SAN DIEGO MILITARY ECONOMIC IMPACT STUDY 2019

DOD BUDGET INCONSISTENT. SAN DIEGO REGION CONTINUES TO GROW.

Department of Defense Budget ($ Billions)

Military Impact in San Diego GRP ($ Billions)

FY 2009 FY 2019

2009 2019
ABOUT SAN DIEGO MILITARY ADVISORY COUNCIL (SDMAC)

SDMAC was founded in 2004 with the mission to facilitate and advance the partnership between the military, elected officials, civic leaders, and the business community in order to enhance the understanding of the military’s many contributions to the San Diego region. Annually, SDMAC commissions an economic impact study showing the considerable benefits from defense-related spending and presence of the military in San Diego. In 2019, San Diego benefitted from $28 billion in direct spending which equates to $51 billion in GRP and 354,000 jobs within the military sector of our local economy.

MEMBERSHIP

SDMAC is not just for people in the military and defense industries—anyone who lives or works in San Diego is a stakeholder, and can become a member. Benefits of membership include exclusive networking opportunities and events, as well as staying ahead of the latest military and defense issues impacting our region.

Become a member of SDMAC, today: www.sdmac.org.

SDMAC CANNOT THANK BoA ENOUGH FOR BEING THE LEAD SPONSOR FOR THE LAST 9 YEARS. YOUR UNWAVERING SUPPORT OF THE MILITARY AND THE SAN DIEGO REGION IS WIDELY RECOGNIZED AND DEEPLY APPRECIATED.

SMDAC WOULD LIKE TO THANK THE FOLLOWING COMPANIES AND ORGANIZATIONS FOR THEIR STRONG AND GENEROUS SUPPORT WHICH ALLOWS DEVELOPMENT OF THE ANNUAL SDMAC MILITARY ECONOMIC IMPACT STUDY (MEIS) WHICH IS SUCH A VALUABLE DOCUMENT FOR THE MILITARY AND THE SAN DIEGO REGION.
ACKNOWLEDGEMENTS

SDMAC would like to thank Commander Navy Region Southwest, Commander Marine Corps Installations West, Commander Naval Information Warfare Systems Command, Commander Navy Medicine West, Sector Commander Coast Guard Sector San Diego, the San Diego Department of Veterans Affairs Regional Office (VARO), the VA San Diego Healthcare System (VASHDS), the San Diego Water Authority, and their staffs for their support in making this study possible.

11th Annual SDMAC Military Economic Impact Study (SDMAC MEIS) Oversight Group

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DEDICATION

The SDMAC Military Economic Impact Study is dedicated to the memory of John Nersesian, SDMAC President 2009 and long-term SDMAC Board Member who left us on May 29, 2012. It was John’s vision that recognized the need to quantify and document the military’s many contributions to the San Diego region, and it was his initiative, drive, and encouragement that were the forces that resulted in the San Diego Military Advisory Council producing the annual Military Economic Impact Study. John was a patriot and a great supporter of the military and their families. His contributions to the military’s mission and improving the quality of life for the military and their families in the San Diego area were truly significant and are his legacy.

JOHN NERSESIAN
SDMAC PRESIDENT 2009 | (NOV. 1942–MAY 2012)

To download a digital PDF of this report or to view the charts and graphics, visit us online at sdmac.org/MEIS2019
Defense spending increases and the continued rebalancing of the Navy’s fleet towards the Indo-Asia-Pacific Region are now key forces driving San Diego’s economy forward. This thrust could be particularly important in the year ahead should the national or global economy slow.

The partnership that has been forged over many years between the military and San Diego is truly synergistic, providing benefits to both entities and making each stronger together than alone. Not only does San Diego enable the nation to achieve its security objectives, but the military delivers a wide range of benefits to San Diego. The region’s military and civilian employees, its geography, integrated supply chains, universities, and community support mean that defense dollars deliver a higher return in San Diego than in any other area.

San Diego’s military ecosystem represents its largest economic driver, with military-linked spending accounting for one-fifth of the region’s total economy in terms of gross regional product (GRP). The region is home to the largest concentration of military in the world, as well as large numbers of Veterans and military retirees. Because it spans a number of the region’s major sectors, including technology, health care, shipbuilding, manufacturing, and tourism, it represents a “mega cluster”.

