombs.

PROCUREMENT, MARINE CORPS

The FY 2022 budget reflects the Marine Corps investment in modernization and innovation in support of the *Commandant's Planning Guidance* (CPG) to build the future force (as detailed in *Force Design 2030*), which is the Commandant of the Marine Corps (CMC) top priority. Future Force Design investments support the CMC's vision of the Marine Corps as a trained and equipped Naval expeditionary force in readiness, prepared to operate inside actively contested maritime spaces in support of fleet operations. The FY 2022 Procurement, Marine Corps budget is \$3.0 billion.

Major Procurement Programs

Ground Based Anti-Ship Missile (GBASM)/Remotely Operated Ground Unit Expeditionary (ROGUE) Fires Vehicle

The Ground Based Anti-Ship Missile (GBASM) provides long and short-term solutions for an anti-ship missile to be integrated within a Marine Corps Artillery Battalion in support of Marine Corps Expeditionary Advanced Base Operations (EABO) concept. GBASM will prototype a Marine Corps system using other service-developed missiles to provide a ground based antiaccess/area denial, anti-ship capability. The prototyping effort will include the development, design, build, and testing of a Remotely Operated Ground Unit Expeditionary (ROGUE) Fires vehicle. ROGUE - Fires is an unmanned ground vehicle based on a JLTV chassis, and a launcher system capable of mounting a wide range of missile systems. The FY 2022 budget requests \$47.9 million to begin the procurement of the initial capacity Naval Strike Missiles (NSM) in support of the GBASM/ROGUE capability for the Marine Littoral Regiment (MLR) activation.



High Mobility Artillery Rocket System (HIMARS)

The High Mobility Artillery Rocket System (HIMARS) is a C-130 transportable, wheeled, indirect fire, rocket/missile launcher capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM). The HIMARS provides high volumes of lethal fire under all weather conditions throughout all phases of combat operations ashore, to include irregular warfare, distributed operations, and anti-ship missions. FY 2022 funding procures launchers, carriers, and equipment to support the continued expansion of USMC launcher capacity, and the procurement of Reduced Range Practice Rockets (RRPR) for tactical training, classroom training, and handling exercises.



Ground/Air Task-Oriented Radar (G/ATOR)

Ground/Air Task-Oriented Radar (G/ATOR) is an expeditionary, short/medium range multi-role, three-dimensional radar designed to detect cruise missiles, rockets, mortars, and artillery. G/ATOR will support air defense, air surveillance, and counter-battery/target acquisition. Additionally, the final evolution will also support the Marine Corps' air traffic control mission. FY 2022 funding will procure eight G/ATOR systems as well as the initiation of radar decoy procurement capabilities.



Radio Systems

The Marine Corps Radio Systems portfolio includes major investments in Tactical Communications Modernization (TCM) and Terrestrial Wideband Transmission Systems (TWTS) requirements for the operational forces. TCM includes the procurement of Multi-Channel Hand Held (MCHH) radios and MCHH vehicle integration kits to replace legacy single-channel radios and meet National Security Agency (NSA) Communications Security (COMSEC) mandates. TWTS data transmission investments include the procurement of Next Generation Troposcatter (NGT) Systems and Line-of-sight Radio Systems (LRS) in order to provide a significantly higher bandwidth communication pathway over longer distances with both shore-to-shore and shore-to-ship connectivity and modernize the Marine Corps' ability to connect networks in contested and satellite-denied environments. The FY 2022 budget requests funding to procure TCM MCHH radios and vehicle kits, the TWTS Next Generation



Troposcatter, and the necessary program and fielding support to transition these new technologies to the Fleet Marine Force.

Amphibious Combat Vehicle (ACV)

The Amphibious Combat Vehicle (ACV) will replace the legacy Assault Amphibious Vehicle (AAV) in the Assault Amphibious (AA) battalions within the



Marine Divisions. ACV-equipped AA companies will provide protected mobility and general support lift to elements of Marine Infantry battalions. The ACV is an advanced generation, eight-wheeled armored personnel carrier, capable of mitigating capability gaps by providing improved lethality against

dismounted enemy troops through more effective land and water tactical mobility, and increased force protection and survivability from blasts, fragmentation, and kinetic energy threats. The ACV program is structured to be executed in multiple increments. The first increment delivers combat-ready Marines from ship-to-shore connector craft in order to mass forces at littoral penetration points and continue to maneuver onward to inland objectives. FY 2022 funding procures the second full-rate production lot of 92 vehicles (20 more than FY 2021), plus procurement of related items such as production support, systems engineering/program management, engineering change orders, government furnished equipment, and integrated logistics support.

Joint Light Tactical Vehicle (JLTV)

The Joint Light Tactical Vehicle (JLTV) Family of Vehicles is a joint Army and Marine Corps program. The program objectives are to restore the mobility and payload once provided by the original High-Mobility Multi-Wheeled Vehicle (HMMWV) to the future light tactical vehicle fleet



while providing increased modular protection within the weight constraints of

the expeditionary force. JLTV configurations will be derived from two vehicle variants, the Combat Tactical Vehicle and the Combat Support Vehicle. The FY 2022 request procures 613 vehicles (139 less than FY 2021) and associated kits. The kits will support the baseline vehicle by providing the warfighter the ability to augment the vehicle's configuration in order to respond to environmental conditions or threat situations. Kit procurement provides up to 75 individual kit options.

PROCUREMENT OF AMMUNITION, NAVY AND MARINE CORPS

The Procurement of Ammunition, Navy and Marine Corps (PANMC) appropriation buys vital munitions and related weaponry for the warfighter. PANMC is paramount for force capability and success in meeting future contingencies. It includes major fleet requirements such as general purpose bombs like the 2,000-pound laser-guided "bunker buster" Penetrator bomb. Airborne rockets purchases include the Advanced Precision Kill Weapon System (APKWS), which provides Marine Corps ground forces greater precision and effectiveness while increasing firing standoff range. Pyrotechnics and demolition purchases reinforce explosive ordnance disposal, the world's premier combat force for countering explosive hazards to include improvised explosive devices and underwater mines.

The ammunition portfolio comprises a comprehensive array of capabilities. Five-inch MK 45 guns on cruiser and destroyer combatant ships are used against air, surface, and shore targets. Precision-guided artillery support the Marine Corps and Naval Special Warfare with accurate, first round fire-for-effect capability. Small arms munitions are essential for the Navy Sea, Air, and Land teams, coastal riverine, and security forces. In FY 2022, PANMC's budget of \$988 million will fund the procurement of these and other vital ammunitions in support of the warfighter in virtually every aspect of air, land, and sea combat.



OTHER PROCUREMENT, NAVY

The procurement, production, and modernization of equipment not provided for in the previous appropriations, which generally support multiple platforms, is financed in the Other Procurement, Navy (OPN) appropriation. This equipment ranges from electronic sensors to training equipment to spare parts, and is integral to improving the fleet and shore establishment. The FY 2022 OPN budget is \$10.9 billion.

Industrial Plant Equipment Program

The Department's Industrial Plant Equipment (IPE) program supports the capitalized personal property procurements for the naval shipyards (NSY) and fleet I-level maintenance activities. These capital

improvements are integral to the nuclear enterprise. The FY 2022 OPN budget supports the replacement of obsolete NSY industrial plant equipment with new and efficiency-

enabling equipment. In addition, this program supports the procurement of capital equipment for the shipyards which is required to support new mission requirements. This budget funds Ford class introduction at Norfolk NSY, Columbia class propulsion manufacturing equipment at the Naval Foundry and Propulsion Center, concurrent Virginia class maintenance availabilities at Portsmouth and Pearl Harbor NSYs as well as the recapitalization of significantly aged IPE, weight handling equipment, and nuclear support equipment infrastructure.



Ship Programs

The FY 2022 OPN budget continues to support surface combatant modernization programs across the fleet in order to keep pace with emerging threats, provide capabilities to maneuver in the electromagnetic spectrum, and maximize surface ship service life. The DDG modernization program funds four total availabilities – one hull, mechanical & electrical (HM&E) stand alone and three dual HM&E and combat systems modernizations. The program also funds procurement for three HM&E availabilities and three combat system availabilities in FY 2022 for installation in FY

2024. The Consolidated Afloat Networks and Enterprise Services (CANES) program will fund the procurement of 13 afloat production units, 28 afloat technical insertion units, and all integration and associated costs for pre-installation design. Additionally, CANES FY 2022 funding will install 20 afloat production units, and 13 afloat technical insertion units. The Shipboard Information Warfare (IW) program will fund seven Ship's Signal Exploitation Equipment (SSEE) systems, ten Graywing systems, 12 SSEE Next Generation Chassis Engineering Change Proposal (ECP) systems, ten Spectral Capability Drop ECP systems, nine SSEE Anti-Access Area Denial (A2AD) ECP systems, 12 SSEE Inc F Backfit Kits, and ten Graywing ECP systems. Additionally, Shipboard IW installations include nine SSEE systems, ten Graywing systems, and 27 SSEE Next Generation Chassis ECP systems, nine Spectral Capability Drop ECP systems, 30 A2AD ECP systems, and 16 Graywing ECP systems. Shipboard electronic warfare procurements include two Surface Electronic Warfare Improvement Program (SEWIP) Block 2, and three SEWIP Block 3 upgrades to the AN/SLQ-32.

Ship Maintenance and Repair

The FY 2020 Consolidated Appropriations Act H.R. 1158 appropriated funding in OPN line 23X, ship maintenance, repair and modernization, for a pilot program to fund \$1.0 billion in private contracted ship maintenance planned for the Pacific Fleet in FY 2020. The funding in OPN, a three-year appropriation, replaces funding normally in OMN, a one-year appropriation. This change provides two additional years to obligate funding, helping shipyards to manage the complexities of funding ship maintenance more effectively. The pilot program in FY 2020 funded 17 Pacific Fleet private contracted availabilities in OPN. The FY 2021 enacted of \$1.2 billion in OPN further improved our ability to take advantage of the potential benefits of using OPN for ship maintenance. The pilot program in FY 2021 funds 20 Pacific Fleet private contracted availabilities in OPN. For FY 2022, the pilot program is expanded to include Fleet Forces Command and Naval Sea Systems Command. A total of 22 private contracted maintenance availabilities are funded with \$1.3 billion in OPN in FY 2022. Ship maintenance is a high priority for the Navy, and the OPN trial provides the Navy with an opportunity to establish and capitalize on best practices and evaluate how OPN can benefit the future of Navy readiness.



Prioritize Investment in Information Warfare



The area of information warfare is multi-domain, crosses multiple appropriations, and influences outcomes across the spectrum of competition from day-to-day operations through lethal combat. The DON delivers a range of programs from enterprise networks and cybersecurity to satellite communications that link together multi-domain sensors, electromagnetic maneuver and fires capabilities in a tactical grid to

improve the effectiveness of our weapons and defeat enemy C4ISR and targeting systems.

The Department is growing investments that increase lethality of legacy platforms through both system modernization and the addition of new capabilities. These investments include supporting Project Overmatch efforts to seamlessly network sensors, platforms (manned and unmanned) and weapons for decision advantage. The DON will also accelerate EW capabilities to counter anti-ship missiles, advancing counter C4ISR capabilities and electromagnetic spectrum operations, and increasing cyber operations and mission forces. Similarly, the Marine Corps continues to grow and mature cyber capabilities through Marine Forces Cyber Command with an expansion of cyber mission forces teams who support operations across the globe. Enterprise network modernization will increase cybersecurity and teleworking as a DON improvement versus Navy or Marine Corps effort. Major information warfare program funding is reflected in Figure 2.5.

Figure 2.5 – Funding for Major Information Warfare Programs

<i>(Dollars in Millions)</i>	FY 2021	FY 2022
Assured Command & Control:		
Satellite Communications Systems	560	556
Enterprise Networks	958	1,197
Command & Control Systems	534	582
Maritime Operation Centers	217	242
Battlespace Awareness:		
ISR Sensors/Processor Development	320	200
Resilient Precision Navi. & Timing Sys.	218	182
Meteorology & Oceanography	206	164
Integrated Fires:		
Electronic Warfare Systems	487	567
Counter C4ISR Systems	306	363
Tactical Data Link Systems	185	179
Cyber:		
Cybersecurity	831	839
Cyber Operations	220	242
Cyber Mission Forces	492	509
MARFORCYBER	81	49
Total	5,615	5,871

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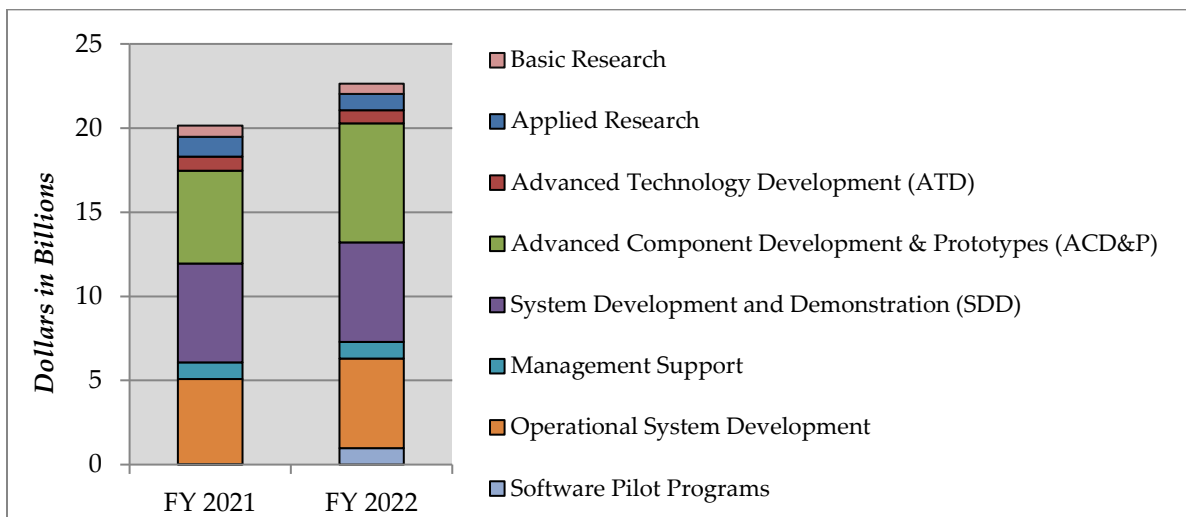
CHAPTER 2: DEFEND THE NATION

SECTION III: DEVELOPMENT

RESEARCH AND DEVELOPMENT SUPPORT

The DON’s Research, Development, Test and Evaluation (RDT&E,N) program supports DON missions by giving the Department asymmetric and technological advantages against adversaries in all environments and spectrums. A healthy development budget is foundational to our future force. Our FY 2022 request provides continued investment toward innovation to deliver more future capabilities in the near and long-term. Science and technology (S&T) research is vital to provide for future technologies that support innovative capabilities in shipbuilding, aviation, weapons, and expeditionary equipment. Beyond the S&T phase, research and development (R&D) is fundamental to major acquisition programs such as the Columbia class program, which recapitalizes our strategic nuclear deterrent. Other major areas of R&D effort include investments in future aircraft carrier, surface, submarine, and logistics vessels; unmanned systems; electromagnetic warfare; and cyberspace warfare. The FY 2022 RDT&E,N budget supports the Marine Corps Commandant’s direction to implement a program of iterative concept refinement, wargaming, analysis and simulation, and experimentation with a strong focus on the new Marine Littoral Regiment (MLR) concept. Marine Corps ground equipment RDT&E,N programs are focused on developing the force of the future to counter near peer pacing threats. Figure 3.1 shows RDT&E,N funding by budget activity.

Figure 3.1 –RDT&E Funding



Science and Technology

The FY 2022 budget requests \$2.4 billion for the Navy's S&T programs. The FY 2022 S&T budget request supports the Naval Research and Development Framework that supports multiple Navy and Marine Corps research and development efforts.

Ship Research and Development

Columbia Class Submarine

The budget requests \$356.4 million in FY 2022 for the Columbia class submarine program. FY 2022 R&D efforts continue to focus on propulsion plant and nuclear technology development, common missile compartment design and prototyping, and platform development and vendor qualification for technologies such as the propulsor, strategic weapons system, and maneuvering and ship control.

Ford Class Aircraft Carrier

The budget requests \$166.0 million in FY 2022 to address unique technologies for the Ford class carriers. In FY 2022, research and development efforts continue for the integrated Digital Shipbuilding (iDS) transformation in support of the two-carrier buy, which is a critical affordability initiative to upgrade the digital data environment. Other FY 2022 efforts include continued testing to support the start of the first phase of operational testing and completion of the Electromagnetic Aircraft Launch System (EMALS) depot planning and logistics development.

Virginia Class Submarine

Virginia class submarine research and development efforts focus on development of the Tactical Submarine Evolution Plan (TSEP) which encompasses integration of numerous weapons systems, overall ship cost reduction efforts, operational evaluation testing, and development of sonar, combat control, electronic support systems. The FY 2022 budget includes \$495.6 million to continue efforts to develop future capabilities encompassed in the TSEP, improve electronic systems and subsystems, and reduce total ownership costs for Block V and future submarines.

Future Attack Submarine (SSN(X))

In FY 2022, the Navy will invest \$98.0 million for the design and development efforts (including propulsion efforts) for the future attack submarine (SSN(X)). The SSN(X) class submarine is designed for greater transit speed under increased stealth conditions in all ocean environments, and it can carry a larger inventory of weapons and more diverse payloads than the Virginia class. FY 2022 will focus on completing

an initial capabilities document (ICD), starting an analysis of alternatives (AoA), and continuing technology development.

Constellation Class Guided Missile Frigate (FFG)

The budget requests \$109.5 million in FY 2022 to continue Aegis Weapon System (AWS) design and development (formally Frigate Weapon System), combat system and C4I integration, and test and evaluation. The Navy desires to maximize the lethality and survivability of this ship in surface warfare, air warfare through a local area defense capability, and anti-submarine warfare while keeping the ship an effective and affordable part of distributed maritime operations.

Next-Generation Large Surface Combatant (DDG(X))

The budget requests \$121.8 million to continue development of Next-Generation Large Surface Combatant (DDG(X)), formerly Future Large Surface Combatant. FY 2022 efforts include preliminary design, design analysis, test planning, land based testing, and developing detailed design and construction requirements for procurement of the lead ship. DDG(X) will follow the DDG 51 class and provide the future capabilities as a key platform in the Navy's *30-Year Shipbuilding Plan* by integrating non-developmental systems into a new hull design that incorporates platform flexibility and space, weight, power and cooling (SWAP-C) improvements to meet future combat force system requirements.

Next Generation Logistics Ship (NGLS)

In FY 2022, the Navy will invest \$27.8 million for research and development of the Next Generation Logistics Ship (NGLS). The NGLS will enable refueling, rearming, and resupply of Naval assets - afloat and ashore - in support of distributed maritime operations, littoral operations in a contested environment, and expeditionary advanced base operations. The NGLS is envisioned to be smaller than existing ships in the combat logistics force, and will operate near contested environments, sustaining afloat (surface action group) and ashore (expeditionary advanced base) requirements.

Unmanned Surface Vehicles/Vessels (USV)

The FY 2022 budget requests \$375.6 million to accelerate the unmanned surface vehicle/vessel (USV) portion of the Navy's Future Surface Combatant (FSC) strategy. This is an increase in funding from FY 2021 to FY 2022 includes \$60.0 million for medium and \$144.8 million for large USVs. The request also includes \$170.8 million for USV Enabling Capabilities to accelerate future technologies and support steady growth of the USV Family of Systems.

Unmanned Undersea Vehicles (UUV)

In FY 2022, the Navy will invest \$290.6 million toward the research and development of unmanned undersea vehicles (UUV). The funding includes \$58.5 million for the development, fabrication, and testing of the ORCA Extra Large Unmanned Undersea Vehicles and \$88.1 million to support the advancement of Large Diameter Unmanned Undersea Vehicles. The FY 2022 funding request also supports small and medium unmanned undersea vehicles and MK-18 UUVs, as well as the associated payloads.

Aviation Research and Development



The F-35 Joint Strike Fighter (JSF) Program will develop and field an affordable, highly common family of next generation strike aircraft for the United States Navy, United States Air Force, United States Marine Corps and international partner countries. The aircraft has three variants: the F-35A Conventional Takeoff and Landing variant; the F-35B Short Take Off and Vertical Landing variant; and the F-35C

Aircraft Carrier suitable variant. The Initial Operational Capability (IOC) date was in FY 2015 for the F-35B STOVL and in FY 2019 for the F-35C variant. FY 2022 continues development of Block 4 capabilities to support initial fleet availability of Block 4 upgrades.

The Super Stallion CH-53E, the only heavy-lift helicopter specifically configured to support Marine Corps missions, entered the fleet in 1980. Research and development for the CH-53K is funded at \$256.9M and supports continued air vehicle development and improved integrated logistics support. This will primarily consist of continued software develop and the correction of deficiencies discovered during Initial Operational Test and Evaluation (IOT&E) resulting in the establishment of the final deployable configuration.



The VH-92A Presidential Helicopter research and development is funded at \$45.9 million and continues developing product improvements for incremental incorporation to the VH-92A capability baseline to include enhancements to Web-Based Line of Sight (WBLOS), cockpit upgrades, government furnished equipment, shipboard interoperability, software upgrades and commences developing product improvements for distributed network communications, and vehicle performance enhancements. The Engineering and Manufacturing Development (EMD) phase continues with a projected completion of September 2021. IOC is scheduled for the fourth quarter of FY 2021.



The Next Generation Jammer (NGJ) is the next step in the evolution of Airborne Electronic Attack (AEA) and is needed to meet current and emerging electronic warfare gaps, ensure kill chain wholeness against growing threat capabilities and capacity, and to keep pace with threat weapons systems advances and expansion of the AEA mission area. Research and Development funding for Next Generation Jammer Mid-Band (NGJ-MB) is \$243.9 million and will focus on instrumented test pod deliveries and expansion of the test flight envelope. IOC is scheduled for FY 2023. Initial System Demonstration Test Article (SDTA) pods are being delivered for final developmental test efforts, tactics development, operational test, and IOC. Research and development funding for the Next Generation Jammer Low-Band (NGJ-LB) is \$248.1 million and is focused on pod design and development to support interim flight clearance. NGJ-LB is a critical AEA capability to augment, and ultimately replace the legacy ALQ-99 Tactical Jamming System on the EA-18G Growler in the low frequency bands not covered by NGJ-MB. NGJ-Low Band (NGJ-LB) successfully completed Milestone B on 8 December 2020, designating NGJ-LB as an ACAT-1B Major Defense Acquisition Program.