This report aims to give the most comprehensive picture possible of the military’s economic influence on San Diego by including the total effects of the Department of Defense (DOD), the Coast Guard and the Department of Veterans Affairs (VA).

An estimated total of $28.1 billion in direct spending related to defense flowed into San Diego County during Fiscal Year (FY) 2019, an amount equal to nearly $25,000 for each household. (See Exhibit A)
Military-related activities and spending contributed approximately $51 billion to San Diego County's GRP in FY 2019. (See Exhibit B)

The military sector was responsible for about 354,000 of the region's total jobs in FY 2019 after accounting for all of the ripple effects of defense-connected spending. This represented 22% of all jobs existing in the County.

A total of 143,000 Active Duty and civilians work as members of the Navy, Marines Corps, Reserves, Coast Guard, or VA. San Diego is home to one of every six of the Nation's Sailors and over one-quarter of the total U.S. Marines Corps.

The jobs created as a direct and indirect result of defense spending cover a wide range, including engineering, shipbuilding, construction, health care, real estate, education, transportation, food services, retailing, and wholesale trade. (See Exhibit C)

Income generated as a result of all direct and multiplier effects of military-linked spending equaled almost $24 billion in FY 2019.

In FY 2019 San Diego was home port for 60 U.S. Navy ships compared with fewer than 50 ships just four years earlier. These ships alone accounted for an estimated direct spending of $2.3 billion and a total economic impact of $6.8 billion. A single aircraft carrier generates more than $800 million of GRP.

The Naval Information Warfare Systems Command (NAVWAR), previously known as SPAWAR, is the U.S. Navy command responsible for the development, delivery, and maintenance of the Navy's communications, networks, information, and space capabilities. This year's SDMEIS features a special analysis of NAVWAR, which has nearly half of its 11,000 global workforce in San Diego and generates about $3.2 billion of GRP for the region.

Navy Medicine, with its two major San Diego hospitals and other facilities, employed over 8,700 individuals and brought an estimated $1.3 billion of DOD dollars directly into the region in FY 2019.

The Marine Corps maintains eight installations and two training ranges in the west which provide the infrastructure to enable Marine Corps air and ground forces to develop and sustain operational readiness. San Diego's three major Marine Corps installations (Camp Pendleton, Miramar, and MCRD) are home not only to 52,000 Marines, but to 3,600 Navy personnel and about 4,000 civilian employees.

The Coast Guard is a key partner to the Navy and Marine Corps in San Diego in its roles as a law enforcement agency, member of the U.S. Intelligence Community, and first responder. The Coast Guard employed nearly 1,100 Active Duty and civilian employees in FY 2019 and, with an estimated direct spending base of $112 million, contributed nearly $300 million to San Diego's GRP.

The VA in San Diego provides a wide range of services, including health care, education and training assistance, and loans. It has placed a major focus on reducing homelessness. In FY 2019 the VA employed nearly 3,100 individuals. With total direct spending of about $3.5 billion, it provided the region with approximately $3.7 billion in GRP.

Total spending funded by the DOD, Coast Guard, and VA is expected to advance by 6.0% in FY 2020, providing a major thrust to the region's economy. The total number of employees is projected to reach 151,000, a jump of about 7,500 over FY 2019. This rise will be primarily driven by the addition of five ships to the Navy's fleet homeported in San Diego, especially with the addition of two aircraft carriers. (See Exhibit D)
The military has significantly impacted the San Diego region for more than a century. While some suspected that its influence might be large, it was not until 2008 when the SDMAC commissioned the first San Diego Military Economic Impact Study (SDMEIS) that its value was documented in numbers. Over time a better understanding of the complexity of San Diego’s military ecosystem has also emerged. It extends from members of the Armed Forces to Veterans and retirees to defense contractors and subcontractors. Defying the traditional grouping of sectors into distinct economic buckets, San Diego’s military crosses over a number of sectors, including technology, shipbuilding, medicine, tourism, and education. Because it encompasses so many of these individual segments, San Diego’s defense driver can be viewed as a “mega cluster”

This year’s SDMEIS quantifies the current and projected impact of the military’s influence on San Diego County in all its dimensions. It includes the impact of the Navy, Marine Corps, Coast Guard, and Department of Veterans Affairs (VA). It also highlights the impact of the Naval Information Warfare Systems Command (NAWAR), previously known as the Space and Naval Warfare Systems Command (SPAWAR), as a special feature in Section VII.

HISTORICAL PERSPECTIVE

The first SDMEIS calculated the impact of the military in FY 2008 as bringing $15.5 billion to the San Diego region in terms of direct spending. For FY 2019 that number has jumped to an estimated $28.1 billion, with inflation accounting for a relatively small part of the gain. The growth of the military’s impact on GRP has been even more impressive, although there have been some methodological changes in GRP calculations by the U.S. Bureau of Economic Analysis. Whereas the military’s contribution to San Diego’s GRP in FY 2008 was estimated at $24.6 billion, that number has doubled in the 11 years to a current estimate of $50.7 billion.

COMPARISON TO LAST YEAR’S ESTIMATES

Last year’s SDMEIS estimated total direct spending of $25.7 billion and GRP of $49.7 billion for FY 2018. Direct spending for FY 2018 is now estimated at $27.1 billion, with upward revisions in numbers on pensions, procurement, Government Purchase Cards (GPC), and tourism. The GRP estimate remains at $49.7 billion.

The military and San Diego region have been in a mutually beneficial strategic partnership for over 100 years.
Approximately 70,000 retired military and civilian employees of the DOD, Coast Guard, and VA live in San Diego. These individuals represent a valuable asset to the region and add to the region’s spending power. Many of them work in the private, non-profit, or government sectors as others volunteer in various ways in their communities.

San Diego’s defense face is also defined by the approximately 241,000 Veterans who are estimated to currently live here. These individuals have served in various wars, including World War II, the Korean War, the Vietnam War, and the War on Terrorism. A large number represent those who have fought in Iraq and Afghanistan. Many of these individuals have returned to their previous home in San Diego, although the cost of housing has caused some decline in the region’s Veteran population in recent years.

It’s all about the courageous men and women in uniform and their families who serve so honorably and sacrifice so much.

The geographic proximity and close relationships that have been established between the Navy, Marine Corps, and Coast Guard facilitate integrated training and operations which have made San Diego a critical cog in the nation’s defense.

The synergy between San Diego and the military is distinctive. Their combination is much more valuable than the sum of their individual parts. San Diego’s ecosystem involving military personnel, geography, private companies, academic institutions, and the community means that defense dollars are able to achieve more here than anywhere else. The region’s network of Active Duty personnel, civilians, defense contractors, subcontractors, researchers, and complex supply chains is unmatched. Combined with the region’s natural features of a deep-water port, position on the Pacific Rim, and air, land, and sea training ranges, San Diego’s defense ecosystem represents an asset that cannot be replicated anywhere else.

Over 60% of the Navy’s Pacific Fleet and over 40% of the Marine Corps combat capability are in the San Diego area. Additionally, more than 50% of Marine Corps recruits are trained at Marine Corps Recruit Depot San Diego, which facilitates integrated training and operations which have made San Diego a critical cog in the nation’s defense.

The partnership that has been forged over many years between the military and San Diego is truly synergistic by providing benefits to both entities and making each stronger together than alone. Not only does San Diego enable the nation to achieve its security objectives, but the military delivers a wide range of benefits to San Diego.

San Diegans integrate members of the military and their families into their communities. They help assure military members that their families will be taken care of while they are deployed. At the same time, military members and their spouses are active participants and contributors to their communities. They serve on juries and public boards. They coach youth sports teams and mentor students. They volunteer to help with churches, schools, and non-profit organizations.

The military with its Active Duty members, civilian employees, and Veterans provides San Diego’s colleges, universities, and trade schools with a steady flow of new students, eager to acquire new skills and knowledge. The region’s educational system in turn supplies the military with vital increases in human capital.