F/A-18E/F Advanced Infrared Search and Track (IRST) is a passive long-wave infrared (IR) sensor which provides an alternate fire control system in a high electronic attack/radio detection and ranging denied environment. Research and development funding is \$48.8 million and supports Block II IRST upgrades to the IR receiver and processor to provide full Capabilities Development Document capability and enhanced warfighting capability through an improved engagement timeline,

improved situational awareness, longer range passive detection and tracking, and a larger field of regard with specification performance. FY 2022 funding supports both Block I and Block II efforts. The IRST Block II Engineering Change Proposal (ECP) achieved Milestone C on 4 December 2018 and will achieve IOC in the fourth quarter of FY 2021.

Unmanned Aerial Systems

The Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS) program is funded to \$268.9 million. The program was restructured with near-term focus on the new Unmanned Carrier Aviation (UCA)/MQ-25 Stingray program and accelerated fielding timelines. The MQ-25 Stingray program rapidly develops an unmanned capability to embark on CVNs as part of the Carrier Air Wing (CVW) to conduct aerial refueling as a primary mission and provide some intelligence, surveillance, and reconnaissance (ISR) capability as a secondary mission. MQ-25 Stingray extends CVW mission effectiveness range, partially mitigates the current Carrier Strike Group (CSG) organic ISR shortfall, and fills the future CVW-tanker gap, mitigating strike fighter shortfall and preserving F/A-18E/F fatigue life. As the first carrier-based, group 5 Unmanned Aircraft System (UAS), MQ-25 Stingray will pioneer the integration of manned and unmanned operations, demonstrate mature complex sea-based C4I UAS technologies, and pave the way for future multifaceted multi-mission UAS's to pace emergent threats. In FY 2024 the program will conduct IOT&E. IOC is scheduled for FY 2025.



Weapons Research and Development

Conventional Prompt Strike

In FY 2022, the Navy will invest \$1,373.5 million for research and development for Conventional Prompt Strike (CPS). The CPS program develops warfighting capability to enable precise and timely strike capability in contested environments across surface and sub-surface platforms. The Navy's CPS program will design a missile comprised of a Common Hypersonic Glide Body (C-HGB) and a 34.5 inch two-

stage booster. The program is pursuing an IOC of FY 2028 in which the missile will be fielded on a Virginia class submarine with Virginia Payload Module. Efforts in FY 2022 include continued development of the weapon system and flight subsystem, platform integration, and advanced research and development to support future spiral development capabilities such as enhanced warhead, advanced communication, alternative navigation, and terminal sensor technology. Funding also supports the expansion of industrial base capacity for the recent addition of CPS capability on DDG-1000 Zumwalt class destroyers.

Navy Laser Family of Systems (NLFoS)

The FY 2022 budget requests \$51.7 million for the Navy Laser Family of Systems (NLFoS), which is designated an accelerated acquisition initiative to provide near-term, ship-based laser weapon capabilities. The NLFoS efforts form the foundation of an incremental strategy for increased laser weapon capability as it is matured. NLFoS includes the Surface Navy Laser Weapon System (SNLWS) and the Solid State Laser Technology Maturation (SSL-TM). SNLWS addresses anti-surface warfare and counter-intelligence, surveillance and reconnaissance (C-ISR) gaps with the ability to dazzle and destroy UASs and defeat fast inshore attack craft (FIAC). SNLWS includes the development of an advanced prototype laser weapon system in the 60 kW or higher class. SSL-TM will develop an advanced 150kW High Energy Laser (HEL) weapon demonstrator that will support future laser development with system capability demonstrations on LPD 27, USS Portland.

Ground Equipment Research and Development

Ground Based Anti-Ship Missile (GBASM)/Remotely Operated Ground Unit Expeditionary (ROGUE) Fires Vehicle

The Ground Based Anti-Ship Missile (GBASM) provides long and short-term solutions for an anti-ship missile to be integrated within a USMC Artillery Battalion in support of Marine Corps Expeditionary Advanced Base Operations. GBASM will prototype a Marine Corps system using other service-developed missiles to provide a ground based anti-access/area denial, anti-ship capability. The prototyping effort will include the development, design, build, and testing of a Remotely Operated Ground Unit Expeditionary (ROGUE) Fires vehicle. ROGUE- Fires is an unmanned ground vehicle based on a Joint Light Tactical Vehicle (JLTV) chassis, and a launcher system capable of mounting a wide range of missile systems for dynamic force employment. The FY 2022 budget requests \$102.7 million to complete Weapon Control System (WCS) software design,

development of platoon level mission planning software, the procurement of various test missiles and pods for ballistic test events, and transportability tests for CH-53, C-130, L-class ships, and ship-to-shore connectors.

Ground Based Air Defense Future Weapon System/Counter-Unmanned Aerial System (GBAD/C-UAS)

The Ground Based Air Defense Future Weapon System/Counter-Unmanned Aerial System (GBAD/C-UAS) supports the short-range air defense mission to include the sustainment and upgrade of legacy systems as well as a GBAD Future Weapons System (GBAD-FWS). It consists of multiple kinetic and non-kinetic capability to defeat the full spectrum of low-altitude, low-observable, and low-radar cross-section Air threats, to include C-UAS. The FY 2022 budget requests \$65.4 million to complete the design phase of the Medium-Range Intercept Capability (MRIC), developed to defend both fixed and semi-fixed assets against cruise missiles, rockets, artillery, and mortar threats. This also initiates hardware and software systems development to include the procurement of missiles, canisters, and a launcher to support early operational testing.



Ground/Air Task-Oriented Radar (G/ATOR)

Ground/Air Task-Oriented Radar (G/ATOR) is a multi-role, ground-based, expeditionary radar replacing five legacy radar systems for the Marine Corps. G/ATOR provides mobile, multi-functional, three-dimensional surveillance of air breathing targets, detection of cruise missiles and unmanned aerial systems (UAS), and the cueing of air defense weapons. It is highly deployable and designed to directly support Expeditionary Advanced Base Operations (EABO). The FY 2022 budget requests \$21.4 million for software capability improvements including program/technology protection and radar survivability which includes advanced radar emplacement/displacement efforts that are designed to improve radar survivability in a peer/near-peer competitor environment.

Amphibious Combat Vehicle (ACV)

The Amphibious Combat Vehicle (ACV) is an armored personnel carrier balanced in performance, protection, and payload for employment with the Ground Combat Element across the range of military operations to include a swim capability. The program is structured to be executed in multiple product development increments, which currently includes the ACV



Command and Control (ACV- C), ACV Tactical Recovery (ACV-R), and lethal ACV 30-mm (ACV-30) mission role variants (MRVs). The FY 2022 budget requests \$80.7 million to streamline the design of the ACV-30 combat variant Remote Weapons Station (RWS) in order to meet weight and structural requirements, the order of three (3) ACV-30 Production Representative Test Vehicles (PRTV) to initiate test and evaluation efforts, and the initiation of ACV-R design and development.

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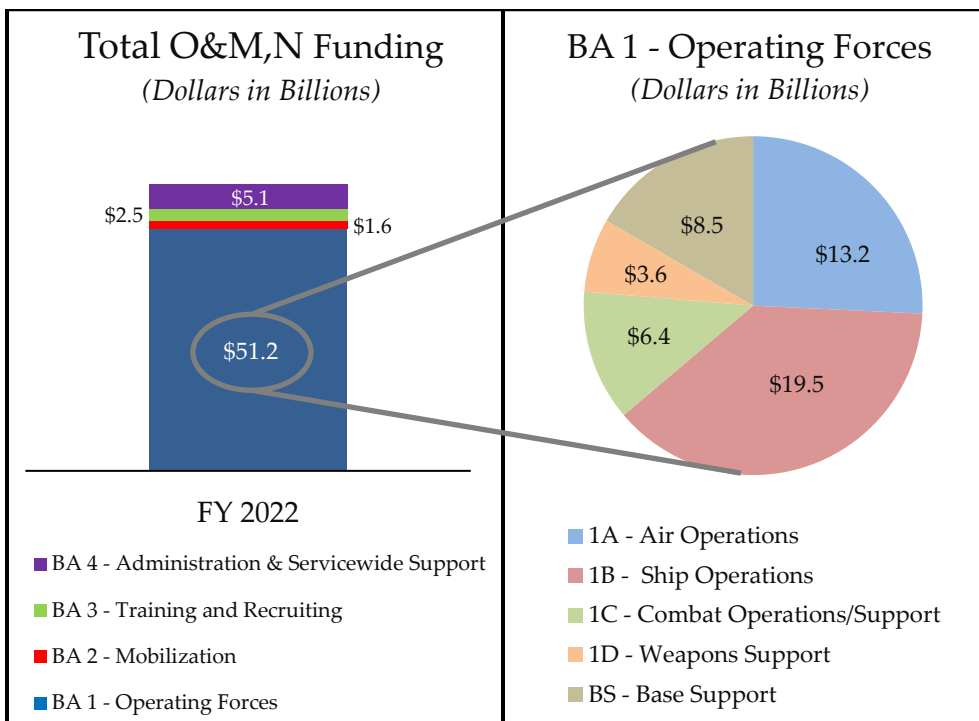
CHAPTER 2: DEFEND THE NATION

SECTION IV: READINESS

NAVY OVERVIEW

Navy and Marine Corps forces remain deeply engaged, at a high operational tempo providing National Command Authority immediate options, assuring allies and deterring our adversaries. The FY 2022 budget builds on the effort from the FY 2021 budget and incorporates new administration priorities, focused on improving readiness in Navy major readiness and enabling accounts that support training and deploying our forces. This budget request supports requirements for our carrier strike groups (CSGs), amphibious ready groups (ARGs), and Navy and Marine aviation units to train and respond to persistent and emerging threats. The Navy deploys full-spectrum-ready forces to further security objectives in support of U.S. interests. The Navy and Marine Corps forward-postured, sea-based forces provide immediate response options and assure our allies of our commitment. Figure 4.1 displays the active Navy's operation and maintenance funding in FY 2022, of which the majority of funds are in the operating forces.

Figure 4.1 – FY 2022 Active Navy O&M Funding



SHIP OPERATIONS

Ship operations is the Navy's core capability. The budget provides for a battle force of 296 ships at the end of FY 2022, as shown in Figure 4.2. This level of operational funding supports 11 aircraft carriers and 9 large deck amphibious ships that serve as the foundation upon which our strike groups and amphibious readiness groups are based. FY 2022 battle force deliveries include: three nuclear attack submarines (SSN), three guided missile destroyers (DDG), one Zumwalt destroyer (DDG), five littoral combat ships (LCS), one amphibious transport dock (LPD), one fleet replenishment oiler (T-AO), one expeditionary fast transport (T-EPF), one expeditionary staging base (T-ESB), and one first in class ocean tug (T-ATS). FY 2022 retirements include: four LCS, two SSN, seven cruisers (CG), one dock landing ship (LSD), and an ocean tug (T-ATF).

Figure 4.2 – DON Battle Force Ship Inventory

Category	Ship Type	FY 2020	FY 2021	FY 2022
Aircraft Carrier	CVN	11	11	11
Aircraft Carrier Total		11	11	11
Ticonderoga Class Cruiser	CG	22	22	15
Guided Missile Destroyers	DDG (51)	68	69	72
Zumwalt-class Destroyers	DDG (1000)	1	1	2
Littoral Combat Ship	LCS	22	22	23
Mine Countermeasures Ships	MCM	8	8	8
Surface Combatant Total		121	122	120
Amphibious Warfare Assault Ships	LHA/LHD	10	9	9
Amphibious Transport Docks	LPD	11	11	12
Dock Landing Ships	LSD	12	11	10
Amphibious Ships Total		33	31	31
Nuclear Attack Submarines	SSN	50	50	51
Fleet Ballistic Missile Sub	SSBN	14	14	14
Guided Missile (SSGN) Subs	SSGN	4	4	4
Submarine Total		68	68	69
Dry-Cargo Ammunition Ships	T-AKE	12	12	12
Fleet Replenishment Oilers	T-AO	15	15	16
Fast Combat Support Ships	T-AOE	2	2	2
Combat Logistics Ships Total		29	29	30
Submarine Tenders	AS	2	2	2
High-Speed Transport	T-HST	1	1	1
Amphibious Command Ship	LCC	2	2	2
Ocean Surveillance Ship	T-AGOS	5	5	5
Prepo Dry-Cargo Ammunition Ships	T-AKE MPS	2	2	2
Salvage Ships	T-ARS	2	2	2
Powhatan Class Ocean Tugs	T-ATF	3	2	1
Expeditionary Fast Transport	T-EPF	12	12	13
Expeditionary Mobile Base	T-ESB	3	3	4
Expeditionary Transfer Dock	T-ESD	2	2	2
Navajo Class Ocean Tugs	T-ATS	0	0	1
Support Ships Total		34	33	35
Total Battle Force Ships		296	294	296

Values represent the ending actual or projected inventory for that FY

Active Ship OPTEMPO

The FY 2022 budget request supports the Optimized Fleet Response Plan (OFRP), enabling ships to surge and reconstitute by maintaining a continuous flow from maintenance after deployment, through basic phase training back to deployable ready assets. This is achieved through a goal of seven-month



deployments. This concept enables the Department to provide multiple CSGs to meet threats and deliver decisive military force. The Navy will support these goals and respond to global challenges by planning for 58 underway days per quarter for the active operational tempo (OPTEMPO) of our deployed forces and 24 underway days per quarter for non-deployed forces. This provides funding and resources for all aspects of ship operations required to continuously deploy combat ready warships and supporting forces in support of national objectives.

Mobilization



The Navy's mobilization forces, displayed in Figure 4.3, provide transportation capability that enables rapid response to contingencies worldwide. The prepositioning ship squadrons are forward deployed in key ocean areas to provide the initial military equipment and supplies for operation. Most operate in full operating status (FOS) with a few operating in reduced operating status (ROS-5). The number of days indicates the time from ship activation until the ship is available for tasking. (ROS-5) indicates it will take five days to make the ship ready to sail, fully crewed and operational.

The prepositioned response is followed by the surge ships, which are maintained in ROS-5 in CONUS. The surge ship inventory includes new used vessel purchases and decommissions as the fleet is modernized.

Figure 4.4 reflects the hospital ships and the capacity measured by the number of operating rooms for both the USNS MERCY (T-AH 19) and USNS COMFORT (T-AH 20).

Figure 4.3 – Strategic Sealift

	FY 2020	FY 2021	FY 2022
Prepositioning Ships:			
Maritime Prepo Ships (QTY)	14	14	14
Prepo Capacity (millions of square feet)	2.8	2.8	2.8
Surge Ships:			
Large Medium-Speed RORO Ships (QTY)	10	10	10
Container/RORO Ships (QTY)	5	5	3
Ready Reserve Force Ships (QTY)	46	46	43
New Used Sealift Vessels (QTY)	-	2	5
Surge Capacity (millions of square feet)	10.6	10.9	11.2
Total Ships (QTY)	75	77	75
Total Capacity (millions of square feet)	13.4	13.7	14.0

Figure 4.4 – Hospital Ships

	FY 2020	FY 2021	FY 2022
Hospital Ships (QTY)	2	2	2
Hospital Ship Capacity	24	24	24

Ship Maintenance

The Department's depot and intermediate-level ship maintenance program is mission funded in Operations and Maintenance, Navy (OMN) with a continuing pilot program in Other Procurement, Navy (OPN). It provides funding for repairs, overhauls, and refueling of submarines, aircraft carriers, and surface ships at the Navy's four public shipyards, regional maintenance centers, intermediate maintenance facilities, and private shipyards via contracts. This account increased by \$0.5 billion from the FY 2021 enacted position. In addition to continued support for ongoing maintenance availabilities, the FY 2022 budget continues to invest in growing the productivity of the naval shipyard (NSY) workforce of 37,013 FTEs. Ship maintenance improvements include better contracting strategies, increasing dry dock capacity, optimizing facility and pier layout, level load port workloads, and more accurate availability duration planning. These efforts will provide industry with a stable and predictable demand signal to encourage maintenance capacity growth to match our growing fleet. The Navy funded \$1.3 billion in OPN in FY 2022 private contracted ship maintenance for both fleet commands, consistent with FY 2021 appropriations that included \$1.2 billion for Pacific Fleet only. This investment in OPN is a continuation of the Navy's FY 2020 pilot program, and it further expands it to incorporate Fleet Forces Command, allowing flexibility to address requirements in the fiscal year without unproductive time constraints and to use ship maintenance resources efficiently through completion of the maintenance availabilities.



Figure 4.5 – Department of the Navy Ship Maintenance

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Active Forces			
Ship Maintenance BA-1, 1B4B	10,043	9,788	10,300
Private Contracted Ship Maintenance BA-1, OPN 1000	1,000	1,216	1,308
% Funded	100%	96%	97%
Depot Operations Support BA-1, 1B5B	2,081	2,246	2,188
Total Ship Maintenance (1B4B, 1B5B, OPN 1000)	13,124	13,250	13,796

AIR OPERATIONS

Active Tactical Air Forces

The Flying Hour Program (FHP) is the budget to operate the Navy’s fleet and train the pilots we need. The FHP funds the necessary flight hours and maintenance efforts required to enable carrier and expeditionary strike group power projection. The FY 2022 budget provides for the operation, maintenance, and training of nine active Navy carrier air wings (CVWs) and three Marine Corps air wings, as reflected in Figure 4.6. A continued focus in FY 2022 is turning material readiness into warfighting readiness with full mission capable (FMC) aircraft. More ‘up’ aircraft is enabling pilots to execute more of their training matrix by completing additional “sets” and “reps” and improving proficiency, which then results in increased FHP execution. With more mission capable aircraft, Navy is better able to meet fleet training plans and COCOM requirements. Aircraft readiness improvements extend to the Navy’s pilot production pipeline, with Navy training squadrons able to train more pilots. Figure 4.8 displays aircraft inventories.

Figure 4.6 – DON Aircraft Force Structure

	FY 2020	FY 2021	FY 2022
Active Forces			
Navy Carrier Air Wings	9	9	9
Marine Air Wings	3	3	3
Patrol Wings	2	2	2
Helicopter Maritime Strike Wings	2	2	2
Helicopter Combat Support Wings	2	2	2
Reserve Forces			
Navy Tactical Air Wing	1	1	1
Logistics Air Wing	1	1	1
Marine Air Wing	1	1	1
Total	21	21	21
Primary Authorized Aircraft (PAA) - Active			
Navy	1,823	1,856	1,841
Marine Corps	1,225	1,219	1,204
Total	3,048	3,075	3,045

Figure 4.7 – DON Flying Hour Program Funding

<i>(Dollars in Millions)</i>	FY 2020	FY 2021*	FY 2022
Mission & Other Flight Operations (1A1A)			
USN	3,503	3,372	3,744
USMC	2,304	2,383	2,521
Subtotal	5,807	5,755	6,265
Fleet Air Training (1A2A)			
USN	1,715	1,479	1,739
USMC	550	632	726
Subtotal	2,265	2,111	2,465
Total	8,072	7,866	8,730
* FY 2021 figures are Enacted.			
Percent Funded of Total Requirement	96%	88%	83%

Figure 4.8 – DON Aircraft Inventory

Class Category	FY 2020	FY 2021	FY 2022
Attack	97	97	97
Fighter	244	281	310
In-Flight Refuel	79	83	84
Patrol	131	138	137
Rotary Wing	1,019	1,016	1,022
Strike Fighter	1,022	1,009	1,028
Tilt Rotor	316	327	343
Training Jet	261	261	260
Training Prop	310	310	310
Training Rotary	115	115	116
Transport	96	93	90
Unmanned	128	126	131
Utility	27	27	27
Warning	98	98	98
Total	3,943	3,981	4,053

Note: Figures include both OMN and OMNR.

Aircraft OPTEMPO



Mission and other flight operations include all Navy and Marine Corps tactical air (TACAIR) and anti-submarine warfare (ASW) forces, shore-based fleet air support, and irregular warfare. Funding provides flying hours to maintain required levels of readiness enabling Navy and Marine Corps aviation forces to perform their

primary missions as required in support of national objectives. The flying hour support program provides funding for transportation and travel of equipment, squadron staff, and personnel. In addition, it provides funding for aircrew training systems, commercial air services, and various information technology systems. These support accounts enable the training for and execution of primary missions.

The Navy measures aviation readiness using the Defense Readiness Reporting System Navy. CVWs maintain varied training and readiness (T&R) levels in accordance with the Optimized Fleet Response Plan (OFRP) in order to provide adequately trained aircrews across a 36-month deployment cycle. Marine Corps TACAIR readiness differs in approach and requires a steady readiness profile to be maintained in order to be prepared to rapidly and effectively deploy on short notice for operational plans or contingency operations. The Marine Corps Aviation Plan (AVPLAN) directs the T&R requirements and resources to attain readiness levels over a 12-month snapshot of a USMC 36-month squadron training cycle. The AVPLAN aligns with Department requirements by implementing a comprehensive, capabilities-based training system that provides mission skill-proficient crews and combat leaders to the combatant commanders.

The FY 2022 funding supports the requirements of deployed units, units training in preparation to deploy, and the maximum executable requirements of non-deployed units for sustainment and maintenance readiness levels. The budget funds to deployed T-ratings of 2.0 Navy / 2.0 Marine Corps and provides for nine active CVWs and three Marine Corps air wings.

Aircraft Depot Maintenance

The aircraft depot maintenance program funds repairs, overhauls, and inspections of aircraft and aircraft components to ensure sufficient quantities are available to meet fleet requirements to decisively win combat operations. To create the mission capable aircraft required to provide aviation operational availability, the FY 2022 budget seeks to maximize readiness by



prioritizing funding based on criticality and impact. This budget reflects a decrease in airframe and engine depot funding based on Navy Working Capital Fund and COMFRC stabilized rate reductions. The account also funds the Depot Readiness Initiative (DRI) to improve organizational level maintenance efforts. An increase in aviation logistics provides for maintenance costs associated with more F-35 and MV-22 aircraft added to the fleet. Additionally, FY 2022 continues to balance air depot

maintenance requirements with the aviation enabling programs to meet readiness goals.