Military members who transition out of the service and choose to remain in the area provide a labor pool of skilled, technically proficient, disciplined, and reliable employees for businesses and industries in the San Diego region. At the same time, individuals with critical knowledge or skills may find new opportunities in the defense ecosystem.
San Diego and NAVWAR represent special synergies. While NAVWAR brings major economic, technological, and educational benefits to the region, San Diego provides NAVWAR with a vital network of defense contractors, research firms, talent, university connections, proximity to other major Navy installations, and essential test facilities.

San Diego businesses, institutions, and the military all partner in research and development, which is extremely successful in evolving capabilities of mutual benefit. This is especially true in the areas of medicine, unmanned systems, and information technology with a focus on cybersecurity.

Due to the military’s presence and economic value, the San Diego region serves as an incubator for small business whose customer base is the DOD. These businesses can then become part of supply chains vital to military operations.

The military has proven to be a good steward of the environment and frequently sets the trend for the region in environmental efforts, especially in the protection of endangered species, alternative energy, and the conservation of water. These efforts support the San Diego region’s Climate Action Plans (CAPs) as it strives to reduce greenhouse gas (GHG) emissions.

The synergy between the military and San Diego has two major implications. It means that pulling any part of the defense ecosystem out of the region would damage the effectiveness of the Nation’s security strategy. It also means that a loss of any part of the region’s defense network might be extremely hard to replace in terms of its economic and social benefits.
In FY 2019 approximately $6.0 billion was paid to various San Diego residents who were Veterans, retired military members or civilian employees of the DOD, Coast Guard, or VA. This income supported spending on goods and services throughout the region.

The 239,000 Veterans residing in San Diego County in FY 2019 received an average of nearly $11,000 in benefits. Close to one-half of this total amount was for pension payments, with the remainder split between funding for medical care and educational or vocational training. In addition, Veterans have access to insured and guaranteed mortgage loans, which help support San Diego’s real estate and housing sectors.

During FY 2019 an estimated $10.3 billion flowed into San Diego County as a result of work on new and previous procurement contracts with various branches of the DOD, Coast Guard, and the VA. Local industries heavily involved with DOD contracts (the primary government procurement agency) include aircraft and parts, shipbuilding and repair, engineering, construction, electronics components, and scientific research. (See Exhibit 3)

After sequestration slashed DOD contracts to San Diego firms by nearly 25% in FY 2013, orders have rebounded in recent years, including a nearly 5% gain in FY 2017 and an 8% rise in FY 2018. New contract orders are estimated to have gained about 3% in FY 2019.

Actual outlays each year are typically less volatile than the annual totals of new procurements because many defense contracts extend over a considerable period of time. For instance, construction and shipbuilding projects involve phases of design and engineering, acquisition of materials, hiring of subcontractors, site preparation, and actual building. Spending on defense contracts can span a period of five years or even longer. R&D contracts typically are relatively short-term in nature, with much of the work completed within the first two years. Aircraft projects frequently see a peak of activity in the second year, while construction projects peak in the third year. For both of these industry contracts, sizable amounts of work continue into the two or three subsequent years following the peak.
Shipbuilding has the most even build-out rates, with about 10-20% of project funds expended during each of the six years of a typical project.

Procurement dollars in terms of newly contracted amounts each year and the disbursement of outlays for the work actually done can follow different patterns. The approximate 7% jump in DOD contract disbursements estimated for FY 2019 partly reflected the surge in shipyard contracts in FY 2017 and large contract volume increases for aircraft, aircraft parts, and research and development in FY 2018.  

SHIPBUILDING

CONSTRUCTION

Such as construction firms able to make needed building repairs, businesses as purchases were made for office supplies, medical services by federal agencies as they carried out the multiple operations and maintenance functions of the region's Federal agencies often use Government Purchase Cards (GPCs) for facility supplies and maintenance. Coast Guard grants support Receipt is an important source of revenue for the region's hotels, restaurants, transportation, entertainment, and other tourism-related businesses.

A wide range of firms also contract with the Navy, Marine Corps, Coast Guard, and VA to provide goods and services to carry out the multiple operations and maintenance functions of the facilities based in the County. These include food service, janitorial, telecommunications, logistics, security, landscaping, and other facilities support functions.

GOVERNMENT PURCHASE CARDS

Federal agencies often use Government Purchase Cards (GPCs) for “micro-purchases” of less than $5,000. GPC spending by DOD, Coast Guard, and VA units in San Diego totaled an estimated $46 million in FY 2019. This spending benefited a wide variety of the region’s businesses as purchases were made for office supplies, medical instruments, electronics components, and many types of other merchandise. GPC payments also benefited many service providers, such as construction firms able to make needed building repairs, telecommunications providers, and printing firms.

GRANTS

Grants from the DOD, DHS for the Coast Guard, and VA represent another funding channel for San Diego organizations, with the total estimated at about $119 million for FY 2019. Underwriting a variety of research efforts, grants related to medicine, alternative energy, intelligence, and other military-related issues have been funded across the County. The majority of grants goes to local universities for research in these areas. Grants are also awarded to elementary and secondary schools for enrichment programs in math, science, and engineering. Further grant funding supports various community food, housing, and rehabilitation services along with environmental issues. Coast Guard grants support health and education. VA grants are focused on various Veterans’ facilities and organizations, including those serving individual veterans experiencing homelessness.

TOURISM

Tourism linked to the military’s presence in San Diego represents the final channel of influence and was equal to an estimated $212 million in FY 2019, a gain of 4.5% over the prior year. This was an important source of revenue for the region’s hotels, restaurants, transportation, entertainment, and other tourism-related businesses.

Visits by business travelers, government officials, and family members or friends of military personnel and civilian workers employed by the DOD, Coast Guard, and VA bring a significant sum of funds from outside the region into San Diego each year. While not primarily funded by the government as are the other components of defense-related dollars, these dollars are an important catalyst for economic activity.

Considerable tourist dollars come to the region because of the numerous graduations that take place each year at the Marine Corps Recruiting Depot (MCRD). In FY 2019, over 17,000 individuals graduated from the facility in 42 ceremonies over the course of the year. Nearly 70,000 family members and friends came to San Diego to celebrate these events, spending an estimated $39 million on consumption, transportation, entertainment, and other tourist-related activities. MCRD also conducts training sessions for recruiters during the year as well as workshops for teachers and school counselors.

The economic activity driven by military-linked activity supported a total of 354,000 jobs in FY 2019. These jobs generated $23.5 billion in income or earnings for wage and salary workers and for various small business owners.

The military, including the impacts of the Coast Guard and VA and all of the ripple effects, was responsible for $50.7 billion of San Diego’s GRP in FY 2019. This represented one-fifth of the County’s total output.

RIPPLE EFFECTS
NATIONAL DEFENSE SPENDING

Total spending on national security appears to have bottomed out relative to GDP, although at a relatively low level. From a peak of slightly over 9.0% at the height of the Vietnam War in 1968, discretionary defense spending (requiring congressional appropriations) as a share of GDP has generally trended lower. It did rise briefly following the 9/11 terrorist attacks, but the downward trend again resumed before flattening out during the past five years. Since FY 2018, the share of total federal outlays linked to defense has equaled about 3.1% to 3.2% of GDP. (See Exhibit 7)

Congress and the President approved legislation last summer that avoided large cuts to the defense budget that would have taken place in FY 2020 under requirements of the Budget Control Act of 2011. The agreement set budget authority for discretionary defense spending at $738 billion for FY 2020. Adjusting for defense-related spending by the Department of Energy and other federal agencies, this will mean a discretionary budget authority for the DOD of about $707 billion, a 3.2% increase over FY 2019. This will be up from the 2.1% estimated increase of FY 2019, but down from the 10.7% advance of FY 2018. (See Exhibit 8)

OUTLOOK FOR SAN DIEGO IN FY 2020

San Diego should continue to benefit from the ongoing rebalance to the Pacific and the DOD’s efforts to improve troop readiness and incorporate new technologies. Total spending funded by the DOD, Coast Guard, and VA is expected to advance to $29.8 billion in FY 2020, a 6.0% leap over FY 2019. This advance could be a vital growth catalyst, offsetting other possible sources of weakening in consumer spending, business investment, or exports.
The Navy in San Diego represents the primary platform for the Nation’s military operations in the Asia-Pacific region. Approximately 56,000 Sailors are based in San Diego, accounting for one of every six members of the Nation’s total Naval force. The largest share of the region’s Navy (28,000) is at Naval Base San Diego, including Sailors who may be deployed on various ships during the year. The Navy has 3 major installations with 38 geographic sites and approximately 600 commands in the San Diego area.