Figure 4.9 - Aircraft Depot Maintenance and Aviation Logistics

Aircraft Depot Maintenance (1A5A)

(Dollars in Millions)

	FY 2020	FY 2021	FY 2022
Airframes	670	878	847
Engines	612	664	645
Components	42	35	51
Depot Readiness Initiative	0	27	32
Total	1,324	1,605	1,575
Percent Funded of Total Requirement	92%	91%	84%

Aviation Logistics (1A9A)

(Dollars in Millions)

	FY 2020	FY 2021	FY 2022
KC-130J Hercules	90	102	119
MV-22 Osprey	217	214	251
E-6B Mercury	83	86	91
F-35 Joint Strike Fighter	831	851	999
Total	1,221	1,253	1,460
Percent Funded of Total Requirement	97%	89%	89%

NAVY RESERVE OPERATIONS

The Department's reserve component (RC) operating forces consist of aircraft, combat equipment and support units, and their associated weapons in delivering strategic depth and operational capabilities to the Navy, Marine Corps, and joint forces. Funding is also provided to operate and maintain RC activities and commands in all fifty states plus Puerto Rico and Guam. This geographical diversity allows the Navy's Selected Reservists the opportunity to train outside of fleet concentration centers. The RC will maintain 118 Navy operational support centers, eight hangars, and three naval air station-joint reserve bases in FY 2022.

Reserve Component Air Forces

RC aircraft funding enables ready Navy and Marine Corps Reserve aviation forces to operate, maintain, and deploy in support of the Department's mission objectives. The Naval Air Reserve Force, as shown in Figure 4.10, consists of one tactical support wing (five squadrons), one fleet logistics support wing (12 squadrons), one maritime support wing (four squadrons), and two integrated helicopter mine countermeasures squadrons. The 4th Marine Aircraft Wing (MAW) consists of 12 squadrons and supporting units. Actions in FY 2022 include the transition of active component (AC) FA-18E/Fs and F-16Cs to the RC to replace legacy FA-18C's in support of adversary and training mission requirements. Marine Aerial Refueler Transport Squadron 452 will transition from the KC-130T Hercules to the KC-130J Super Hercules in support of aerial refueling services and air transport for personnel, equipment, and supplies. Additionally, following C/KC-130T grounding in July 2017, all aircraft will have mandated propeller changes and be fully operational in FY 2022.



Figure 4.10 – Reserve Component Aircraft Force Structure

Reserve Forces Air Wings	FY 2020	FY 2021	FY 2022
Navy Tactical Support Air Wing	1	1	1
Navy Logistics Support Air Wing	1	1	1
Navy Maritime Support Air Wing	1	1	1
Marine Aircraft Wing	1	1	1
Total	4	4	4
Primary Authorized Aircraft (PAA) – Reserve			
Navy	141	147	126
Marine Corps	136	133	146
Total	277	280	272
Flight Operations (1A1A) (Dollars in Millions)			
Reserve Forces			
Navy	433	422	437
Marine Corps	194	181	192
Total	626	603	629
% Funded	98%	92%	87%

Reserve Component Aircraft Depot Maintenance

The RC Aircraft Depot Maintenance program is integrated with the active component (AC) program to fund repairs, overhauls, and inspections. Figure 4.11 displays funding requests and readiness indicators for RC aircraft depot maintenance.

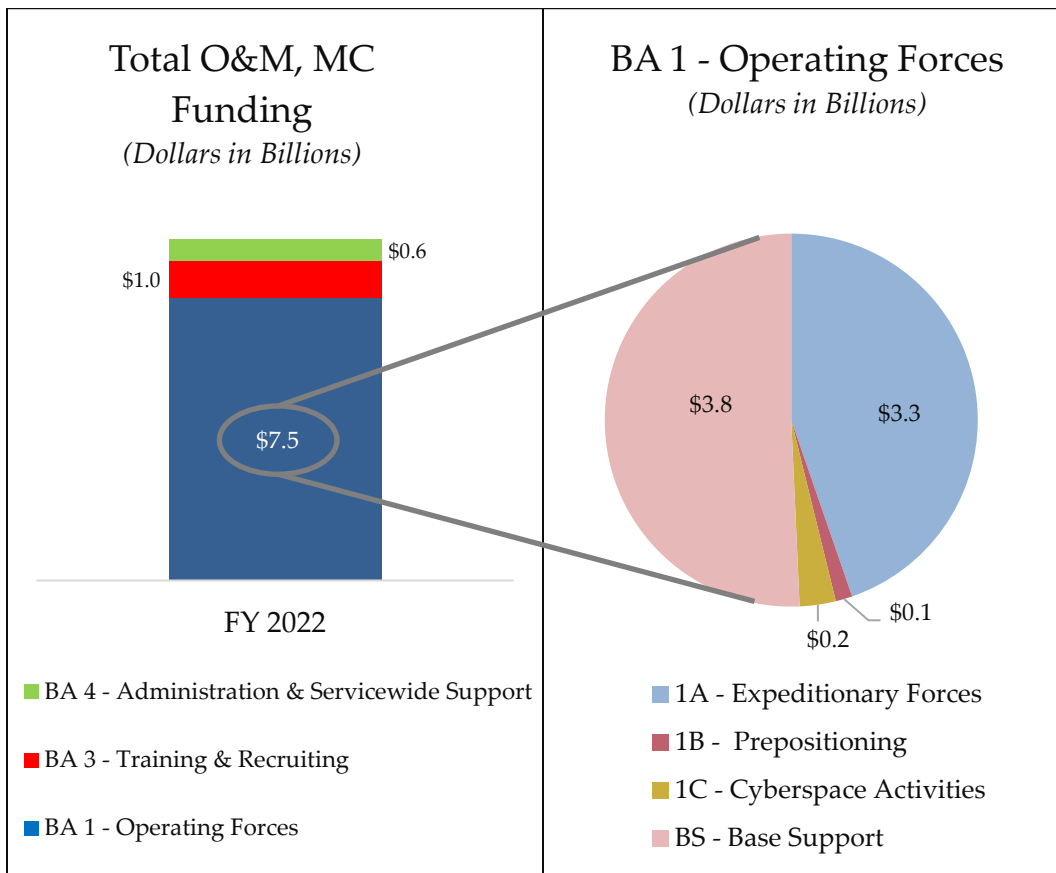
Figure 4.11 - Reserve Component Aircraft Depot Maintenance

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Airframes	89	97	104
Engines	30	17	30
Components	0	0	0
Depot Readiness Initiative	0	2	1
Total	120	117	135

MARINE CORPS OVERVIEW

The Marine Corps is redesigning the force for naval expeditionary warfare in actively contested spaces, fully aligning with the direction of the Commandant’s *Force Design 2030*, which recognizes a cost neutral, self-funding approach, through divestment of legacy capabilities. The future Fleet Marine Force (FMF) requires transformation from a legacy force to a modernized force with new organic capabilities. In 2030 the FMF will allow the Navy and Marine Corps to restore strategic initiative, and to define the future of maritime conflict by capitalizing on new capabilities to deter conflict and dominate inside an adversary’s weapon engagement zone. These changes will be accompanied by reinvigorating the FMF by putting more Marine Corps experts in Fleet Maritime Operations Centers; shifting emphasis in training, education, and supporting establishment activities; and refining component relationships in partnership with the Navy. Figure 4.12 displays active Marine Corps Operation and Maintenance (O&M) funding in FY 2022.

Figure 4.12 – FY 2022 Active Marine Corps O&M Funding



MARINE CORPS OPERATIONS

Active Operations

The Marine Corps continues to build and posture for the 21st century by prioritizing funding aimed at further reinforcing the transformation outlined in the *Commandant's Planning Guidance* and *Force Design 2030* report. The Marine Corps will be trained and equipped as a naval expeditionary force-in-readiness prepared to operate inside actively contested maritime spaces in support of fleet operations. To do this, the Marine Corps is building a more relevant, lethal and ready force to maintain our



military advantage in a fiscally constrained and executable manner, by addressing critical modernization requirements, divesting of legacy or low demand capabilities and investing in key warfighting capabilities needed in the future operating environment without sacrificing near-term warfighting readiness. The Marine Corps readiness accounts continue to support the

foundational efforts required to strengthen innovation and experimentation as well as to provide resources to the FMF, including training and field level and depot maintenance across ground and aviation programs. A push for greater integration with the Navy-Marine Corps team to enable the joint force, maintaining the Marine Corps force posture around the globe enabling the capacity to meet global steady state operations and contingency requirements while sustaining the *Indo-Pacific Force Posture Initiative*. Other areas include continuing investment in force lethality to achieve combat overmatch; building information operations capacity, including cyber forces conducting full-spectrum cyber operations as well as supporting the viability and reliability of our network; and supporting key levers of our *Infrastructure Reset Strategy*.

The Marine Corps consistently maintains about one-third of its FMF forward deployed throughout the globe. 15,000 forward deployed forces last year supported fleet operations as part of integrated American naval power. In addition to efforts

mentioned previously, the Marine Corps provided tailored military combat-skills training and advisor support to foreign forces as part of Marine Corps Forces Special Operation Command (MARSOC); and enabled full spectrum cyberspace operations while supporting joint and coalition forces as part of Marine Corps Forces Cyberspace Command (MARFORCYBER).

Ground Equipment Depot Maintenance

The Marine Corps uses a Total Force (active and reserve component) approach for the planning and execution of ground equipment depot maintenance. For Total Force ground equipment depot maintenance, the Marine Corps continues to make strategic choices in the divestiture of legacy programs to reallocate funds



toward building a more lethal, modern, multi-domain, expeditionary force. The FY 2022 budget was developed through programmatic changes based on a strategy of “divest to reallocate” as part of the *Commandant’s Planning Guidance and Force Design 2030*. Divestment efforts involve multiple legacy or surge capabilities not optimized for the future operating environment. As noted in Figure 4.13 below, ground equipment depot maintenance experienced significant reductions as a result of the discontinued need for depot level repairs for divested weapon systems associated with *Force Design*. Divestment reductions mainly impacted the combat vehicles and construction equipment maintenance activities. Divested systems include the M1A1 Main Battle Tank, M1150 Assault Breacher Vehicle, the M88A2 Heavy Recovery Vehicle, and associated bridging capabilities.

Figure 4.13 – Marine Corps Ground Equipment Depot

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Active Forces			
Automotive Equipment	28	28	18
Combat Vehicles	141	136	81
Construction Equipment	28	33	17
Electronics and Communications Systems	54	38	41
Missiles	3	2	5
Ordnance Weapons and Munitions	33	26	26
Total Active Forces	287	262	188

MARINE CORPS RESERVE OPERATIONS



The Marine Corps Reserve is a full partner in the Marine Corps Total Force concept. The reserve component is trained, organized, and equipped in the same manner as the active force. The reserve provides complementary assets that enable the Marine Corps Total Force to mitigate risk and

maximize opportunities. While organized and equipped congruently, we cannot expect our Selected Marine Corps Reserve (SMCR) units to maintain the same levels of readiness as our active component units. What we desire and expect in our SMCR units and Individual Ready Reserve (IRR) are Marines and units “ready for mobilization.” Once mobilized, our reserve component forces will undergo additional pre-deployment training to achieve the necessary readiness for deployment and employment. Similar to the active component, the Marine Forces Reserve consists of the Marine Forces Reserve headquarters and its subordinate Marine Division, Marine Aircraft Wing, and Marine Logistics Group, all of which are headquartered in New Orleans, Louisiana. The Reserves are unique in that the subordinate regiments/groups, battalions/squadrons, and companies/detachments

are located at 160 Reserve Training Centers and sites across the United States. The FY 2022 budget maintains the reserve component's capability.

Reserve Ground Equipment Depot Maintenance

For the reserve force, the FY 2022 budget ensures that the combined repairs and procurement programs provide a balanced level of attainment and maintenance of inventory in order to meet mission requirements. Though the overall maintenance budget remains constant from year to year, the variations in the categories are driven by the same strategic choices, divestitures, and allocation of funds decisions as stated within the active depot maintenance above. Figure 4.14 reflects Marine Corps Reserve ground equipment depot maintenance for FY 2022. For FY 2022, the changes include a decrease in construction equipment for the M1150 Assault Breacher Vehicle, and an increase in the electronics and communications systems maintenance activity for vehicle based radio and communication systems.

Figure 4.14 – Marine Corps Reserve Ground Equipment

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Reserve Forces			
Automotive Equipment	1	2	2
Combat Vehicles	8	9	9
Construction Equipment	2	3	1
Electronics and Communications Systems	3	2	3
Missiles	0	0	0
Ordnance Weapons and Munitions	2	2	2
Total Reserve Forces	16	18	17

FACILITY SUSTAINMENT, RESTORATION, AND MODERNIZATION

Navy and Marine Corps installations enable fleet operations, equipment reconstitution, material sustainment, Total Force training, unit recovery, Sailor and Marine administrative support, and quality of life programs. Continued investment in Facility Sustainment, Restoration, and Modernization (FSRM) is necessary to maintain our shore installations supporting required capabilities. The FSRM program maintains the working order of our facilities inventory and prevents premature condition degradation of mission critical facilities.

Facility Sustainment

The FY 2022 budget funds Navy and Marine Corps facility sustainment to 80 percent of the DoD-modeled requirement. Critical projects in support of operational requirements and warfighter readiness are maintained by prioritizing condition-based maintenance of critical facility components.

Facility Restoration and Modernization

The Navy continues to refine the *Shore Facilities Investment Model* and implement condition-based maintenance to efficiently prioritize and accurately budget restoration and modernization within the FSRM program. The Navy has focused limited funding on recapitalization of those critical facilities with the biggest impact to warfighter readiness.

The Marine Corps program strives to restore deteriorated facilities to an acceptable facilities condition rating, targeting those facilities in poor (Q3) and failing (Q4) condition. Increases in the FY 2022 budget reinvigorate funding in support of the Marine Corps' *Infrastructure Reset Strategy* while integrating the Commandant's *Force Design 2030* to support new platform and cyber capabilities. Restoration and modernization projects include gender integration projects for Marine Corps recruit depots, training facilities, airfield operation enhancements, barracks improvements, and utilities resiliency upgrades across all Marine Corps installations, as well as the administrative and supply facilities at both the National Capital Region and Marine Corps Installations West, all of which were delayed in FY 2021.

Facility Demolition

Facility demolition accounts for the demolition of obsolete and excess structures, thereby reducing costly upkeep on older structures and eliminating potential fire and safety hazards from installations. This demolition effort removes obsolete and excess structures, reduces upkeep cost, and improves the integrity of installations by eliminating degraded facilities. With the FY 2022 budget, the Marine Corps aims to divest of 2.3 million square feet (MSF) of older, excess, and obsolete facilities contributing to the consolidation and right-sizing of the Marine Corps' facilities



footprint to improve operational readiness, reaching the FY 2022 goal of 11 MSF. With the considerable investments in restoration and modernization, as well as supplemental hurricane recovery efforts for East Coast installations, the Marine Corps will be able to target the remaining failing (Q4) condition facilities in the upcoming years, with the goal of eliminating 31 MSF by FY 2028, as directed by the Commandant's *Infrastructure Reset Strategy*.

The Navy has no dedicated demolition funding in FY 2022. This is a part of the Navy's deliberate targeted investment strategy to focus limited resourcing on projects impacting our most critical facilities with the biggest impact to warfighter readiness. The Navy continues to look for opportunities to reduce footprint when the return on investment is clear.

Marine Corps Infrastructure Reset

Service level initiatives, increasing facility requirements, changes in national defense priorities, as well as delays and incremental funding for military projects such as those impacted by border wall deferments, continue to influence the Marine Corps' ability to effectively implement its *Infrastructure Reset Strategy*. These policy issues continue to increase the Marine Corps' deferred maintenance backlog, which is currently estimated at \$13.8 billion.

The Marine Corps continues to invest in improving data quality and analysis, installation master plans, installation network modernization, and security upgrades to support the *Infrastructure Reset Strategy* while ensuring all resources are spent on the highest Marine Corps' priorities at the lowest total lifecycle cost. Through our efforts, we are optimizing investments over the long-term to support Marine Corps' missions and align with the Commandant's *Force Design 2030* priorities.

Base Operating Support

The FY 2022 budget requests funding to support the operation of shore-based installations, including childcare, utilities, transportation, environmental, engineering support, base services (custodial, grounds maintenance, etc.), physical security, anti-terrorism and force-protection, and port and airfield operations.



ENVIRONMENTAL RESTORATION, NAVY

The Environmental Restoration, Navy (ERN) appropriation provides funds to clean-up sites polluted before 1987. While budgeted as ERN, in the funding year of execution the funds are transferred to the respective appropriation.



CHAPTER 2: DEFEND THE NATION

SECTION V: MILITARY CONSTRUCTION

OVERVIEW

The mission of the Department could not be achieved without high quality facilities that support our Sailors, and Marines. Further, our ability to rapidly deploy around the globe is directly connected to an effective shore infrastructure. Our focus is on targeted investments to maximize our readiness and warfighting capability in support of current and future mission requirements.

MILITARY CONSTRUCTION

The FY 2022 budget request of \$2.4 billion supports the Department's critical goals, financing 29 military construction baseline projects. Of these, 13 are for the active Navy, 14 for the active Marine Corps, one for the Navy reserve component, and one for the Marine Corps reserve component. Figure 5.1 displays the fluctuation of DON military construction funding levels over time.

Figure 5.1 – Historical Military Construction Funding

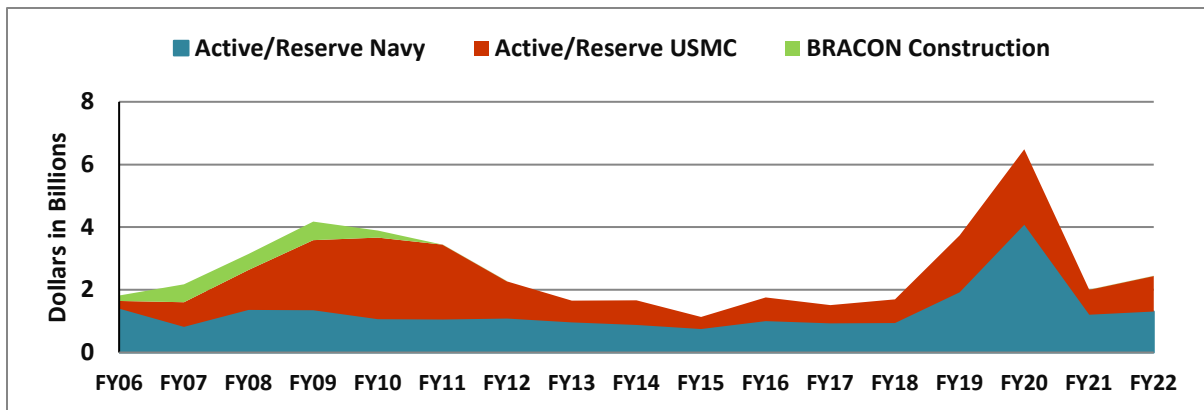


Figure 5.2 – Military Construction Funding Summary

(Dollars in Millions)	FY 2021	FY 2022
Major Construction	1,682	2,012
Minor Construction	42	59
Planning and Design	283	369
Total	2,007	2,440

Figure 5.2 shows the three functional categories of military construction funding for FY 2022 as compared to FY 2021. The key facilities investments within the FY 2022 request include the Guam Defense Policy Review Initiative (DPRI), the Shipyard Optimization Initiative Plan (SIOP), as well all other investments in new platforms, new technology, and the replacement of aging infrastructure.

The 2009 Guam International Agreement (amended in October 2013) between the U.S. Government and the Government of Japan outlined the realignment of Marine Corps forces to reduce the U.S. military footprint on Okinawa, including the relocation of some forces from Japan to Guam. The Guam Master Plan was completed in June 2014 to ensure all operational, base support, training, and quality of life requirements and support facilities and infrastructure were identified and sited. The DPRI construction projects in Guam to support the relocation of Marine Corps forces from Okinawa to Guam and provide facilities to meet current and future training requirements include: Combat Logistics Battalion-4 Facilities, Joint Region Marianas (\$92.7 million), Marine Expeditionary Brigade Enablers, Joint Region Marianas (\$66.8 million), Aviation Admin Building, Andersen, Guam (\$50.9 million), 4th Marines Regiment Facilities, Joint Region Marianas (\$109.5 million), Consolidated Armory, Joint Region Marianas (\$43.5 million), Principal End Items Warehouse, Joint Region Marianas (\$47.1 million), Bachelor Enlisted Quarters H (Increment), Joint Region Marianas (\$43.2 million) and Infantry Battalion Company, HQ, Joint Region Marianas (\$44.1 million). The FY 2022 request also includes DPRI Planning and Design (\$32.4 million) in support of future requirements.

The Navy's four public shipyards - Norfolk, Portsmouth, Puget Sound, and Pearl Harbor, are essential elements of our national defense. The average age of the naval shipyard facilities and related infrastructure is 61 years, while the average dry dock age is 107 years. The Department's Shipyard Infrastructure Optimization Plan will deliver efficient and modernized shipyards through upgrading existing dry docks and building news ones, reimaging the physical layout of the shipyards, and replacing antiquated capital equipment with modern machines. Successful implementation of

SIOP will ensure the four shipyards are ready and able to support the class maintenance plan for the Navy's current and future submarines and aircraft carriers. Naval shipyard infrastructure modernization projects at naval shipyards support submarine force structure and maintenance requirements and include Multi-Mission Dry Dock #1 Extension, Phase 1 Increment 2, Portsmouth Naval Shipyard, Kittery, ME (\$250.0 million), Dry Dock Saltwater System for CVN-78 (\$156.4 million), and Planning and Design (\$143.1 million).

Other Department's facilities investment strategies for FY 2022 include investment in new platforms and technologies such as F-35 Flightline Utilities Modernization Phase II, Cherry Point Marine Corps Air Station (\$113.5 million), Directed Energy Weapons Test Facilities, Naval Base Ventura County, Point Mugu, California (\$19.9 million), and replacement of aging infrastructure including the Submarine Pier 3, Norfolk Naval Shipyard, VA (\$88.9 million) and II Marine Expeditionary Force (MEF) Operations Center Replacement 1st Increment 2, Camp Lejeune, NC (\$42.2 million).