**SHIPS AND PEOPLE**

About two-fifths of San Diego’s Sailors, or 23,000, were attached to various ships homeported in the region in FY 2019 and the Naval fleet in San Diego included 54 surface combatants, a nuclear powered aircraft carrier, and five nuclear powered submarines for a total of 60 operational ships. Each ship type possesses distinct characteristics to carry out the Nation’s defense strategies.

Even as ships have become more automated, sizable numbers of personnel are required to make each operate effectively. The number of people working on each ship varies according to the ship’s size, its complexity, and its specific mission. There are fewer than 100 personnel on board a mine countermeasure ship (MCM), while submarines (SSN) and littoral combat ships (LCS) require about 130-140 personnel. Destroyers (DDG), guided missile cruisers (CG), amphibious transport ships (LPD), and dock landing ships (LSD) require 300-400 sailors for operations. Approximately 1,200 individuals are needed to operate an amphibious transport ship (LHA-LHD) and an aircraft carrier (CVN) typically requires about 3,200 people.

**SHIPS AND DOLLARS**

Ship-related spending has a sizable impact on the local economy. Wages and salaries of personnel assigned to different ships are spent primarily in the San Diego region either by Active Duty members or by their families residing here. Sailors retain their local residences when deployed overseas (either base housing or supported by the Basic Allowance for Housing.) The spending on ship repair and other contracts, port services, food, and utilities, primarily...
benefits the local economy. Electricity and water are the major utility expenses, with electricity representing the dominant one. All ships have the capability of distilling fresh water from sea water when underway. In addition to the sizable economic effect from the spending required to operate each ship, considerable “ripple” or multiplier effects take place as those initial dollars feed through the region.

In FY 2019 direct spending related to San Diego’s Navy fleet totaled an estimated $2.3 billion. A single aircraft carrier represents spending of more than $800 million. Including all of the ripple effects, San Diego’s Navy fleet contributed $6.8 billion to the region’s economy in FY 2019.

SAN DIEGO’S FLEET BULKS UP

The number of ships homeported in San Diego is projected to advance to 65 in FY 2020, compared with 60 in FY 2019 and fewer than 50 in FY 2015. San Diego continues to benefit from a greater focus on Asia and the Navy’s “Rebalance to the Pacific” strategy. San Diego will be home to three aircraft carriers in FY 2020. Due to carrier overhauls, homeport changes and deployments there is currently only one carrier homeported in San Diego, but the plan has always been for three with the second to arrive in November 2019. These will be joined by five submarines and 57 surface ships. (See Exhibit 10)

SAN DIEGO’S FLEET BULKS UP

Navy Medicine is an integral part of the footprint and economic impact that the military has on the entire San Diego region. Navy Medicine in the County is anchored by two major military treatment facilities and a research center, which employ more than 8,700 individuals.

NAVAL MEDICAL CENTER SAN DIEGO

The larger of the two military treatment facilities is Naval Medical Center San Diego (NMCSD), adjacent to Balboa Park, which services Active Duty service members, families, retirees, and Veterans. In addition to its main campus at Balboa, NMCSD operates 21 branch health and dental clinics located at several military bases and neighborhoods throughout the County and two in El Centro, CA. NMCSD employs about 6,400 Active Duty and civilians. NMCSD often contributes to the USNS Mercy’s mission in supporting multinational humanitarian efforts.

NAVAL HOSPITAL CAMP PENDLETON

Naval Hospital Camp Pendleton (NHCP) is a medium sized teaching hospital serving Marines, Sailors, and family members of the I Marine Expeditionary Force and other units afloat Marine Corps Base Camp Pendleton. NHCP’s staff is comprised of nearly 2,200 enlisted personnel, officers, and civilian personnel. In addition to the core hospital, NHCP has four branch health clinics located on the base and one off-base clinic located in Oceanside, CA. The command also has branch health clinics at Marine Corps Air Station Yuma, Arizona, and Naval Base Ventura County, California.