The Department's FY 2022 request includes the Joint Mobility Processing Center project, Souda Bay, Greece (\$41.7 million) that was diverted as a result of Sec. 2808 national emergency at the southern border of the United States.



BASE REALIGNMENT AND CLOSURE

The Base Realignment and Closure (BRAC) Budget in FY 2022 is \$111.2 million. These funds will be used to continue environmental clean-up and monitoring at legacy locations. Figure 5.3 displays the breakout between Operation and Maintenance and Environmental BRAC.

Figure 5.3 – BRAC Funding Summary

(Dollars in Millions)	FY 2021	FY 2022
Operation and Maintenance	9	11
Environmental	196	101
Total	205	111

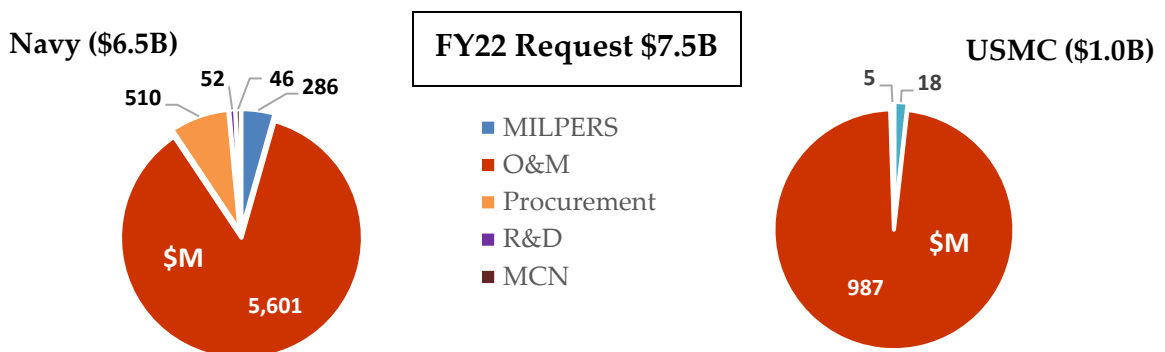
CHAPTER 2: DEFEND THE NATION

SECTION VI: DIRECT WAR & ENDURING COSTS

OVERVIEW

New to the FY 2022 budget request is that direct war and enduring cost funding are requested in the base budget. The Navy and Marine Corps’ overseas force posture is shaped by ongoing and projected operational commitments. Direct war funding accounted for in the FY 2022 base budget totals \$1.6 billion. Direct war costs are those combat or direct combat support costs that will not continue to be incurred once combat operations end at major contingency locations. Enduring cost funding accounted for in the FY 2022 base budget is \$5.9 billion. Enduring costs are enduring in theater and in CONUS requirements that will likely remain after combat operations cease, and have previously been funded in overseas contingency operations (OCO). Both direct war and enduring cost funds are required to reconstitute weapon systems and equipment in use by forward deployed expeditionary forces operating in extreme environmental and demanding high tempo operational conditions. Upkeep, overhaul, and warfighter support for this equipment is essential to support the high demand/low density operations in support of global operations. FY 2022 continues funding for direct war operations in support of Afghanistan, Iraq, and other locations in theater. The FY 2022 request includes incremental funding to sustain operations, manpower, equipment, as well as maintenance. These costs include aviation operations and maintenance, ship maintenance, intelligence, surveillance and reconnaissance, cyber operations, combat support, Marine Corps operations and field logistics, Navy and Marine Corps mobilized reservists, and other special pays. Figure 6.1 shows a breakout of funding by appropriation.

Figure 6.1 – FY 2022 Direct War & Enduring Costs Funding





The level of funding requested in FY 2022 decreases, reflecting the withdrawal of forces from the CENTCOM AOR, while still supporting the interim *National Security Strategy*. Figure 6.2 provides direct war and enduring cost detail for FY 2021 enacted and the FY 2022 budget request.

Figure 6.2 – DON Direct War & Enduring Costs Funding

(Dollars in Millions)	FY 2020 *	FY 2021			FY 2022		
		Total	Direct War	Enduring Costs	Total	Direct War	Enduring Costs
Appropriations							
Military Personnel							
Military Personnel, Navy	41	146	236	382	32	243	275
Military Personnel, Marine Corps	104	119	11	130	4	14	18
Reserve Personnel, Navy	-	-	12	12	-	12	12
Reserve Personnel, Marine Corps	3	-	2	2	-	-	-
Subtotal	148	265	261	526	36	268	304
Operations and Maintenance							
Operations and Maintenance, Navy**	1,331	955	10,425	11,380	1,064	4,524	5,588
Operations and Maintenance, Marine Corps	507	526	583	1,109	336	649	985
Operations and Maintenance, Navy Reserve	-	-	21	21	-	12	12
Operations and Maintenance, Marine Corps Reserve	8	8	1	9	1	1	2
Subtotal	1,846	1,489	11,029	12,519	1,402	5,187	6,589
Procurement							
Aircraft Procurement, Navy	102	33	-	33	45	8	53
Other Procurement, Navy	38	86	255	342	8	405	413
Procurement of Ammunition, Navy/Marine Corps	122	77	-	77	29	-	29
Procurement, Marine Corps	21	48	-	48	5	-	5
Weapons Procurement, Navy	65	6	-	6	8	7	14
Subtotal	348	250	255	505	95	420	515
Other							
Research, Development, Test, and Evaluation, Navy	37	43	17	60	26	26	52
Military Construction	-	-	70	70	-	46	46
Subtotal	37	43	87	130	26	72	98
DON Total Direct War & Enduring Costs	2,379	2,047	11,633	13,679	1,559	5,947	7,506

*OCO funding was not broken out by Direct War and Enduring Costs.

**FY 2021 Enduring Costs includes \$5.162B of Overseas Contingency Operations for Base.

NOTE: FY 2020 reflects actual cost of war (CoW) report data. FY 2021 reflects Enacted values. Numbers might not add due to rounding.



Take Care of Our People



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CHAPTER 3: TAKE CARE OF OUR PEOPLE

SECTION VII: PERSONNEL

OVERVIEW

The ability to complete our mission requires the recruitment and retention of the nation's citizens who volunteer to become Sailors and Marines. The success of our team, both active duty and reserve, is balanced with the dedication of our civilian personnel and contractor support.



Operational readiness is achieved with people, our greatest resource, and therefore, our number one priority. To protect American interests at home and abroad, we maintain the world's most capable fighting force. Our Sailors and Marines sail our ships, fly our aircraft, and operate on the ground. The civilian workforce provides our military with the resources and support required to maintain maritime superiority through forward presence, which in turn preserves peace through strength and advances American influence.

Controlling the seas and projecting power requires a knowledgeable and diverse force. The FY 2022 Military Personnel appropriations fund a robust and competitive compensation program that allows for the recruitment and retention of the best Sailors and Marines. We seek those that embrace our values and put the nation first. The DON is putting a renewed emphasis on building respect for the dignity of every team member. We will leverage our different backgrounds and talents to maintain a tactical advantage, through a culture of trust and confidence.

The FY 2022 submission funds a military and civilian pay raise of 2.7 percent.

MILITARY PERSONNEL

Active Navy Personnel

America's Sailors are the cornerstone of the sea force, founded on the values of courage, honor, and commitment. Our Sailors protect the homeland and guarantee freedom of navigation, which provide trust and confidence in the American people. The size of the naval force reflects fleet needs—having the proper amount of people for new and existing platforms and capabilities.

The FY 2022 Military Personnel, Navy budget request funds an active duty end strength of 346,200 personnel. Our focus remains to recruit, develop, and retain the optimal mix of personnel with the right skills and experience to man the fleet. The naval force draws from the broadest talent pools, values health and fitness, attracts and retains innovative thinkers, provides flexible career paths, and prioritizes merit over tenure. The FY 2022 Military Personnel, Navy budget request is 1,600 end strength lower than FY 2021. This end strength level aligns with force structure requirements and maintains a force that can fight and win. We continue to retain the very best with special and incentive pays, as well as upwardly mobile career tracks.



The FY 2022 request includes strength changes for the decommissioning of fifteen ships including seven Ticonderoga class cruisers and four littoral combat ships (LCSs). Also included are personnel reductions related to the FY 2021 decommissioning of the USS BONHOMME RICHARD (LHD-6). These reductions are partially offset by new construction crews on various platforms including Virginia class submarines and Arleigh Burke class destroyers.

To maintain advantages at sea, our Sailors must be the best trained in the world. We continue to invest in Ready Relevant Learning (RRL), which provides timely, relevant training using an agile, multi-path approach to ensure our operators have the knowledge they need to succeed in combat. Live, Virtual Constructive (LVC) training



leverages improved computational power and network technology to blend the intensity of underway operations with high-fidelity synthetic training. This allows our Sailors to master high-end tactics in secure, controllable conditions. Together, RRL and LVC will raise the standard of preparedness for our Sailors. The

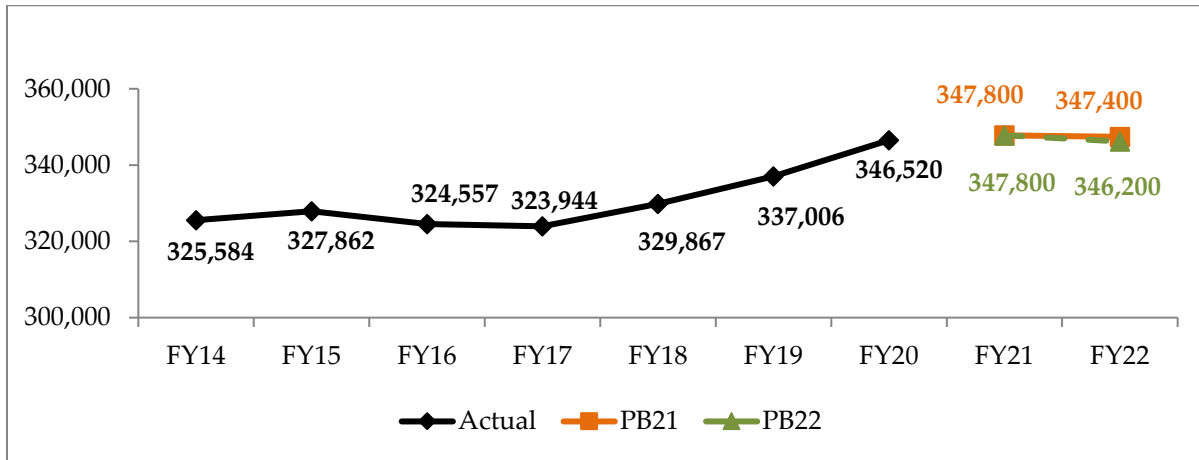
Navy's education enterprise will continue to align its curriculum to focus on developing warfighter concepts and capabilities. The Naval Community College will provide Sailors educational opportunities that strengthen the service and support the needs of the fleet.

The Navy will continue improving the quality of life for Sailors. Task Force One Navy has released nearly 60 recommendations intended to combat racism and discrimination, promoting inclusion. These efforts span recruiting, career development, and retention. We will continue to provide a comprehensive package of pay and benefits that rewards Sailors assigned to deployable units by providing increased sea pay, special and incentive pays for critical skill-sets, and compensation for Sailors underway for extended deployments. We will manage our personnel strength to deliver a naval force that produces leaders and teams who learn and adapt to achieve maximum possible performance, and who achieve and maintain high standards to be ready for decisive operations and combat. Navy active military manpower is reflected in Figures 7.1 and 7.2.

Figure 7.1 – Active Navy End Strength by Type

	FY 2020	FY 2021	FY 2022
Officers	55,659	56,250	56,020
Enlisted	286,337	287,200	285,830
Midshipmen	4,524	4,350	4,350
Total Strength	346,520	347,800	346,200

Figure 7.2 – Active Navy End Strength Trend



Reserve Navy Personnel



The FY 2022 Reserve Personnel, Navy budget request supports 58,600 Selected Reservists and full-time support personnel to first and foremost provide strategic depth, rapidly increasing the agility and lethality of the Navy Total Force and providing relevant operational capability. To that end, the Navy Reserve’s absolute top priority in FY 2022 is warfighting readiness.

The Navy Reserve is an integrated force multiplier to the active component (AC), leveraging experience in warfighting, industry, and innovation to help stay ahead of our nation’s competitors. A robust reserve component (RC) enables the Navy to leverage prior active duty experience and training, critical civilian skill-sets not resident in the AC, and industry and academic partnerships related to our reservists civilian careers.

In FY 2022, the Navy Reserve will decrease by 200 end strength as shown in Figures 7.3 and 7.4. The drivers of the decrease include reductions in the capacity of Helicopter Mine Countermeasures, Helicopter Maritime Strike, and Helicopter Sea

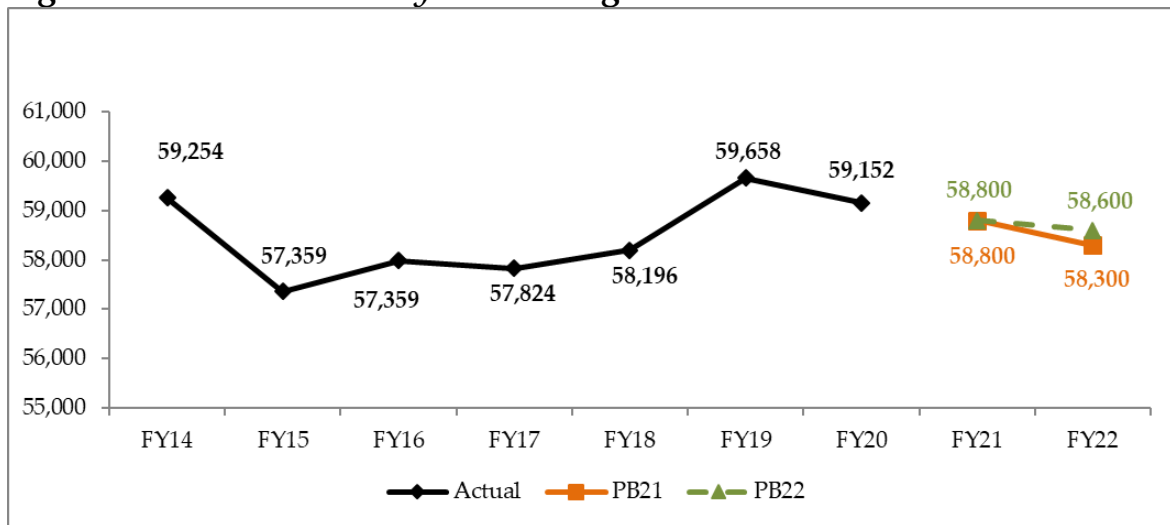
Combat squadrons as well as a transition from military to contract maintenance for F-16 Adversary support. The changes reduce reserve strategic depth in the helicopter communities but allow the necessary prioritization of funds across the naval aviation enterprise. Small program additions are incorporated to establish distributed mobilization capability at the six reserve component commands, enabling the rapid mobilization of reserve Sailors from any region of the U.S., and to establish a reserve unit at the Surface & Mine Warfare Development Command in order to leverage the experience and expertise of reserve Sailors.

The Navy Reserve remains a combat-ready, agile and committed force of citizen Sailors who are ready to win.

Figure 7.3 – Reserve Navy End Strength by Type

	FY 2020	FY 2021	FY 2022
Drilling Reserve	49,034	48,585	48,307
Fulltime Support	10,118	10,215	10,293
Total Strength	59,152	58,800	58,600

Figure 7.4 – Reserve Navy End Strength Trend



Active Marine Corps Personnel

The Marine Corps, as a naval expeditionary force-in-readiness, will be prepared to operate inside actively contested maritime spaces in support of fleet operations. In crisis prevention and crisis response, the Fleet Marine Force – acting as an extension of the fleet – will be first on the scene, first to help, first to contain a brewing crisis, and first to fight if required to do so. The Marine Corps also provides expeditionary forces within the adversaries’ weapons engagement zone in support of sea control and to defeat a “fait accompli” gambit should deterrence fail.



The FY 2022 Military Personnel, Marine Corps (MPMC) budget request funds an active duty end strength of 178,500. This is an overall end strength decrease of 2,700 from the FY 2021 enacted budget to enable the Marine Corps’ Force Design modernization initiatives. The reduction of active duty end strength is part of

the larger effort to modernize the Marine Corps by divesting of legacy defense programs and the force structure that supports those legacy capabilities, such as tanks, bridging and law enforcement, along with a reduction of surge capacity, with the intent of investing in modernization. The institutional changes and modernization decisions are based on a long-term view and singular focus on where we want the Marine Corps to be in 2030. We are focused on developing and retaining Marines with the right skills for future challenges such as distributed operations, crisis response, and electronic, information, and cyber warfare.

Central to our role in providing a lethal force is recruiting the most qualified men and women within our nation who are willing to raise their hand, affirm an oath, and wear the Eagle, Globe, and Anchor. The Marine Corps will ensure we recruit the right people, devoted to upholding the values of honor, courage, and commitment.

In the past year, the Marine Corps executed 156 total operations, nine amphibious operations, 36 theater security cooperation events, and participated in 36 exercises. These included Special Marine Air Ground Task Force - Crisis Response - Central Command (SPMAGTF-CR-CC) deployed throughout the Central Command area of

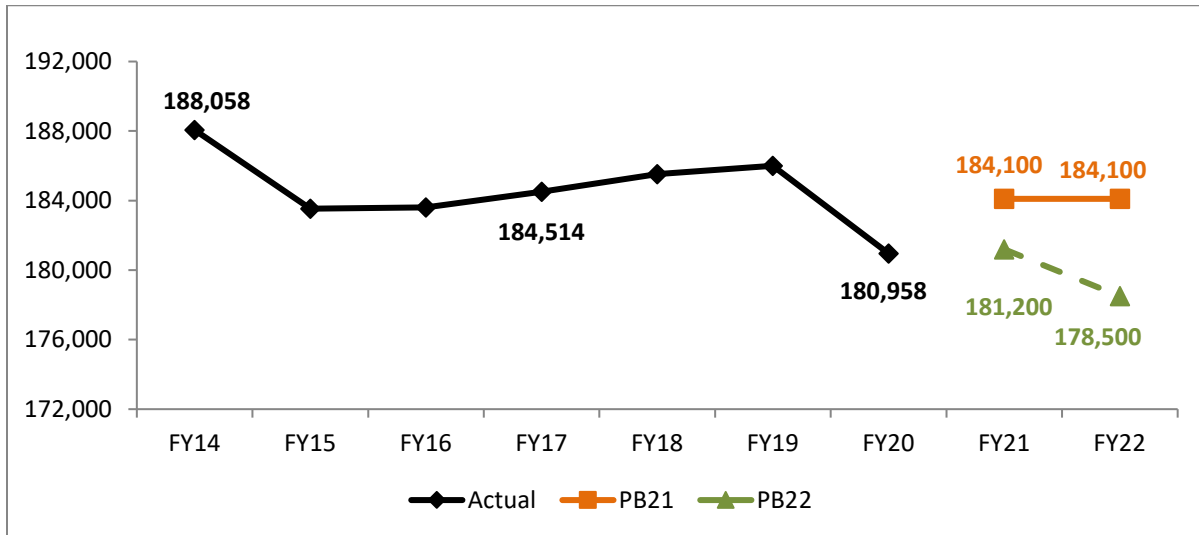


responsibility for Operation Inherent Resolve (OIR) and Operation Freedom Sentinel (OFS). Amphibious Ready Groups / Marine Expeditionary Units (ARG/MEU) conducted operations in support of combatant commands (COCOMs) along-side regional partners providing a range of deliberate and crisis response options. Additional Marine Corps SPMAGTFs conducted crisis response and contingency operations for AFRICOM, SOUTHCOM, and support to U.S. Customs and Border Patrol. Major theater security cooperation events and exercises were held in Japan, South Korea, Thailand, Malaysia, and Singapore. Marine Corps also conducted training in EUCOM with Germany, Norway, Scotland, and Romania that enhanced the ability to develop and enhance military cooperation, capability, and interoperability with partner nations; and sustained a ready, forward presence supporting the combatant commander requirements. The Marine Corps also provided defense support to civil authorities in the homeland this year in response to the Coronavirus 2019 (COVID-19) pandemic and wildfires in California.

Figure 7.5 – Active Marine Corps End Strength by Type

	FY 2020	FY 2021	FY 2022
Officers	21,450	21,484	21,850
Enlisted	159,508	159,716	156,650
Total Strength	180,958	181,200	178,500

Figure 7.6 – Active Marine Corps End Strength Trend



Reserve Marine Corps Personnel

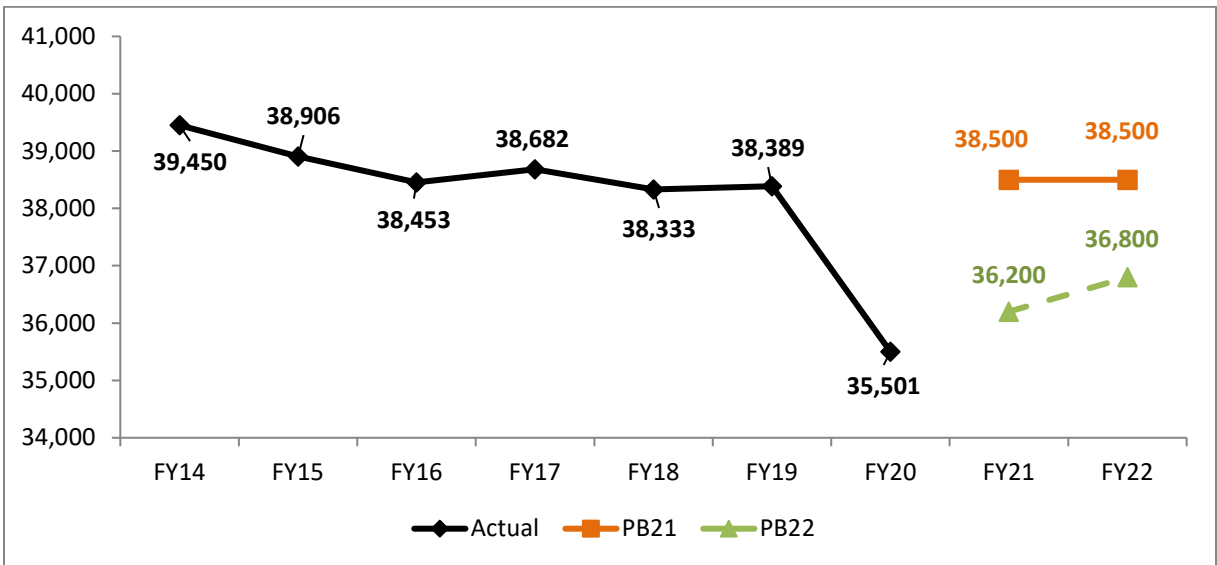
The FY 2022 Budget Request supports a Marine Corps Selected Reserve end strength of 36,800. The Marine Corps Reserve maintains a “Ready-Relevant-Responsive” force capable of seamlessly operating as a part of the total force to fulfill combatant command (COCOM) and service rotational and emergent requirements. The reserves support each COCOM by providing forces capable of regional security cooperation, crisis response and prevention activities, and major combat operations. The Marine Corps Reserve maintains a robust operational tempo while providing critical capabilities essential in sustaining lasting national security at the strategic level. Global deployments, along with participation in service-level, joint, and multilateral exercises, develop the depth of experience necessary to ensure the Marine Corps Reserve is relevant and ready to meet the COCOM needs for highly trained, experienced and motivated general-purpose forces. The budget provides pay and allowances for drilling reservists, personnel in the training pipeline, and full-time active reserve personnel.