NAVAL HEALTH RESEARCH CENTER

Located at Naval Base Point Loma, the Naval Health Research Center (NHRC) is the DOD’s designated deployment health research center, conducting much of the Nation’s top tri-service research and development. Its research encompasses physical readiness, joint medical planning, wounded warrior recovery, and behavioral health. (See Exhibit 11)

ECONOMIC INFLUENCE OF NAVY HOSPITALS

The two Navy hospital facilities injected about $1.3 billion of funds into the region during FY 2019. These expenditures included compensation to employees, pharmaceuticals, surgical appliances, family services, and electronic equipment support. Navy Medicine continues to represent a vital spoke of San Diego’s overall health care system.
THE U.S. MARINE CORPS

The Marine Corps fulfills a vital role in national security as an amphibious, expeditionary, and air-to-ground force, capable of combat from the air, land, or sea. With its unique expeditionary abilities, Marines can deploy anywhere in the world within a few days. In order to retain constant readiness, Marines must train as they fight, with access to interconnected sea, land, and air ranges. The varied terrain and climate of the southwest makes it an ideal place to prepare Marines for combat. Forty percent of the Marine Corps’ combat power resides in the southwest, along with 85% of its land holdings. Even more significant, 95% of Marines train in the region (predominantly California) before deploying overseas.

THE MARINES CORPS’ LOCAL PRESENCE

Approximately 52,000 Marines are based in San Diego, including the average number of recruits located here during the year. More than one out of every four members serving nationwide in the Marine Corps is based in San Diego County. Camp Pendleton is home to about 37,000 of San Diego’s Marines. (See Exhibit 12)

The Marine Corps maintains eight installations and two training ranges in the west which provide the infrastructure to enable Marine Corps air and ground forces to develop and sustain operational readiness. San Diego’s three major Marine Corps installations (Camp Pendleton, Miramar, and MCRD) are home not only to 52,000 Marines, but to 3,600 Navy personnel and about 4,000 civilian employees. An additional 2,000 Marines work at the region’s different Navy bases and at the hospitals. The Marine bases are in themselves centers of economic activity, with a heavy flow of local businesses entering the installations every day to provide various goods and services.

As the largest west coast amphibious assault training facility, Camp Pendleton encompasses more than 125,000 acres of southern California. The 17.5 miles of shoreline and mountainous terrain support a variety of military training for operating forces, as well as national, state and local agencies. Having uninterrupted air space allows Camp Pendleton to host large-scale training exercises involving naval, ground, and aviation forces in a combined way.

With an approximately daily population of 80,000 personnel, Camp Pendleton is one of the Department of Defense’s busiest installations. Camp Pendleton has been the largest North County employer for over 60 years with about 43,000 Marines, sailors, civilians, and their families calling it home. MCRD is essential to the viability of the Marine Corps, graduating over 17,000 new Marines in FY 2019. The proximity to Camp Pendleton enhances recruit training, vital to their success.

Marine Corps Air Station Miramar is the home of the 3rd Marine Aircraft Wing. Some of the Marine Corps’ newest aircraft, including the MV-22, are based there. The new F-35 is scheduled to arrive early in 2020. MCAS Camp Pendleton is the home of Marine Aircraft Group 39, the Corps largest aircraft group.

MARINES CORPS’ OPERATIONAL FORCES IN THE GREATER SAN DIEGO REGION

Distributed across Marine Corps Base Camp Pendleton, Marine Corps Air Stations Camp Pendleton, Miramar, and Yuma, and Marine Corps Air Ground Combat Center Twenty-Nine Palms, I Marine Expeditionary Force (I MEF) is capable of generating and deploying units for crisis response, forward presence, major combat operations, and campaigns.

Major subordinate commands of I MEF are the 1st Marine Division (1stMarDiv), 3rd Marine Aircraft Wing (3rdMAW), and the 1st Marine Logistics Group (1stMLG).

The 1stMarDiv is a multi-role, expeditionary ground combat force. The Division is employed as the ground combat element of I MEF and may provide task-organized forces for assault and other operations as required. The 1stMarDiv provides the ground amphibious entry capability for the naval expeditionary force and can conduct subsequent land operations in any operational environment.