Figure 7.7 - Reserve Marine Corps End Strength by Type

	FY 2020	FY 2021	FY 2022
Drilling Reserve	33,138	33,814	34,414
Full Time Support	2,363	2,386	2,386
Total Strength	35,501	36,200	36,800

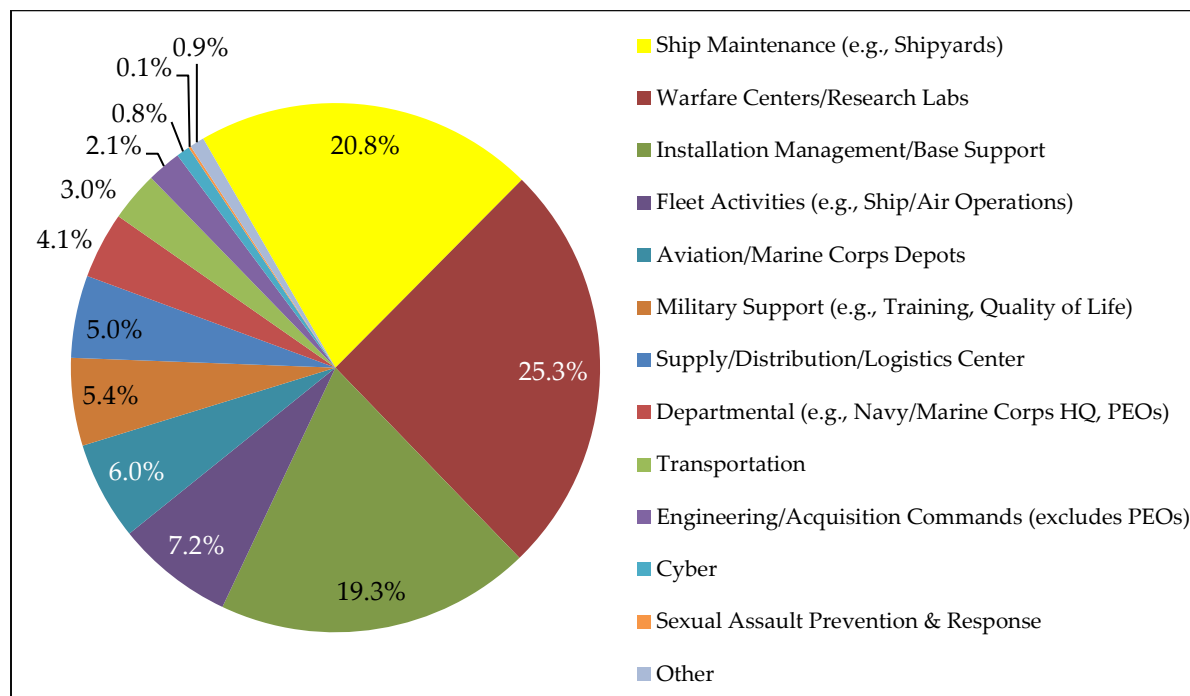
Figure 7.8 – Reserve Marine Corps End Strength Trend



CIVILIAN PERSONNEL

The DON civilian workforce includes a wide range of specialties, including scientists, engineers, and cyber experts. They complement our Sailors and Marines, designing the weapons and equipment to keep America at the forefront of global power competition. The DON continuously reviews the civilian personnel portfolio to ensure we have the right mix of skills to support new strategies, tactics, and capabilities. The workforce is in direct support of the DON mission; its size reflects the needs of the fleet and the ability to increase capability and lethality. Figure 7.9 displays the diverse nature of the civilian workforce.

Figure 7.9 – Civilian Manpower Work Areas, FY 2022



This budget reflects a balance between maintaining readiness, building the fleet of the future, and taking care of our people. To accomplish this, the budget includes growth in the ship maintenance workforce to meet scheduled maintenance, reduce backlogs, and increase maintenance availabilities through the FYDP. Additional personnel for the Sexual Assault Prevention and Response Office (SAPRO) will provide support services for at-risk populations to reduce incidents of destructive behavior. The DON continues to protect our Sailors and Marines with increased security at our bases and

facilities, including experts to assess the physical security and incident response at our installations.

Figure 7.10 displays total civilian Full-Time Equivalent personnel (FTEs) by component, type of hire, appropriation, and by work area.



Figure 7.10 – DON Civilian Manpower in Full-Time Equivalent Personnel

	FY 2020	FY 2021	FY 2022
Total Department of the Navy	221,187	221,843	223,113
By Component:			
Navy	198,767	199,051	200,192
Marine Corps	22,420	22,792	22,921
By Type Of Hire:			
Direct	208,612	207,996	209,058
Indirect Hire, Foreign National	12,575	13,847	14,055
By Appropriation/Fund:			
Operation and Maintenance, Navy	116,718	115,998	117,452
Operation and Maintenance, Navy Reserve	920	902	901
Operation and Maintenance, Marine Corps	20,197	20,352	20,769
Operation and Maintenance, Marine Corps Reserve	214	239	268
Total Operation and Maintenance	138,049	137,491	139,390
Base Closure and Realignment	52	52	52
Family Housing (Navy/Marine Corps)	684	936	921
Research, Development, Test, and Evaluation, Navy	809	792	782
Total Other	1,545	1,780	1,755
Total Working Capital Funds	81,593	82,572	81,968
By Work Area:			
Warfare Centers/Research Labs	56,409	56,841	56,511
Ship Maintenance (e.g., Shipyards)	45,011	45,383	46,337
Installation Management/Base Support	46,831	43,435	42,974
Fleet Activities (e.g., Ship/Air Operations)	14,898	16,025	16,037
Aviation/Marine Corps Depots	13,282	13,629	13,442
Military Support (e.g., Training, Quality of Life)	11,057	11,508	11,955
Engineering/Acquisition Commands (excludes PEOs)	4,767	4,537	4,650
Supply/Distribution/Logistics Center	10,742	10,967	11,236
Departmental (e.g., Navy/Marine Corps HQ, PEOs)	9,275	9,189	9,062
Transportation	6,558	6,604	6,785
Cyber	1,207	1,691	1,831
Sexual Assault Prevention & Response	147	181	318
Other	1,003	1,853	1,975

CHAPTER 3: TAKE CARE OF OUR PEOPLE

SECTION VIII: MILITARY FAMILY HOUSING

OVERVIEW

The mission of the Department could not be achieved without high quality facilities that support our Sailors, Marines, and their families. Further, our ability to rapidly deploy around the globe is directly connected to an effective shore infrastructure. Our investments in military family housing directly improve quality of life for our Sailors, Marines, and their families.

FAMILY HOUSING

The family housing FY 2022 budget request of \$435.0 million includes the operation, maintenance, recapitalization, leasing, and privatization oversight of the Department's family housing worldwide. The Department is fully committed to ensuring our service members and their families have access to safe, quality, and well maintained



homes by continuing to improve our privatized housing program through building residents trust, reinforcing oversight, and exercising active leadership. The budget request represents the funding level necessary to provide safe and adequate housing either through the community or in government quarters.

The Department's FY 2022 budget request includes \$77.6 million for a construction project in Japan, one in Washington D.C., and planning and design funds for future projects. Additionally, \$357.3 million is included for the operation and maintenance of approximately 8,700 government-owned units and approximately 1,700 leased units located worldwide. The level of funding translates to 92 percent of the

government-owned inventory meeting adequate standards, which is above the DoD goal of 90 percent. Figures 8.1 and 8.2 display resources and units for family housing.

For Navy projects, the Department's FY 2022 budget request includes \$61.5 million for the improvement of 97 enlisted family housing units at Commander Fleet Activities Yokosuka, Japan. The budget also includes \$306.4 million for the operation and maintenance of approximately 6,800 government-owned units and over 1,700 leased units located worldwide. The level of funding translates to 95 percent of the government-owned inventory meeting adequate standards.

For Marine Corps projects, the Department's FY 2022 budget request includes \$10.4 million for the whole house renovation of the Home of the Commandants. The budget also includes \$51.0 million for the operation and maintenance of approximately 1,900 government-owned units and 12 leased units located worldwide. The level of funding translates to 84 percent of the government-owned inventory meeting adequate standards.

Figure 8.1 – Family Housing Funding Summary

(Dollars in Millions)	FY 2021	FY 2022
Operations	366,493	357,341
Construction	42,897	77,616
Total	409,390	434,957

Figure 8.2 – Navy & Marine Corps Family Housing Units

	FY 2020	FY 2021	FY 2022
Privatized Inventory (End of FY)	62,358	62,358	62,358
Government-Owned Inventory (Average)	8,686	8,622	8,753
Leased Inventory (Average)	1,709	1,709	1,712
Total	72,753	72,689	72,823

CHAPTER 3: TAKE CARE OF OUR PEOPLE

SECTION IX: PEOPLE PROGRAMS

OVERVIEW

The DON is committed to taking care of Sailors, Marines and their families. This budget provides funding for numerous programs that will benefit servicemen, servicewomen, and their families. In the FY 2022 budget request, the DON continues its commitment to education, sexual assault prevention and response (SAPR), mental health, child and youth programs, and morale, welfare, and recreation programs.

EDUCATION

The Department of the Navy seeks to address the balance between future force structure, current readiness requirements, and warfighter development. Resources were balanced to ensure FY 2022 educational requirements are met. Programs that decrease include the United States Naval Academy, Naval Postgraduate School, and Naval War College. These programs had targeted increases in FY 2021 due to an *Education for Sea-Power* strategy; however, that strategy is being re-examined, and as such the increases were removed in FY 2022. The DON funds the Marine Corps Voluntary Education Program (VolEd) which includes high-quality advisory services and access to undergraduate, graduate, and vocational opportunities to assist Marines in achieving their personal and professional goals.

Figure 9.1 – Higher Education Funding

<i>(Dollars in Millions)</i>	FY 2021*	FY 2022
Education	615	498

* FY 2021 figure is Enacted.

Other key educational programs funded include the Naval Reserve Officer Training Corps (NROTC), Naval Junior Reserve Officers Training Corps (NJROTC), Marine Corps Junior Reserve Officers Training Corps (MCJROTC), Tuition Assistance (TA) Program, and Naval Community College. The Naval Reserve Officer Training Corps (NROTC) program produces unrestricted line Navy and Marine Corps officers. Training is conducted at civilian colleges and universities providing instruction to highly qualified

baccalaureate degree students who, upon graduation, receive a commission in the Navy or Marine Corps. Both the Naval Junior Reserve Officers Training Corps (NJROTC) Program and the Marine Corps Junior Reserve Officers Training Corps (MCJROTC) Program are congressionally sponsored youth citizenship programs mandated by Public Law 88-647. Both of these programs enhance the image of the military in the eyes of the community by providing a chance for success to the nation's youth. NJROTC and MCJROTC are intended to instill in students in American high schools the value of citizenship, service to the United States, personal responsibility, and a sense of accomplishment. The Junior Reserve Officer Training Corps (JROTC) had a one-time FY 2021 Congressional increase for JROTC STEM training and education. These funds were not continued in FY 2022. The Tuition Assistance (TA) Program is the primary method by which active duty Sailors pursue higher education during off-duty hours. TA pays 100% of tuition and fees up to the Defense Department maximum of \$250 per semester hour. In the FY 2022 budget submission, TA was reduced as Navy leadership seeks to address the balance between future force structure, current readiness requirements, and war-fighter development. The Naval Community College will be a fully accredited, on-line learning delivery system, capable of conferring Associates Degrees in Science in fields that both complement warfighter occupations in the Navy and Marine workforce and bridge Sailors and Marines to the global knowledge economy. Additionally, the Joint Services Transcript (JST) is an academically accepted document approved by the American Council on Education (ACE) to validate a Marine or Sailor's military occupation, training, and corresponding ACE college credit recommendations.



Figure 9.2 – Other Education Funding

<i>(Dollars in Millions)</i>	FY 2021*	FY 2022
Reserve Officers Training Corps (ROTC)	164	167
Junior ROTC	62	57
Tuition Assistance	73	67
Naval Community College	9	13

* FY 2021 figure is Enacted.

SEXUAL ASSAULT PREVENTION AND RESPONSE (SAPR)

DON leaders at all levels are committed to a culture that does not tolerate, condone, or ignore sexual assault. The DON's SAPR program continues to focus on increasing reporting and decreasing prevalence of sexual assault through primary prevention, refined response capabilities, treating victims with compassion, providing quality care, and addressing the barriers uniquely associated with male reporting of sexual assault.

Individual Commands, NCIS, and Navy and Marine Corps legal teams strive to conduct thorough investigations in a timely manner and provide a fair and equitable system of accountability to ensure justice and maintenance of good order and discipline. The DON is taking a holistic approach to prevention through several actions. First, the DON is creating a "culture of excellence" to prevent destructive behaviors, promote signature behaviors (positive behaviors), and leverage science and data analytics. Next, we are emphasizing organizational trust and transparency as well as inclusion and connectedness among every service member, family member, and civilian. The DON is actively establishing an environment in which Sailors and Marines do not tolerate, condone, or ignore sexual assault or other inappropriate behaviors. We have proliferated effective prevention and intervention education and training via various platforms. In addition, the DON has a 24/7 response capability to ensure victim support and appropriate accountability. Funding for the SAPR program includes victims' legal counsel (VLC), SAPR officers, and headquarters' staff.

Figure 9.3 – Sexual Assault Prevention and Response Funding

<i>(Dollars in Millions)</i>	FY 2021*	FY 2022
SAPR	84	131

* FY 2021 figure is Enacted.

MENTAL HEALTH

The DON invests in mental health requirements to increase and educate the Department of the Navy's mental health workforce, modernize mental health evaluation systems, and increase staffing levels to reduce evaluation timelines and manage mental health services. The DON strives to improve operational readiness and improve healthcare access to DON service members using virtual health capabilities and expanded medical

capabilities for mental health assessments using a virtual health platform including the required equipment, staffing, and training.

The FY 2022 request provides increased funding to optimize mental health care for the Force. Funds support virtual mental health initiatives, expanded drug and alcohol counselor training, additional mental health staffing across the DON, information technology modernization and upgrades, and analytical and decision support tools.

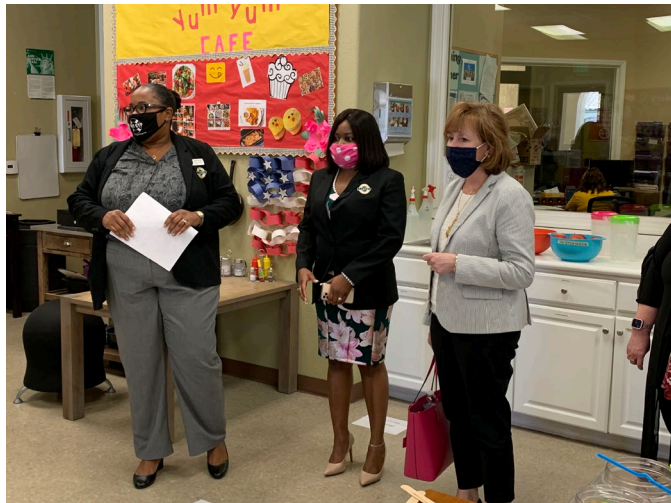
Figure 9.4 – Mental Health Funding

<i>(Dollars in Millions)</i>	FY 2021*	FY 2022
Mental Health	21	44

* FY 2021 figure is Enacted; seeking ATR.

CHILD AND YOUTH PROGRAMS

DON child and youth programs support the mobile military family’s readiness and ability to meet the mission by providing affordable, high quality child and youth development and school transition programs that substitute for the long-time support systems that non-military/non-DoD families generally have. Affordable, high quality commercial childcare capacity shortages nation-wide exacerbate wait times for Navy childcare especially in the fleet concentration areas such as Norfolk, VA; San Diego, CA; Bremerton, WA; Pearl Harbor, HI; and the National Capital Region. The Navy is working on several innovative approaches to expand funded childcare capacity through commercial leasing, repurposing under-utilized facilities, expanding fee assistance, increasing childcare options for activated/drilling Reservists, procurement of Mobile Learning Centers and contracts for remote OCONUS childcare. Similarly, the Marine Corps has seen notable waitlists at Camp Pendleton, CA, Hawaii, Quantico, VA, and Camp Lejeune/New River, NC. The Marine Corps is addressing these issues by hiring new staff for unfilled classrooms spaces, MILCON project submissions, and through a non-competitive child care employee transfer program.



MORALE, WELFARE, AND RECREATION

The Navy Morale, Welfare, and Recreation (MWR) program focuses on creating and maintaining resilient, ready Sailors. MWR's Navy Operational Fitness and Fueling System (NOFFS) provides online fitness programs packaged to remove the guess work and help Sailors progress from any fitness level to operational readiness with particular focus on injury prevention and operational effectiveness. The Deployed Forces program enhances the quality of life for Sailors and Marines at sea and at forward deployed Navy locations through fitness and sports programs. MWR enriches fitness programs at the command level through Navy-wide initiatives such as Command Fitness Leaders (CFL) Certifications. MWR certified a total 965 CFLs in FY 2020 through training provided by MWR professional trainers at every shore installation. Marine Corps Community Services (MCCS) is a comprehensive set of programs that support and enhance the operational readiness, war fighting capabilities, and life quality of Marines, their families, retirees and civilians. MCCS delivers goods and services at over 2,250 facilities with a staff of more than 12,000 employees worldwide.

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Succeed through Teamwork



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CHAPTER 4: SUCCEED THROUGH TEAMWORK

SECTION X: ALLIES AND PARTNERS

OVERVIEW

A dominant naval force is central to the effective execution of our strategic goals. We must be ready at all times to execute as one integrated naval force – Navy and Marine Corps seamlessly linked at every level – with common logistics, infrastructure, practices and support networks – executing a fleet-wide emphasis on resilient and combat ready forces. These integrated connections must extend beyond the DON as well, encompassing our vital partners across the joint force and the whole of government, as well as our industry partners, shipyards, and allies and partners around the world.

Figure 10.1 – Secure Maritime Advantage with Allies and Partners



As shown in Figure 10.1, the Navy and Marine Corps are engaged in joint, integrated operations around the globe, providing immediate response options, assuring allies and deterring our adversaries.

Working alongside our vital industry partners, we are aligning our efforts to produce the right platforms and capabilities for the warfighter, and ensure maximum availability and throughput from design to production to maintenance. We're working closely with our partners and suppliers in the defense industrial base to ensure the continued viability of the crucial businesses and infrastructure needed to ensure our ships, aircraft, and ground equipment are available when needed for the defense of our nation.

The strategic maritime defense partnerships we maintain today with our partners and allies extend the reach and power of our force.

INTERNATIONAL COOPERATION

International cooperation in exercises and operations is a critical aspect of building alliances and partnerships as emphasized in the interim National Security Strategy (NSS). Operating and exercising together with allies and partners, our fleet commanders will focus on full interoperability at the high end of naval warfare. We will build on existing maritime intelligence and logistics partnerships with allied nations, and expand relationships with partner nations to broaden and strengthen global maritime awareness and access.

Allies and partners are an enduring strategic advantage over rivals that would seek to undermine the free and open rules based order. They generate key capabilities, increase capacity, provide access to valuable strategic positions, and uphold the international system. Acting with unity of effort, like-minded-nations generate enormous power to modify malign behavior in the maritime domain.



We must prevail in day-to-day competition and be ready to win a potential war. In order to prepare for such situation, exercising and operating with partner nations provides the experience, knowledge, interoperability and knowledge of roles of each participate to meet expected and unanticipated challenges. From confronting and exposing malign

behavior to conflict, combined operations with allies and partners add capability, capacity and legitimacy to our collective efforts to deter and defeat aggressors.

We need to increase our emphasis on controlling the seas. We can no longer assume we will have unfettered access to the oceans. Every ally and partner can contribute to collective sea control and power projection efforts in ways ranging from providing all-domain fires, to contributing to maritime domain awareness. Knowledge of partner capabilities, as exhibited in exercises and operations, enable us to plan better and utilize available resources in the most efficient and effective manner.



The interim NSS prioritizes Indo-Pacific, Europe, and the Western Hemisphere. It indicates our alliances with NATO, Australia, Japan, and the Republic of Korea are America's greatest strategic assets and that the U.S. will work to deepen partnership with India and work alongside New Zealand, Singapore, Vietnam, and the Association of Southeast Asian Nations. The interim

NSS's focus on supporting a rules-based international system depends on allies and partners. Our efforts to engage and exercise with our allies and partners, particularly those in the U.S. Indo-Pacific Command region, is a major aspect of both relationship and capability building. The Navy is uniquely positioned to support interim NSS through its network of allies and partners to enforce international rules and norms at sea throughout the full spectrum of competition.

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CHAPTER 5: BUSINESS MANAGEMENT ENABLERS

SECTION XI: REVOLVING FUND

NAVY WORKING CAPITAL FUND (NCWF) OVERVIEW

The Navy Working Capital Fund (NWCF) is a revolving fund that finances DON activities, providing products and services on a reimbursable basis. Below are the NWCF business areas:

- Supply Management. Performs inventory oversight functions that result in the sale of aviation and shipboard components, ship's store stock, repairables, and consumables to a wide variety of customers.
- Depot Maintenance. Provides worldwide maintenance, engineering, and logistics support through mobilization, repair of aircraft, engines, components, and weapons systems, and the manufacture of parts and assemblies.
- Transportation. Provides over-ocean movement of supplies and provisions to deployed forces, and maintains prepositioned equipment and supplies.
- Research and Development. Supports weapons systems, facilities, and equipment for the air, land, sea, and space operating environments through development, engineering, acquisition, in-service support, and repair and maintenance.

Unlike for-profit commercial businesses, whose financial goal is to maximize profit, the NWCF activities' financial goal is to break even over the budget cycle. The NWCF provides stabilized pricing to customers and acts as a shock-absorber to fluctuations in market prices during the year of execution; fluctuations are recovered from customers in future years. The wide range of goods and services provided by NWCF activities are crucial to restoring readiness, improving lethality, and modernizing capability.

The FY 2022 NWCF budget request reflects the DON's continued focus on balancing demands to ensure the right blend of goods and services are provided at the right cost. This goal will also be supported by the NWCF's migration to one integrated enterprise resource planning (ERP) system and its pursuit of an unqualified audit opinion. The FY 2022 NWCF maintains a workforce of 81,968 civilian and 1,160 military personnel. The value of goods and services provided by NWCF activities in FY 2022 is projected to be approximately \$31.5 billion, as shown in Figure 11.1. The decrease of \$0.3 billion from FY 2021 to FY 2022 is primarily attributable to a decrease in obligation authority for

supply management that will better align the Navy's supply system with Secretary of Defense's priorities.

Figure 11.1 – Summary of NWCF Costs

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Operating Costs:			
Supply - Obligations	7,918	8,341	7,808
Depot Maintenance - Marine Ground & Aircraft	3,095	3,199	3,156
Transportation	3,464	3,294	3,404
Research and Development	16,020	16,760	17,141
Base Support	269	189	9
Total	30,766	31,783	31,518

CASH MANAGEMENT

The DON's goal is to maintain the overall NWCF cash balance within the upper and lower limits of the operational range. The operational range is determined using the established DoD guidance to analyze WCF activity rate of disbursements, range of operations, risk mitigation, and cash reserves to determine the acceptable upper and lower bounds for a healthy cash corpus. Bearing in mind the circumstances that led to the FY 2020 cash extremis situation, the DON continues to implement process improvements and exert management controls to operate within the operational limits. During FY 2021, the DON: (1) established a governance board comprised of senior leaders across the department in order to facilitate an end-to-end decision making process, drive policy modernization, and ensure the fund remains solvent; (2) secured authority to perform cash surcharges; (3) initiated a Department-wide overhaul of supply management practices and policies to improve pricing and cost recovery models; and (4) stood up a Supply Cash War Room to review supply contracts of long lead items and evaluate the return on investment relative to risk and anticipated need. The combined effect of these initiatives will drive institutional change and improved operations that directly benefit the Sailors, Marines, and other customers that rely on NWCF services. Moreover, the DON applied several management actions in FY 2022 to improve the NWCF cash balances to include a budgeted \$100.0 million surcharge in the operation and maintenance account as well as a request for \$150.0 million as a NWCF direct appropriation.

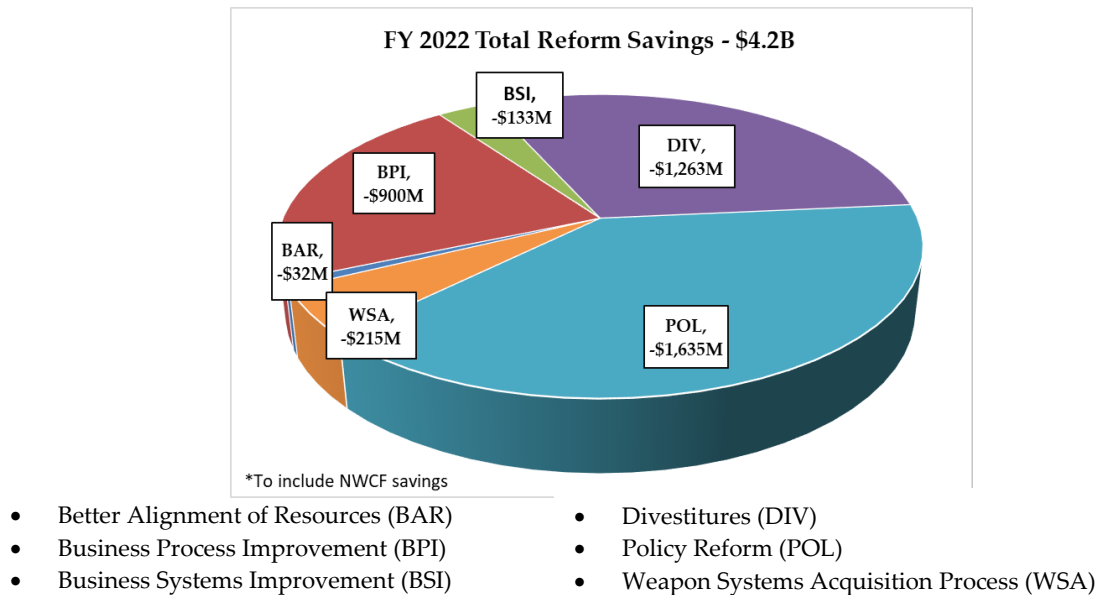
CHAPTER 5: BUSINESS MANAGEMENT ENABLERS

SECTION XII: REFORM AND AUDIT

REFORM

Successful implementation of the President’s interim *National Security Strategy* (NSS) in a constrained budgetary environment requires maximizing the use of every dollar. The DON has adopted a mindset of reform, prioritizing the funding of efforts aligned to strategic documents, at the expense of legacy systems and those programs less aligned with strategic direction. At the same time, the Department has actively sought out efficiencies in the conduct of daily operations in order to improve the tooth-to-tail ratio of naval power. We continued the practice of rigorously reviewing the Department’s budget, scrutinizing each line item’s net contribution to strategic direction through a Secretariat Strategic Review effort. This included prioritizing the allocation of dollars based on alignment to strategy, return on investment, relative value, portfolio optimization and specific outcome metrics. The continued use of data-driven process reforms like performance-to-plan have helped illuminate the highest leverage points and areas where we can accelerate learning. The DON achieved reform savings of \$4.2 billion in FY 2022. Figure 12.1 illustrates our reform efforts by category and dollar amount.

Figure 12.1: FY 2022 Budget Reform Savings



The DON has been tracking efficiencies and reform savings for many years. Figure 12.2 identifies reform savings since the FY 2012 budget in order to demonstrate trends over time as well as the impact of historic reform efforts to the current FY. Details of FY 2022 reforms are described in this section.

Figure 12.2: Summary of DON Efficiencies for the FY 2012 - FY 2022 Budgets (\$B)

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
FY12 PB: Efficiencies	-4.2	-5.4	-7.1	-8.5	-9.8						
FY13 PB: MDUR		-1.2	-1.9	-1.9	-2.3	-2.2					
FY13 PB: Other Efficiencies		-8.1	-11.4	-8.7	-10.2	-10.1					
FY14 PB: MDUR			-0.6	-1.7	-1.2	-1.6	-2.0				
FY15 PB: MDUR				-5.5	-4.7	-4.8	-5.3	-4.7			
FY16 PB: Efficiencies					-0.4	-0.4	-0.5	-0.3	-0.3		
FY17 PB: Efficiencies						-1.4	-1.2	-1.4	-1.5	-1.7	
FY18 PB: Efficiencies							-0.8	-0.7	-0.7	-0.9	-1.0
FY19 PB: Efficiencies								-1.5	-0.9	-1.0	-1.2
FY20 PB: Efficiencies									-2.0	-1.6	-1.7
FY21 PB: Efficiencies										-1.4	-1.3
FY22 DON: Efficiencies											-4.2
Total	-4.2	-14.6	-21.1	-26.4	-28.6	-20.4	-9.8	-8.6	-5.4	-6.8	-9.5

Better Alignment of Resources (BAR)

Financial Table	FY 2022
Savings (\$M)	(32)
Military (ES) Savings	(106)
Civilian (FTE) Savings	(14)

The Better Alignment of Resources category of reform includes reprioritizing or moving finances and personnel to realign from legacy capability in support of the interim NSS. The specific Better Alignment of Resources initiatives include:

- Naval Community College (NCC) Implementation. The DON rephased the implementation of the NCC, resulting in savings due to reduced throughput. NCC will provide educational opportunities for enlisted Sailors, Marines, and Coast Guardsmen to earn an associate's degree in a naval curriculum. (-\$17.8M)

- Terminate Program-Gun-Launched Guided Projectile. The DON terminated the Gun-Launched Guided Projectile Research and Development effort. Potential re-investment in the program will be reevaluated after an ongoing Strategic Capabilities Office demonstration effort in Terminal Defense Analysis is complete. (-\$5.9M)
- Eliminate CSG7 Staff. The DON eliminated the Commander, Submarine Group 7 staff due to a lack of operational taskings. This decision reverts the Navy back to nine CSG staffs. (-\$5.7M)

Business Process Improvements (BPI)

Financial Table	FY 2022
Savings (\$M)	(900)
Military (ES) Savings	(674)
Civilian (FTE) Savings	(931)

The Business Process Improvement category of reform includes refining actions, personnel, and timelines to increase effectiveness, efficiency, or reliability of the Department's goods and services. While continuing to scrutinize our operational force and capabilities, the DON is also pursuing efficiencies within our business processes which will drive the needed change to realize our reform goals. The specific Business Process Improvement initiatives include:

- Execution Reviews. In an effort to ensure the timely and appropriate execution of funds, the DON reviews the execution of its programs. When execution of funds is delayed due to cost, schedule, or performance issues, funds are reduced to meet established execution benchmarks. Accordingly, the following savings were recouped for under-execution:
 - Navy Under-Execution Review. This issue reduces FY 2022 requested funding for identified programs where FY 2020 execution has not met established procurement obligation benchmarks. (-\$349.1M)
 - Marine Corps Under-Execution Review. This issue reduces FY 2022 requested funding for the following Marine Corps programs: Marine Air Defense Integrated Systems, Force on Force Training Systems, Next Generation

Enterprise Network, where FY 2020 execution has not met established procurement obligation benchmarks. (- \$131.6M)

- Streamline NWCF Overhead. There are several initiatives to reduce the overhead at working capital fund activities. These include implementing administrative efficiencies through better use of organic resources and technology, reducing indirect personnel, and the transition of an installation activity to a new operating model across the labs. (-\$154.1M)
- Travel Reductions. Travel savings based upon FY 2020 execution. (-\$102.0M)
- Streamline Headquarters Functions. Reduction of Secretariat activities' administrative efforts achieves organizational efficiencies. (-\$62.4M)
- Streamline Support-Civilian Reductions. Reduces the resource management workforce by combining the installation and facilities commands financial staffs. (-\$34.3M)
- Eliminate Redundancy-Navy 311. Eliminates funding for Navy 311 Distance Support Program, a redundant telephone help service. (-\$7.7M)
- Future Readiness Cross-Functional Team Initiatives. Savings are achieved through process improvements in the naval aviation community, as well as reliability and maintainability improvements to components that drive high maintenance costs. Initiatives include establishing a fiber optic in-field repair capability, reverse-engineering sonobuoy rotary launcher redesign, addressing hybrid test station test bench obsolescence, and establishing organic repair capability for the ALQ-214(V)4/5 system. (-\$7.0M)
- Navy Depot Level Repairable (DLR) Procurement Consolidation. Based upon a pilot study, the Naval Supply Command demonstrated an overall cost decrease and an increase effectiveness and efficiency (with fewer personnel) by performing DLR procurement instead of the Defense Logistics Agency. (-\$4.9M)
- Shore Region Consolidation and Realignment. Savings due to the consolidation of Navy Regions Northwest/Southwest and Mid-Atlantic/Naval District Washington by reducing the number of shore regions from three to two. (-\$3.3M)

Business System Improvement (BSI)

Financial Table	FY 2022
Savings (\$M)	(133)
Military (ES) Savings	(32)
Civilian (FTE) Savings	(32)

The Business System Improvement category of reform includes modernizing and eliminating legacy business systems and processes to increase effectiveness and reduce duplication of the Department's IT business systems and deliver information at the speed of relevance. To support our business system improvement initiatives, the DON is also continually scrutinizing our business system capabilities with a focus on optimizing solutions that increase effectiveness, efficiency, and reliability. The specific Business System Improvement initiatives include:

- Navy Maritime Maintenance Enterprise Solution (NMMES-TR). Savings are due to the cancellation of the NMMES technical refresh of the Fleet IT maintenance processes and tools. (-\$126.5M)
- Terminate Legacy Business Systems. As a result of the DON's plan to streamline financial management systems and consolidate general ledger systems, several legacy systems are no longer required and are being shut down. (-\$5.5M)

Divestments (DIV)

Financial Table	FY 2022
Savings (\$M)	(1,263)
Military (ES) Savings	(2,417)
Civilian (FTE) Savings	(19)

The Divestment category of reform refers to the selling of equipment or weapon systems, or strategically discontinuing legacy acquisition programs to fund purchases in support of the Department's highest priorities. The DON continues to drive a data-centric, transparent, and outcome-oriented culture for fiscal responsibility during our budget build, focusing on valuation and prioritization of requirements to improve the allocation of resources. As part of our strategy, program deep dives are performed to better inform corporate decisions intended to maximize naval power. The DON

strategically discontinued legacy programs to retire less capable platforms, reduce costs, and realign funds to source higher priority efforts. The DON continues to scrutinize the portfolio and divest where appropriate to field the strongest balance of capabilities. The Divestment category of reform represents the DON's largest reform effort, consisting of the divestment of several legacy capabilities. The specific Divestment initiatives include:

- Ship Decommissionings. As a result of the ship inactivation decisions/ship disposition review (SID/SDR) process to codify components of the *30-Year Shipbuilding Plan*, savings were obtained by the accelerated decommissioning of several battle force ships, to include:
 - Decommission CG-66 and CG-68. Internal Navy guidance on the inactivation, retirement, and disposition of U.S. naval vessels governed the divestment strategy. Less-capable cruisers with ballistic missile defense only capability are being divested to fund more capable air defense commander (ADC) ships. There were several reasons that led to the decision to divest of these ships. First, divestment allows investment in higher priority capability and capacity. Second, divestment enables the Navy to fund other guided missile cruisers and prioritize the completion of critical modernization availabilities. Third, cruiser modernization costs have grown to 90 to 200 percent more than the initial programming estimates. Lastly, from an air and missile defense commander (AMDC) capability perspective, CG 66 would have likely returned from CG modification "late to need." Due to current delays in early CG modification ships greater than one year, the ship would likely not return to operational status until after the low-point inventory of AMDC capable ships. DDG Flight IIIs and selective service life extension of ADC cruisers will provide future needed ADC capability. Decommissions two Ticonderoga-class guided missile cruisers: USS Hue City (CG-66) and USS Anzio (CG-68). (-\$369.1M).
 - Decommission One Dock Landing Ship (LSD-41). Internal Navy guidance on the inactivation, retirement, and disposition of U.S. naval vessels governed the divestment strategy. This decision reduces amphibious fleet inventory by one in FY 2022. The purpose of this divestment is to reallocate legacy LSD force funding toward procurement of additional Future Naval Force Structure shipbuilding requirements for Light Amphibious Warships (LAW) to support the Navy's concept of Distributed Maritime Operations, and the *Commandant's Planning Guidance* and *Force Design 2030* initiatives. LPD-17 Flight IIs, supplemented by LAW are the replacement capability. (-\$200.3M)

- Decommission Four Littoral Combat Ships (LCS 3, 4, 7, and 9). Internal Navy guidance on the inactivation, retirement, and disposition of U.S. naval vessels was then followed. Reasons for divestment of these ships include that decommissioning LCSs 3 and 4, primarily test platforms, avoids the cost to upgrade these ships to the common configuration and capability with the rest of the fleet and allows for investments in higher priority capability and capacity. Also, LCSs 3 and 4 do not have mission packages (MP) assigned and the current MP procurement does not account for MP procurement for these two ships. Continued fleet operations would require purchasing an MP for each ship. The replacement capability is the FFG 62 Constellation class of ships. (-\$186.1M)
- Divest-Coastal Riverine Squadron Craft. The Navy divests of 12 MK VI Patrol Boats from coastal riverine squadrons. The Navy reallocated the associated end strength savings to higher priority Navy programs. The final deployment for the affected coastal riverine companies is scheduled to be complete by approximately the end of 2021. The MK VI requirement originated from a November 2007 Commander, U.S. Fifth Fleet urgent operational needs statement for a visit, board, search, and seizure overwatch platform in the littorals and the mission set was expanded to 2nd, 3rd and 7th Fleets and added maritime force protection, theater security cooperation, expeditionary MCM support, and intelligence collection tasks. Following divestment, these missions will be accomplished using other Navy platforms to include leveraging U.S. Coast Guard to escort high value units (HVU) (e.g., CVN, SSN, SSGN) in fleet concentration areas. (-\$74.0M)
- Accelerate Divestment of Navy F/A-18A-D. F/A-18 A-Ds were first scheduled for a phased divestment to be complete by FY 2024 as identified in the FY 2019 budget. The current budget request accelerates full divestment (55 aircraft) to FY 2022. The Navy accelerated Navy Reserve's transition from F/A-18A-D to F/A-18E/F scheduled to be complete by end of FY 2022 by recapitalizing legacy Hornet aircraft with Super Hornets. The Navy mitigates risk in the near term with expected transfer of F-16s to Navy from U.S. Air Force. This divestment reduces long-term support cost of older Type/Model/Series, while retaining adversary capacity, and Naval Aviation Warfighting Development Center testing capability using Block I Super Hornets. F/A-18 E/Fs, F-35C, F/A-XX will serve as replacement capability. (-\$95.2M)

- Accelerate Divestment of Broad Area Maritime Surveillance Demonstrator (BAMS-D). The divestment strategy from the FY 2021 budget originally scheduled BAMS-D to divest in FY 2023. The current budget accelerates this divestment by a year. This divestment removes resourcing from legacy, non-program of record and accelerates cost savings by moving divestment from FY 2023 to FY 2022. This decision allows for investment in higher priority capability and capacity. Replacement capabilities include P-8A Poseidon, MQ-4, and EP-3E operations extended by one year to maintain compliance with 2011 National Defense Authorization Act and subsequent Joint Requirements Oversight Council approved maritime intelligence, surveillance, reconnaissance, and targeting (IRS&T) transition plan. (-\$81.4M)
- Terminate Two Classified Programs. (-\$28.9M)
- Disestablish Dedicated Operational Test (OT) Squadrons. This initiative transfers OT planning and reporting functions to the Commander, Operational Test & Evaluation Force (COTF) and OT execution to fleet squadrons. Shifting aviation OT to a fleet execution model will reduce costs, shorten fielding timelines, and accelerate tactics development. Savings will be achieved primarily through reductions in the Military Personnel, Navy appropriation as well as reductions in contract values and flying hours. (-\$24.1M)
- Terminate Program-Advanced Sensor Application. Eliminates the Advanced Sensor Application Program due to a low return-on-investment. (-\$13.9M)
- Reduce DDG 1000 R&D/Procurement. Reduces FY 2022 Maritime Strike Tomahawk (MST) capability because FY 2021 funding for MST will carry over and finance other FY 2022 efforts in the program. (-\$11.2M)
- USMC Legacy Divestments. The future Fleet Marine Force (FMF) requires transformation from a legacy force to a modernized force with new organic capabilities. Decisions were made to divest of legacy capabilities that do not meet future requirements supported in strategic guidance. Major items include Mine Resistant Ambush Protected Vehicles, Light Armored Vehicle Reset, and M88A2 Hercules Vehicle Mod; as well as divesting of the legacy Training Counter Radio-Controlled Improvised Explosive Device – Electronic Warfare (CREW) system since it no longer meets training objectives. (-\$9.4M)

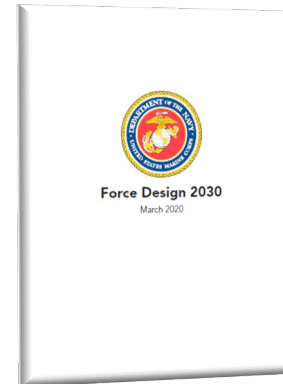
- Terminate Program-National Shipbuilding Research. This action eliminates the National Shipbuilding Research Program due to a low return-on-investment and no direct warfighting impact. Instead, the Navy will take advantage of other opportunities to develop areas that may be pursued to improve shipbuilding processes such as the Cross Platform Systems Development program and the Manufacturing Technology program. (-\$4.5M)

Policy Reform (POL)

Financial Table	FY 2022
Savings (\$M)	(1,635)
Military (ES) Savings	(5,602)
Civilian (FTE) Savings	(103)

The Policy category of reform represents changing the Department's procedures to best empower the warfighter with the knowledge, equipment, and support systems to fight and win.

- The FY 2022 budget incorporates key policy reforms for the Marine Corps based on the *Force Design 2030* strategy. With the shift in their primary focus to great power competition and a renewed focus on the Indo-Pacific region, the Marine Corps determined the current force had shortfalls in capabilities needed to support emerging joint, naval, and Marine Corps operating concepts. To cover the shortfalls, the Marine Corps embarked on a path to reduce certain existing capabilities and capacities to free resources for essential new capabilities. Marine Corps Force Design savings initiatives include:



- USMC Military Personnel Reduction. Although not 'coded' as divestment, the USMC divested 2,700 end strength as part of their divest-to-reallocate strategy to self-fund the Commandant's Force Design initiatives. These reductions are from tank and bridging companies, and law enforcement battalions. On the reserve side, USMC divested 1,700 personnel. These billets come from cutting

- tank and bridging companies and a Marine Unmanned Aerial Vehicle Squadron. (-\$512.9M)
- USMC Aviation Support Reduction. Aviation support cuts achievable due to use of modernized training, equipment, and support systems. (-\$397.1M)
 - USMC Ground Support Reduction. Ground support cuts achievable due to use of modernized equipment, and support systems. (-\$234.4M)
 - USMC Divest Enterprise Lifecycle Maintenance Program. Reductions in legacy depot maintenance equipment sets that are outdated. (-\$52.6M)
 - USMC Divest Rotational Forces. This initiative captures the realignment of excess resources from Marine Corps Forces South to Marine Forces Command due to the divestment of one Marine Rotational Force: Special Purpose Marine Air Ground Task Force Southern Command. The Marine Corps is adjusting its procedures for Marine Rotational forces to best position warfighters and their support systems to fight and win. (-\$3.0M)
 - Navy Total Force Manpower (TFM) Savings. An integrated TFM approach was utilized to review civilian personnel, military personnel, and contractors which increased the Navy's ability to drive best value decisions related to workforce needs. This approach will drive a culture of constant performance improvement that will result in improved organizational productivity. (-\$255.8M)
 - Reduce Permanent Change of Station (PCS) Moves. Savings are realized for PCS moves based on execution and policy changes. Additionally, the Navy will no longer issue travel advances (all Sailors may use a government credit card for PCS travel). (-\$28.0M)

Weapon System Acquisition Process (WSA)

Financial Table	FY 2022
Savings (\$M)	(215)
Military (ES) Savings	-
Civilian (FTE) Savings	-

The Weapon System Acquisition Process category of reform includes procuring and sustaining weapon systems differently to prioritize speed of delivery, continuous adaptation, and frequent modular upgrades. The DON has achieved savings and gained efficiencies through improved contracting and multi-year procurement efforts. Specific Weapon System Acquisition Process initiatives include:

- Contract Savings-F-35 Procurement. The negotiation of F-35C production lots 12-14 resulted in additional unit recurring flyaway savings (over last year's projected savings). (-\$75.4M)
- Advanced Helicopter Training System (AHTS). Program savings resulted from significant competition for the Advanced Helicopter Training System. (-\$71.4M)
- Acquisition Strategy Savings on CVN 79. This issue provides the reallocation of funding for more efficient ship construction and reduces risk in schedule. Additionally, reduces risk to the deployment-ready status of the Ford class aircraft carrier, USS John F. Kennedy (CVN 79), while providing opportunity to reduce post-delivery costs. (-\$67.8M)

The Department is committed to meeting the priorities of the NDS for lethality, readiness, and advanced technologies through the continual pursuit of ongoing reform.

AUDIT BUSINESS TRANSFORMATION

One of the three strategic thrusts called for in the NDS is reforming the Defense Department's business practices for greater performance and affordability. The NDS states: "Better management begins with effective financial stewardship. The Department will continue its plan to achieve full auditability of all its operations, improving its final process, systems, and tools to understand, manage, and improve cost."

A DON *Audit Roadmap* has been developed, which is our tactical framework that identifies key milestones for each priority area, targets resources for maximum impact, helps manage risk, and delineates a clear path to a clean opinion.

The Navy and Marine Corps have benefitted greatly from audit, and our team is aggressively working to remediate the root causes of the discrepancies found by our auditors. Auditor findings highlight opportunities for operational and process improvements, and we are capitalizing on them. The leadership of the Navy and Marine Corps embrace the lessons learned from the audit as a means of improving our warfighting capability and readiness and demonstrating excellence. We are collectively making progress to address the auditors' findings and supporting the USMC's goal of attaining a positive opinion next year.

By complying with generally accepted accounting principles (GAAP), which must be in place to receive a favorable audit opinion, business managers will become increasingly accountable stewards of public funds, and able to show a receipt for every taxpayer dollar spent. In addition, GAAP compliance will result in additional efficiencies and drive down the cost of business operations.

Leaders at every echelon are taking responsibility for ensuring that strengthened internal controls over business processes and systems are in place. The primary spoke in the DON's auditability strategy is reforming the Department's business systems environment. Initiatives are underway to consolidate and reduce the number of accounting systems used; to expand the capabilities of the target finance, accounting, and logistics Enterprise Resource Planning system; and to strengthen the key internal controls governing business processes, including entity level monitoring, financial management, and business systems (e.g., security, access, and interface controls). The number of business systems feeding transactions to the accounting systems will also

be reduced, eliminating redundancy, increasing standardization, and improving network security.

These actions, in addition to business process improvements, will require an investment in resources to complete them. For audit remediation alone, we have budgeted \$159.7 million in FY 2021. This investment will yield dividends – ultimately resulting in a favorable opinion on yearly financial statement audits, but the most beneficial return on investment will be greater data accuracy and transparency for decision-makers when public funds are spent. This will boost confidence that taxpayers and Congress have in the Department as its managers spend dollars in support of warfighters.

AUDITABILITY PROGRESS

In FY 2020, the Navy and Marine Corps completed their third and fourth full-scope financial statement audits respectively, making significant progress towards auditability. Results highlighted specific deficiencies in systems and processes directly impacting readiness, allowing the DON to target root causes. The audit is more than a financial tool: it is a management tool forcing DON to evaluate how effective our collective team is in both small and large ways.

To prioritize remediation of the audit deficiencies, the DON has developed an *Audit Roadmap* to drive toward a clean opinion by FY 2027. In FY 2020, we developed the *Audit Roadmap* Dashboard and Integrated Master Schedule (IMS) which provides an integrated, comprehensive plan to help the DON achieve a clean audit opinion. We are executing against the *Audit Roadmap* to integrate system improvements and consolidation efforts with budgetary reform and business process transformation. The plan identifies and tracks dependencies and is monitoring to identify risks and mitigation approaches to ensure a uniform message across the enterprise, and simplify reporting and tracking of progress. In executing against the *Audit Roadmap*, the Navy surmounted the obstacles presented by the COVID-19 pandemic to successfully downgrade two material weaknesses in FY 2020: contingent legal liabilities and contract authority.

In FY 2021, the DON will continue executing against the *Audit Roadmap* in the following areas:

- Accounting and Business Systems Consolidation – Continue development of a business systems architecture and re-engineering of business processes to guide information technology modernizations. Reduce the total unclassified accounting systems footprint to enhance transparency of data across the enterprise, enhance efficiency, and strengthen controls.
- Financial Reporting/Fund Balance with Treasury – Streamline the financial statement preparation process, fixing process and system deficiencies that create adjustments to our financial statements, and implement analytical capabilities, improving governance and oversight at the DON level. Streamline business processes and deploy system capability to reconcile the DON's financial records to the Treasury's and transition to Treasury shared services for payment and collection operations.
- Inventory and Operating Materials and Supplies (OM&S) – Clarify and re-engineer supply chain management business processes to have 100 percent accountability of inventory and OM&S. Establish baseline and go-forward valuation for uninstalled aircraft engines.
- Real Property – Implement controls over recording acquisitions, disposals, and construction in progress costs in the accountable property system of record and financial reporting processes. Correct utilities records by conducting a wall-to-wall count of utility assets and segments.
- Budgetary Reform – Continue refinements and improve discipline in DON's funds receipt and distribution process and intra-governmental transactions. Deploy obligation monitoring tool enabling top-down oversight and monitoring of budgetary execution against plan.
- Information Technology General Controls – Accelerate remediation efforts over access, interface, configuration, and security control deficiencies to strengthen the resilience and integrity of our systems, especially our end-state accounting systems and associated data via enterprise-wide strategies and solutions across business processes.
- Contractor-Held Property – Improve accountability and reporting of contractor-held property, including establishing inventory reporting requirements and monitoring controls. This effort will first focus on Trident

missiles, ordnance, and Working Capital Fund inventory, establishing a baseline in FY 2021.

- Environmental and Disposal Liabilities – Establish a complete list of environmental and disposal liabilities, establish controls, and publish and enforce policy to ensure liability estimates are complete and accurate.
- USMC Audit Opinion – Pursue an audit opinion in FY 2021 by addressing five primary material weaknesses: availability to provide complete, timely, and sufficient evidence; financial reporting and analysis; fund balance with Treasury; accounting for property, plant, and equipment; and accounting for operating materials and supplies.

The Navy-Marine Corps team is meeting these challenges head-on with full awareness that financial audit readiness will not be a one-time achievement – rather, it will be marked by a progressively changing business environment in which improvements will be incorporated into permanent work processes throughout FY 2021. The DON is committed to promoting a business culture in which all participants understand their respective roles in achieving and sustaining financial auditability, from senior leaders down to the business managers who support our warfighting team each day. The result will be strengthened stewardship of public funds, institutionalized by performing effective internal controls over business processes and systems, and by making business policies and procedures more prescriptive and compliant with accounting standards.

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APPROPRIATION TABLES

MILITARY PERSONNEL, NAVY (MPN)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Pay and Allowances of Officers	8,718	9,232	9,569
Pay and Allowances of Enlisted	20,782	22,341	23,357
Pay and Allowances of Midshipmen	91	87	96
Subsistence of Enlisted Personnel	1,275	1,351	1,363
Permanent Change of Station Travel	883	1,002	996
Other Military Personnel Costs	117	100	117
Total MPN	31,866	34,113	35,497

MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTION, NAVY (DHAN)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Health Accrual	1,550	1,673	1,888

RESERVE PERSONNEL, NAVY (RPN)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Reserve Component Training and Support	2,007	2,212	2,317

MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTION, NAVY RESERVE (DHANR)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Health Accrual	137	146	160

MILITARY PERSONNEL, MARINE CORPS (MPMC)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Pay and Allowances of Officers	3,125	3,331	3,381
Pay and Allowances of Enlisted	9,543	10,104	10,089
Subsistence of Enlisted Personnel	776	772	770
Permanent Change of Station Travel	438	437	449
Other Military Personnel Costs	63	32	61
Total MPMC	13,945	14,676	14,748

MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTION, MARINE CORPS (DHAMC)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Health Accrual	860	905	993

RESERVE PERSONNEL, MARINE CORPS (RPMC)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Reserve Component Training and Support	740	846	882

MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTION, MARINE CORPS RESERVE (DHAMCR)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Health Accrual	77	82	86

OPERATION AND MAINTENANCE, NAVY (O&MN)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Operating Forces:			
Air Operations	11,807	12,052	13,190
Ship Operations	18,761	18,645	19,501
Combat Operations/Support	6,029	6,201	6,404
Weapons Support	3,325	3,465	3,607
Base Support	9,834	9,400	8,523
Total Operating Forces	49,756	49,763	51,225
Mobilization:			
Ready Reserve and Prepositioning Forces	1,003	1,190	1,103
Activations/Inactivations	386	288	354
Mobilization Preparedness	95	145	170
Total Mobilization	1,484	1,622	1,626
Training and Recruiting:			
Accession Training	361	353	354
Basic Skills and Advanced Training	1,392	1,572	1,671
Recruiting & Other Training and Education	446	416	451
Total Training and Recruiting	2,199	2,340	2,476
Administration and Servicewide Support:			
Servicewide Support	1,672	2,100	2,330
Logistics Operations and Technical Support	1,720	1,491	1,438
Investigations and Security Programs	1,328	1,349	1,346
Cancelled Activities	29	-	-
Spectrum/Telecommunications	15	-	-
Total Administration and Servicewide Support	4,764	4,940	5,114
Total O&MN	58,203	58,666	60,441

OPERATION AND MAINTENANCE, MARINE CORPS (O&MMC)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Operating Forces:			
Expeditionary Forces	3,439	3,251	3,336
USMC Prepositioning	100	102	108
Combatant Commander Direct Mission Support	203	220	233
Base Support	4,441	3,345	3,784
Total Operating Forces	8,183	6,917	7,462
Training and Recruiting:			
Accession Training	24	22	26
Basic Skills and Advanced Training	601	604	663
Recruiting & Other Training and Education	293	277	299
Total Training & Recruiting	918	903	988
Administration and Servicewide Support:			
Servicewide Support	543	551	575
Cancelled Activities	1	-	-
Spectrum/Telecommunications	3	-	-
Total Administration and Servicewide Support	547	551	575
Total O&MMC	9,649	8,371	9,025

ENVIRONMENTAL RESTORATION, NAVY (ERN)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Environmental Restoration Activities	-	421	298

OPERATION AND MAINTENANCE, NAVY RESERVE (O&MNR)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Operating Forces:			
Air Operations	782	757	803
Ship Operations	1	-	-
Combat Operations/Support	155	155	156
Base Support	173	182	173
Total Operating Forces	1,110	1,094	1,131
Administration and Servicewide Support:			
Servicewide Support	12	17	14
Logistics Operations and Technical Support	1	3	3
Cancelled Activities	0	-	-
Total Administration and Servicewide Support	14	20	17
Total O&MNR	1,123	1,114	1,149

OPERATION AND MAINTENANCE, MARINE CORPS RESERVE (O&MMCR)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Operating Forces:			
Expeditionary Forces	135	128	119
Base Support	152	151	152
Total Operating Forces	287	279	271
Administration and Servicewide Support:			
Servicewide Support	9	13	14
Total Administration and Servicewide Support	9	13	14
Total O&MMCR	295	292	285

SHIPBUILDING AND CONVERSION, NAVY (SCN)

<i>(Dollars in Millions)</i>	FY 2020		FY 2021		FY 2022	
	QTY	\$	QTY	\$	QTY	\$
New Construction:						
Columbia Class Submarine	-	1,821	1	4,122	-	4,647
CVN 78	1	2,277	-	2,565	-	2,368
SSN 774	2	8,335	2	6,776	2	6,370
DDG 51	3	5,809	2	3,379	1	2,017
DDG 1000	-	156	-	78	-	57
FFG	1	1,281	1	1,053	1	1,157
LHA	-	-	-	500	-	69
LPD Flight II	-	524	1	1,128	-	61
Expeditionary Fast Transport	-	-	1	260	-	-
Expeditionary Sea Base	-	-	-	73	-	-
T-AO 205	2	1,054	-	20	1	744
T-AGOS Surtass Ship	-	-	-	-	1	434
T-ATS	2	150	2	158	2	184
Total New Construction	11	21,407	10	20,113	8	18,107
Other:						
CVN RCOH	1	652	-	1,549	-	2,522
LCU 1700	4	84	5	87	4	68
LCAC SLEP	-	-	3	56	2	33
Outfitting/Post Delivery	-	696	-	752	-	656
Ship to Shore Connector	1	65	-	-	2	157
Service Craft	-	56	-	244	-	68
Sealift (used)	-	-	2	60	5	300
Completion of PY Shipbuilding Programs	-	105	-	407	-	661
Total Other	6	1,657	10	3,156	13	4,464
Total SCN	17	23,064	20	23,269	21	22,571

AIRCRAFT PROCUREMENT, NAVY (APN)

<i>(Dollars in Millions)</i>	FY 2020		FY 2021		FY 2022	
	QTY	\$	QTY	\$	QTY	\$
Combat Aircraft:						
CH-53K (Heavy Lift)	6	1,063	9	1,309	9	1,469
E-2D AHE	6	1,260	5	909	5	885
FA-18E/F	24	1,762	24	1,725	-	88
F-35C Carrier Variant	20	2,453	26	3,101	20	2,358
F-35B STOVL Variant	14	1,966	10	1,476	17	2,474
MH-60R	-	1	-	-	-	-
P-8A Poseidon	8	1,488	9	1,575	-	45
UH-1Y/AH-1Z	-	35	-	4	-	1
V-22 (Medium Lift)	12	1,109	13	1,277	8	752
Total Combat Aircraft	90	11,137	96	11,376	59	8,070
Trainer Aircraft:						
TH-73A	32	237	36	186	36	163
Other Aircraft:						
F-5	22	40	-	-	-	-
KC-130J	3	307	5	443	6	589
MQ-25	-	-	-	-	-	47
MQ-4 TRITON	2	456	1	251	-	160
MQ-8 UAV	-	45	-	35	-	49
MQ-9A Reaper	2	56	-	-	-	-
STUASLO	-	41	-	38	-	13
VH-92A Executive Helo	6	641	5	578	-	-
Other Support Aircraft	1	14	-	-	-	-
MALE-T	-	-	-	-	6	234
E-6B	-	-	1	16	-	-
Total Other Aircraft	36	1,600	12	1,360	12	1,093
Modification of Aircraft	-	3,368	-	3,620	-	3,878
A/C Spares & Repair Parts	-	2,169	-	2,197	-	2,339
A/C Support Equip & Facilities	-	650	-	774	-	933
Total APN	158	19,160	144	19,513	107	16,477

WEAPONS PROCUREMENT, NAVY (WPN)

<i>(Dollars in Millions)</i>	FY 2020		FY 2021		FY 2022	
	QTY	\$	QTY	\$	QTY	\$
Ballistics and Other Missile:						
TRIDENT II Mods	-	1,166	-	1,161	-	1,144
Evolved Sea Sparrow Missile (ESSM)	50	101	99	213	108	249
Tomahawk	90	217	122	225	60	125
Tomahawk Mods	156	169	327	144	495	206
AMRAAM	183	212	122	204	-	-
Sidewinder	402	149	294	114	178	86
Standard Missile	125	502	125	489	125	567
Rolling Airframe Missile (RAM)	120	107	100	91	100	93
Aerial Targets	-	151	-	168	-	150
Joint Air Ground Missile (JAGM)	307	76	150	44	164	50
LRASM	17	73	43	134	48	161
JASSM	-	-	-	-	25	37
AARGM	246	184	103	124	54	116
Harpoon Mods	49	24	-	-	-	-
Small Diameter Bomb (SDB II)	482	108	248	58	180	41
Naval Strike Missile (NSM)	18	42	15	32	34	59
Hellfire	29	2	95	6	120	8
Drones and Decoys	-	-	12	20	18	30
Ordnance Support Equipment	-	86	-	199	-	192
Total Ballistics and Other Missile	2,274	3,368	1,855	3,424	1,709	3,314
Torpedo & Related Equipment:						
MK-48 Torpedo	71	130	105	277	58	159
MK-54 Torpedo Mods	73	104	69	103	91	106
MK-48 Torpedo ADCAP Mods	54	40	34	56	30	36
Torpedo Support Equipment	-	68	-	94	-	93
Total Torpedo & Related Equipment	198	342	208	530	179	394
Other Weapons:						
Close-In Wpns Sys (CIWS) Mods	-	40	-	41	-	6
Gun Mount Mods	-	63	-	102	-	69
LCS Module Weapons	90	11	32	4	14	2
Other	-	186	-	240	-	272
Total Other Weapons	90	300	32	387	14	349
Spares and Repair Parts	-	125	-	142	-	162
Total WPN	2,562	4,134	2,095	4,483	1,902	4,220

Note: Quantities include modifications

PROCUREMENT, MARINE CORPS (PMC)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Weapons and Combat Vehicles:			
AAV7A1 PIP	39	87	37
Amphibious Combat Vehicle Family of Vehicles	301	437	532
LAV PIP	61	37	23
Modification Kits	23	-	-
155MM Ltwt Towed Howitzer	21	0	0
Artillery Weapons System	96	50	68
Other	32	38	35
Total Weapons and Combat Vehicles	573	650	696
Guided Missiles and Equipment:			
Ground Based Air Defense (GBAD)	148	18	9
Anti-Armor Missile-Javelin	20	20	1
Family Anti-Armor Weapon Systems (FOAAWS)	22	22	20
Anti-Armor Missile-TOW	61	34	14
Guided MLRS Rocket (GMLRS)	45	151	98
Total Guided Missiles and Equipment	295	244	143
Communication and Electronic Equipment:			
Radio Systems	210	340	469
Ground/Air Task Oriented Radar (G/ATOR)	276	277	297
Next Generation Enterprise Service	96	72	97
Items under \$5 million (Comm & Elec)	80	70	65
Intelligence Support Equipment	67	59	67
Cyberspace Activities	28	44	25
Comm & Elec Infrastructure Supt	72	44	111
Comm Switching & Control Systems	24	31	50
Distributed Common Ground System (DCGS-MC)	26	38	29
Common Computer Resources	48	33	84
Common Aviation Command and Control System (CAC2S)	31	35	18
Other	247	122	161
Total Communication and Electronic Equipment	1,203	1,163	1,473
Support Vehicles:			
Commercial Cargo Vehicles	29	22	18
Motor Transport Modifications	20	27	23
Joint Light Tactical Vehicle	556	369	322
Other	25	3	10
Total Support Vehicles	629	421	373
Engineer and Other Equipment	267	191	325
Spares and Repair Parts	34	27	33
Total PMC	3,001	2,696	3,043

**PROCUREMENT OF AMMUNITION, NAVY AND MARINE CORPS
(PANMC)**

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Navy Ammunition	565	578	561
Marine Corps Ammunition	475	292	427
Total PANMC	1,040	869	988

OTHER PROCUREMENT, NAVY (OPN)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Ship Support Equipment	3,593	3,785	4,068
Communications and Electronics Equipment	3,449	3,446	3,406
Aviation Support Equipment	723	767	731
Ordnance Support Equipment	1,051	1,097	1,079
Civil Engineering Support Equipment	177	134	154
Supply Support Equipment	640	693	691
Personnel and Command Support Equipment	625	575	324
Spares and Repair Parts	367	358	424
Total OPN	10,624	10,854	10,876

**RESEARCH, DEVELOPMENT, TEST AND EVALUATION, NAVY
(RDT&E,N)**

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Basic Research	634	650	602
Applied Research	1,130	1,179	976
Advanced Technology Development	811	836	778
Advanced Component Development	5,199	5,530	7,078
System Development and Demonstration	6,042	5,876	5,910
RDT&E Management Support	1,648	981	999
Operational Systems Development	5,121	5,062	5,313
Software Pilot	-	25	984
Total RDT&E,N	20,585	20,138	22,639
By Service:			
Navy	18,074	17,600	19,880
Marine Corps	2,512	2,538	2,759

**MILITARY CONSTRUCTION, NAVY AND MARINE CORPS
ACTIVE AND RESERVE (MCN, MCNR)**

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Significant Programs:			
Major Construction	6,021	1,618	1,949
Minor Construction	81	39	56
Planning and Design	328	280	363
Total MCN	6,431	1,936	2,368
Navy Reserve Military Construction:			
Major Construction	25	65	63
Minor Construction	25	3	2
Planning and Design	5	3	6
Total MCNR	55	71	72
By Service:			
Navy	4,079	1,208	1,307
Marine Corps	2,407	799	1,133

FAMILY HOUSING, NAVY AND MARINE CORPS (FHCON, FHOPS)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Navy:			
Construction (Incl P&D)	28	40	65
O&M	293	314	306
Total Navy FHCON, FHOPS	321	354	371
Marine Corps:			
Construction (Incl P&D)	20	3	13
O&M	40	53	51
Total Marine Corps FHCON, FHOPS	60	55	63
Total FHCON, FHOPS	381	409	435

BASE REALIGNMENT AND CLOSURE ACCOUNTS (BRAC)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Consolidated Prior BRAC	125	205	111

NAVY WORKING CAPITAL FUND (NWCF)

<i>(Dollars in Millions)</i>	FY 2020	FY 2021	FY 2022
Supply Management, Navy	-	-	150
Depot Maintenance - Aviation	39	-	-
Base Support	0	-	-
Research and Development Activities	79	-	-
Total NWCF	119	-	150

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LIST OF ACRONYMS

A

A2/AD - Anti-Access/Area-Denial
AA - Assault Amphibious
AABoD - Accelerated Acquisition Board of Directors
AAG - Advanced Arresting Gear
AARGM - Advanced Anti-Radiation Guided Munition
AARGM-ER - Advanced Anti-Radiation Guided Munition – Extended Range
AAV - Assault Amphibious Vehicle
AC - Active Component
ACAT - Acquisition Category
ACD&P - Advanced Component Development & Prototypes
ACV - Amphibious Combat Vehicle
ACV-C - Amphibious Combat Vehicle – Command and Control
ACV-P - Amphibious Combat Vehicle - Personnel Carrier
ACV-R - Amphibious Combat Vehicle - Tactical Recovery
AEA - Airborne Electronic Attack
AFRICOM - U.S Africa Command
AFSB - Afloat Forward Staging Base
AHTS - Advanced Helicopter Training System
AMRAAM - Advanced Medium Range Air-to-Air Missile
AMCM - Airborne Mine Countermeasures
AMDR - Air and Missile Defense Radar
AOG - Aircraft on the Ground
AoA - Analysis of Alternatives
AOR - Area of Responsibility
AP - Advance Procurement
APKWS - Advanced Precision Kill Weapon System
ARG - Amphibious Ready Group
ARG/MEU - Amphibious Ready Group / Marine Expeditionary Unit
ARV - Advanced Reconnaissance Vehicle
AS - Submarine Tenders
ASAP - Advanced Sensor Application Program
ASW - Anti-Submarine Warfare

ATD - Advance Technology Development
AT/FP - Anti-Terrorism/Force Protection
ATSP - Advanced Technology Support Program
AUR - All Up Round
AUWS - Assessment Under Water Work System
AV - Air Vehicles
AVPLAN - Aviation Plan
AWS - Aegis Weapon System

B

BA - Budget Authority
BAMS-D - Broad Area Maritime Surveillance Demonstrator
BAR - Better Alignment of Resources
BMD - Ballistic Missile Defense
BOS - Base Operating Support
BPI - Business Process Improvements
BRAC - Base Realignment and Closure
BRS - Blended Retirement System
BSI - Business Systems Improvement
BSO - Budget Submitting Office

C

C2 - Command and Control
C4 - Command, Control, Communication, and Computers
C4I - Command, Control, Communication, Computers, and Intelligence
C-HGB - Common Hypersonic Glide Body
C-ISR - Counter-Intelligence, Surveillance and Reconnaissance
C-UAS - Counter-Unmanned Aircraft System
CAINS - Carrier Aircraft Inertial Navigation System
CANES - Consolidated Afloat Networks and Enterprise Services
CAOCL - Center for Advanced Operational Culture Learning
CAPE - Cost Assessment and Program Evaluation
CATM - Captive Air Training Missile
CBARS - Carrier Based Aerial Refueling System
CBM - Condition Based Maintenance
CCDR - Combatant Commander

<i>CCMD - Combatant Command</i>	<i>EABO - Expeditionary Advanced Base Operations</i>
<i>CDD - Capabilities Development Documentation</i>	<i>EC - Environmental Compliance</i>
<i>CEC - Cooperative Engagement Capability</i>	<i>ECC - Emergency Control Center</i>
<i>CENTCOM - U.S. Central Command</i>	<i>ECP - Engineering Change Proposal</i>
<i>CG - Guided Missile Cruiser</i>	<i>EDI - European Deterrence Initiative</i>
<i>CLO - Combat Loadout</i>	<i>EDM - Engineering Development Model</i>
<i>CMC - Commandant of the Marine Corps</i>	<i>ELMP - Enterprise Lifecycle Maintenance Program</i>
<i>CNIC - Commander, Navy Installations Command</i>	<i>EMALS - Electromagnetic Aircraft Launch System</i>
<i>CNO - Chief of Naval Operations</i>	<i>EOD - Explosive Ordnance Disposal</i>
<i>COCOM - Combatant Command</i>	<i>EOQ - Economic Order Quantity</i>
<i>COD - Carrier Onboard Delivery</i>	<i>EPF - Expeditionary Fast Transport</i>
<i>COMSEC - Communications Security</i>	<i>EMD - Engineering and Manufacturing Development</i>
<i>CONOPS - Concept of Operations</i>	<i>EPS - Electronic Procurement System</i>
<i>CONUS - Continental U.S.</i>	<i>ER - Extended Range</i>
<i>COTF - Commander, Operational Test & Evaluation Force</i>	<i>ERN - Environmental Restoration, Navy</i>
<i>COTS - Commercial-Off-The-Shelf</i>	<i>ERP - Enterprise Resource Planning</i>
<i>COVID-19 - Coronavirus 2019</i>	<i>ES - End Strength</i>
<i>CoW - Cost of War</i>	<i>ESB - Expeditionary Sea Base</i>
<i>CPG - Commandant's Planning Guidance</i>	<i>ESG - Expeditionary Strike Groups</i>
<i>CPS - Conventional Prompt Strike</i>	<i>ESSM - Evolved Sea Sparrow Missile</i>
<i>CREW - Counter Radio-Controlled Improvised Explosive Device - Electronic Warfare</i>	<i>EUCOM - U.S. European Command</i>
<i>CSG - Carrier Strike Groups</i>	<i>EW - Electronic Warfare</i>
<i>CVN - Nuclear Aircraft Carrier</i>	<i>EXWC - Engineering and Expeditionary Warfare Center</i>
<i>CVW - Carrier Air Wing</i>	
<i>CWO - Chief Warrant Officer</i>	
D	F
<i>DDCIO - Deputy Department of the Navy Chief Information Officer</i>	<i>F3R - Form Fit Function Refresh Program</i>
<i>DDG - Guided Missile Destroyer</i>	<i>FEC - Facilities Engineering Command</i>
<i>DDG(X) - Next-Generation Large Surface Combatant</i>	<i>FERS - Federal Employees Retirement System</i>
<i>DIV - Divestitures</i>	<i>FFG - Guided Missile Frigate</i>
<i>DLA - Defense Logistics Agency</i>	<i>FFRDC - Federally Funded Research and Development Centers</i>
<i>DLR - Depot Level Repairable</i>	<i>FHP - Flying Hour Program</i>
<i>DMO - Distributed Maritime Operations</i>	<i>FIAC - Fast Inshore Attack Craft</i>
<i>DoD - Department of Defense</i>	<i>FLC - Fleet Logistics Center</i>
<i>DON - Department of the Navy</i>	<i>FM - Financial Management</i>
<i>DPRI - Guam</i>	<i>FMB - Navy Budget Office</i>
<i>DRI - Depot Readiness Initiative</i>	<i>FMF - Fleet Marine Force</i>
<i>DSG - Defense Strategic Guidance</i>	<i>FMS - Foreign Military Sales</i>
	<i>FOC - Full Operational Capability</i>
E	<i>FOD - Foreign Object Damage</i>
<i>EA - Electronic Attack</i>	<i>FOS - Full Operating Status</i>
	<i>FoV - Family of Vehicles</i>
	<i>FRC - Fleet Readiness Center</i>

FRC-FT - Future Readiness Cross-Functional Team
FRP - Full Rate Production
FRTTP - Fleet Response Training Plan
FSC - Future Surface Combatant
FSRM - Facility Sustainment, Restoration, and Modernization
FSST - Full Ship Shock Trials
FTE - Full-Time Equivalent
FUSL - Full Up System Level Test
FY - Fiscal Year
FYDP - Future Years Defense Program
FX - Facilities Services

G

GAAP - Generally Accepted Accounting Principles
G/ATOR - Ground/Air Task-Oriented Radar
GBAD - Ground Based Air Defense
GBAD/C-UAS - Ground Based Air Defense/Counter-Unmanned Aerial System
GBAD/FWS - Ground Based Air Defense - Future Weapon System
GBASM - Ground Based Anti-Ship Missile
GCS - Guidance and Control Section
GCV - Ground Combat Vehicle
GF - General Fund
GLGP - Gun-Launched Guided Projectile
GOTS - Government-off-the-Shelf

H

HADR - Humanitarian Assistance and Disaster Relief
HARM - High-Speed Anti-Radiation Missile
HEL - High Energy Laser
HIMARS - High Mobility Artillery Rocket System
HM&E - Hull, Mechanical, and Electrical
HMMWV - High-Mobility Multi-Wheeled Vehicle
HR - Human Resource
HW - Hazardous Waste

I

IA - Individual Augmentee
IED - Improvised Explosive Device
ICD - Initial Capabilities Document

iDS - integrated Digital Shipbuilding
IED - Improvised Explosive Device
IFC - Integrated Functional Capability
IFC 4.0 - Integrated Functional Capability-4
ILS - Integrated Logistics Support
IMA - Individual Mobilization Augmentee
IMUTS - Inertial Measurement Unit Test Station
INFSA - Integrated Naval Force Structure Assessment
INS - Inertial Navigation System
IOC - Initial Operational Capability
IOT&E - Initial Operational Test & Evaluation
IPA - Independent Public Accounting
IPE - Industrial Plant Equipment
IPP - Invoice Processing Platform
IRAD - Internal Research and Development
IR - Infrared
IRR - Infrared Receiver
IRST - Infrared Search and Track
ISIL - Islamic State of Iraq and the Levant
ISR - Intelligence, Surveillance, and Reconnaissance
IT - Information Technology
IUSS - Integrated Undersea Surveillance System
IW - Information Warfare

J

JAGM - Joint Air-to-Ground Missile
JASSM - Joint Air-to-Surface Standoff Missile
JASSM-ER - Joint Air-to-Surface Standoff Missile - Extended Range
JHSV - Joint High-Speed Vessel
JLTV - Joint Light Tactical Vehicle
JMPS-E - Joint Mission Planning System - Expeditionary
JPATS - Joint Primary Aircraft Training System
JRB - Joint Reserve Base
JSF - Joint Strike Fighter
JSOW - Joint Standoff Weapon

L

LAAD - Low Altitude Air Defense
LARK-V - Lighter Amphibious Resupply Cargo Vessel
LAV - Light Armored Vehicle
LAV-ATM - LAV Anti-Tank Modernization
LAW - Light Amphibious Warship

LCAC - Landing Craft Air Cushion
LCC - Amphibious Command Ship
LCS - Littoral Combat Ship
LCS-SSMM - Littoral Combat Ship Surface-to-Surface Missile Module
LCU - Landing Craft Utility
LDO - Limited Duty Officer
LHA - Landing Helicopter Assault Amphibious
LHD - Amphibious Assault Ship
LMSR - Large, Medium Speed Roll-On/Roll-Off Ships
LOC - Limited Operational Capability
LOCE - Littoral Operations in a Contested Environment
LPD - Amphibious Transport Dock Ship
LRASM - Long-Range Anti-Ship Missile
LRIP - Low-Rate Initial Production
LRS - Line-of-Sight Radio Systems
LSD - Dock Landing Ship
LUSV - Large Unmanned Surface Vessels
LVC - Live, Virtual Constructive
LWT - Lightweight Torpedo
LX(R) - Amphibious Ship Replacement

M

MADIS - Marine Air Defense Integrated System
MADS-K - Man-Portable Anti-Drone Defeat System Kit
MAGTF - Marine Air-Ground Task Force
MALD - Miniature Air Launched Decoy
MALE-T - Medium Altitude Long Endurance – Tactical
ManTech - Manufacturing Technology
MAR-E - Marine Rotational Force – Europe
MARFORCOM - Marine Forces Command
MARFORCYBER - Marine Corps Forces Cyberspace Command
MARFORSOUTH - Marine Corps Forces South
MARSOC - Marine Corps Forces Special Operations Command
MASTT - Mobile Anti-Submarine Warfare Training Target
MAW - Marine Aircraft Wing
MCAS - Marine Corps Air Station
MCB - Marine Corps Base
MCF 2025 - Marine Corps Force 2025
MCHH - Mutli-Channel Hand Held

MCM - Mine Countermeasures Ships
MCRD - Marine Corps Recruiting Depot
MEB - Maneuver Enhancement Brigade
MEF - Marine Expeditionary Force
MET - Maintenance Execution Team
MEU - Marine Expeditionary Unit
MFOM - Family of Munitions
MILCON - Military Construction
MILDET - Military Detachment
MILPERS - Military Personnel
MISR&T - Maritime Intelligence, Surveillance, Reconnaissance, and Targeting
MLR - Marine Littoral Regiment
MLRS - Multiple Launch Rocket System
MML - Missile-to-Missile Link
MOC - Marine Corps Operating Concept
MOS - Military Occupational Specialty
MPMC - Military Personnel, Marine Corps
MPN - Military Personnel, Navy
MPS - Maritime Prepositioning Ships
MRAP - Mine-Resistant Ambush Protected
MRIC - Medium-Range Intercept Capability
MRV - Mission Role Variant
MSC - Military Sealift Command
MSF - Million Square Feet
MST - Maritime Strike Tomahawk
MTS - Moored Training Ship
MTVR - Medium Tactical Vehicle Replacement
MUX - Marine Air-Ground Task Force Unmanned Aircraft System Expeditionary
MYP - Multi-Year Procurement

N

NAS - Naval Air Station
NAV/COMMs - Navigation and Communications
NAVFAC - Naval Facilities Engineering Command
NAVSUP - Navy Supply Systems Command
NAVWAR - Naval Information Warfare Systems Command
NAWC - Naval Air Warfare Center
NCC - Naval Community College
NCCA - Naval Center for Cost Analysis
NCDOC - Navy Cyber Defense Operations Command
NCTAMS PAC - Naval Computer and Telecommunications Area Master Station Pacific

NCTS - Naval Communications and Telecommunications Station
NDAA - National Defense Authorization Act
NDI - Non-Developmental Item
NEO - Non-Combatant Evacuation Operations
NDS - National Defense Strategy
NDSF - National Defense Sealift Fund
NDW - Naval District Washington
NECC - Navy Expeditionary Combat Command
NERP - Navy Enterprise Resource Planning
NGAD - Next Generation Air Dominance
NGJ - Next Generation Jammer
NGLS - Next Generation Logistics Ship
NGT - Next Generation Troposcatter
NIAPS - Navy Information/Application Product Suite
NIOC - Navy Operations Information Command
NIWSC - Naval Information Warfare Center
NLFoS - Navy Laser Family of Systems
NLWS - Navy Laser Weapon System
NMC - Not Mission Capable
NMMES - Navy Maritime Maintenance Enterprise Solution
NMMES-TR - Navy Maritime Maintenance Enterprise Solution Technical Refresh
NOSC - Navy Operational Support Center
NOTM - Networking on the Move
NR&DE - Naval Research and Development Establishment
NSA - National Security Agency
NSBDF - National Sea-Based Deterrence Fund
NSM - Naval Strike Missile
NSRP - National Shipbuilding Research Program
NSS - Naval Sustainment System
NSS - National Security Strategy
NSTC - Naval Service Training Command
NSWC - Naval Surface Warfare Center
NSY - Naval Shipyard
NUWC - Naval Undersea Warfare Center
NWCF - Navy Working Capital Fund

O

O&M - Operation & Maintenance
OASuW - Offensive Anti-Surface Warfare
OCO - Overseas Contingency Operations
OCONUS - Outside the Continental U.S.
ODS - Officer Development School

OEF - Operation Enduring Freedom
OEM - Original Equipment Manufacturer
OFRP - Optimized Fleet Response Plan
OFRTTP - Optimized Fleet Response Training Plan
OFS - Operation Freedom Sentinel
OIF - Operation Iraqi Freedom
OIR - Operation Inherent Resolve
OM&S - Operating Materials and Supplies
OMB - Office of Management and Budget
OMN - Operation & Maintenance, Navy
OMN/R - Operation & Maintenance, Navy Reserve
OOR - Out-of-Reporting
OPDS - Offshore Petroleum Distribution Systems
OPFOR - Operating Forces
OPN - Other Procurement, Navy
OPTEMPO - Operational Tempo
ORD - Operational Requirements Document
ORT - Operation Rolling Tide
OSD - Office of the Secretary of Defense
OT - Operational Test
OTH - Over-the-Horizon
OUSD(C) - Office of the Under Secretary of Defense Comptroller

P

P&D - Production & Deployment
P2P - Performance to Plan
PAA - Primary Authorized Aircraft
PACOM - U.S. Pacific Command
PANMC - Procurement of Ammunition, Navy and Marine Corps
PB - President's Budget
PBL - Performance Based Logistics
PC - Patrol Craft
PCS - Permanent Change of Station
PEO - Program Executive Office
PMAI - Primary Mission Aircraft Inventory
PMAPPS - Program Management Applications System
PMC - Procurement, Marine Corps
PMRF - Pacific Missile Range Facility
PRC - People's Republic of China
Pre-CLO - Pre-Combat Loadout
PRTV - Production Representative Test Vehicle

R

R&D - Research & Development
R&M - Restoration and Modernization
RAA - Request for Additional Appropriations
RADAR - Radio Detection and Ranging
RAM - Rolling Airframe Missile
RBA - Ready Basic Aircraft
RC - Reserve Component
RCOH - Refueling Complex Overhaul
RDT&E,N - Research, Development, Test and Evaluation, Navy
RF - Radio Frequency
RFU - Ready-for-Use
ROC - Reform Oversight Council
ROGUE - Remotely Operated Ground Unit Expeditionary
ROS - Reduced Operating Status
RPED - Rapid Prototyping Experimentation and Demonstration
RPN - Reserve Personnel, Navy
RRF - Ready Reserve Force
RRL - Ready Relevant Learning
RRPR - Reduced Range Practice Rockets
RSTA - Reconnaissance, Surveillance, and Target Acquisition

S

S&T - Science and Technology
S2F - Speed to Fleet
SAPRO - Sexual Assault Prevention and Response Office
SBA - Schedule of Budgetary Activity
SBR - Statement of Budgetary Resources
SCN - Shipbuilding and Conversion, Navy
SCO - Strategic Capabilities Office
SDB - Small Diameter Bomb
SDBII - Small Diameter Bomb Increment II
SDD - System Development and Demonstration
SDR - Ship Disposition Review
SDTA - System Demonstration Test Articles
SEAL - Sea Air Land
SEWIP - Surface Electronic Warfare Improvement Program
SFIM - Strike Fighter Inventory Management
SHORAD - Short Range Air Defense
SID - Ship Inactivation Decision
SLAP - Service Life Assessment Program

SLEP - Service-Life Extension Program
SLM - Service Life Modification
SM - Standard Missile
SM-6 - Standard Missile-6
SMART-T - Secure Mobile Anti-Jam Reliable Tactical Terminal
SMCR - Selected Marine Corps Reserve
SNLWS - Surface Navy Laser Weapon System
SNN - Sealift Nation Needs
SOF - Special Operations Force
SOPGM - Stand-Off Precision Guided Munitions
SOUTHCOM - U.S. Southern Command
SPMAGTF - Special Purpose MAGTF
SPMAGTF-CR-CC - Special Purpose MAGTF – Crisis Response – Central Command
SPMAGTF-SC - Special Purpose Marine Air Ground Task Force Southern Command
SRCFS - Submarine Rescue Fly Away System
SRDRS - Submarine Rescue Diving and Recompression System
SSBN - Nuclear Ballistic Submarine
SSC - Ship-to-Shore Connector
SSR - Secretary's Strategic Review
SSEE - Ship's Signal Exploitation Equipment
SSGN - Guided Missile Submarine (Nuclear)
SSL-TM - Solid State Laser Technology Maturation
SSMM - Surface-to-Surface Missile Module
SSN - Nuclear Attack Submarine
SSN(X) - Future Attack Submarine
ST - Facilities Sustainment
STEM - Science, Technology, Engineering, and Mathematics
STOVL - Short Takeoff and Vertical Landing
STUAS - Small Tactical Unmanned Aircraft System
SUW - Surface Warfare
SWAP-C - Space, Weight, Power and Cooling
SYSCOM - Systems Command

T

T-AE - Combat Logistics Ship
T-AGOS - Ocean Surveillance Ship
T-AH - Hospital Ship
T-AKE - Dry-Cargo Ammunition Ship
T-AO - Fleet Replenishment Oilers
T-AOE - Fast Combat Support Ships

T-ARS - Salvage Ships
T-ATF - Ocean Tugs
T-ATS - Towing, Salvage, and Rescue Ship
T-EPF - Expeditionary Fast Transport
T-ESB - Expeditionary Mobile Base
T-ESD - Expeditionary Transfer Dock
T-HST - High-Speed Transport
T&R - Training and Readiness
TACAIR - Tactical Air
TACTOM - Tactical Tomahawk
TAI - Total Aircraft Inventory
TAT - Turn-Around-Time
TCM - Tactical Communications Modernization
TFM - Total Force Management
TMS - Type/Model/Series
TOA - Total Obligation Authority
TOW - Tube-Launched Optically-Tracked, Wire-Guided
TSC - Theater Security Cooperation
TSEP - Tactical Submarine Evolution Plan
TSP - Thrift Savings Plan
TWTS - Terrestrial Wideband Transmission Systems

U

UARC - University Affiliated Research Center

UAS - Unmanned Aircraft (or Aerial) System
UAV - Unmanned Aerial Vehicle
UCA - Unmanned Carrier Aviation
UCLASS - Unmanned Carrier Launched Airborne Surveillance and Strike
ULTV - Ultra-Light Tactical Vehicle
UNREP - Underway Replenishments
USMC - United States Marine Corps
USN - United States Navy
USV - Unmanned Surface Vehicle/Vessel
UT - Utilities
UTV - Utility Task Vehicle
UUV - Unmanned Undersea Vehicles

V

VPM - Virginia Payload Module

W

WCF - Working Capital Fund
WEZ - Weapon Engagement Zone
WHMO - White House Military Office
WS - Weapon Systems
WSAP - Weapon Systems Acquisition Process
WST - Weapon System Trainers

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