The 3rdMAW’s mission is to provide combat ready expeditionary aviation forces capable of world wide deployment on short notice to Marine Air Ground Task Force (MAGTF), fleet, and unified commanders. The Wing is employed as the air combat element to I MEF.

The MAGTF is the Corps’ principal organizational construct for conducting missions across the entire range of military operations. The MAGTFs supply commanders with scalable and versatile expeditionary forces able to assure allies, deter potential adversaries, provide United States’ presence with little or no footprint ashore, and respond to a broad range of contingency, crisis, and conflict situations. The MAGTF is a balanced, combined arms force package containing combat, ground, aviation, and logistics elements.

Several thousand I MEF Marines are deployed across the globe at any given time, deploying three Marine Expeditionary Units (11th, 13th, 15th MEU’s), a Special Purpose MAGTF Crisis Response Central Command (SPMAGTF-CR-CC), and Advise and Assist Task Forces, while facilitating several Theater Security Cooperation exercises at home and abroad. A single commander leads and coordinates each of these combined arms teams through all phases of deployment and employment. The MAGTFs live and train together, further increasing their cohesion and fighting power.

The Marine Corps’ infrastructure and training ranges in the San Diego area, combined with the proximity to Navy installations and Navy Expeditionary units for integration and joint training, are essential to the readiness of the Marine Corps and are irreplaceable anywhere else in the nation.
The Coast Guard is a key national security partner to the Navy and Marine Corps in San Diego in its roles as a law enforcement agency, member of the U.S. Intelligence Community, and first responder. It is the only branch of the U.S. Armed Forces within the Department of Homeland Security.

Coast Guard Brings $290 Million to San Diego’s GRP

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<th>FY 2019e</th>
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<tr>
<td>Total Personnel</td>
<td>1,067</td>
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<td>Direct Spending Total ($ millions)</td>
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<tr>
<td>Employee Compensation</td>
<td>$78.6</td>
<td></td>
</tr>
<tr>
<td>Retirement Benefits</td>
<td>$25.5</td>
<td></td>
</tr>
<tr>
<td>Procurement</td>
<td>$3.8</td>
<td></td>
</tr>
<tr>
<td>Grants, GPC, Tourism</td>
<td>$4.1</td>
<td></td>
</tr>
<tr>
<td>GRP ($ millions)</td>
<td>$290.4</td>
<td></td>
</tr>
<tr>
<td>Personal Income ($ millions)</td>
<td>$112.5</td>
<td></td>
</tr>
<tr>
<td>Total Jobs</td>
<td>1,745</td>
<td></td>
</tr>
</tbody>
</table>

**Economic Ripple Effects**

Both in qualitative and quantitative terms, the Coast Guard has a much larger impact than might be suggested by its relatively small budget. In FY 2019, every $100 of direct spending through the Coast Guard generated over $250 of GRP. As a result, after all the multiplier effects of supply chain and consumer impacts, the Coast Guard contributed nearly $300 million to San Diego County’s total output or GRP. The Coast Guard was also responsible, directly or indirectly, for generating $113 million in total personal income and nearly 1,750 total jobs.
Diego (VVSD) has created a safe haven for Veterans experiencing homelessness to receive wrap-around services while enabling them to find housing. VVSD is the only program of its kind in the United States and is nationally recognized as the leader in serving homeless military veterans. (See Exhibit 15)

The VA San Diego Healthcare System (VASDHS) provides comprehensive inpatient and outpatient health services at the medical center in La Jolla, at six community clinics (Chula Vista, Escondido, Imperial Valley, Mission Valley, Oceanside, and Sorrento Valley), and at the RIA Clinic. It provides medical, surgical, mental health, geriatric, spinal cord injury, and advanced rehabilitation services. VASDHS has 296 authorized hospital beds and it operates several regional referral programs that include cardiovascular surgery and spinal cord injury care.

VASDHS is affiliated with the University of California, San Diego School of Medicine. It provides training for 1,440 medical interns, residents, and fellows as well as 751 other health profession trainees in areas such as nursing, pharmacy, dentistry, and dietetics. The facility has one of the Nation’s largest VA research programs with 210 principal investigators and nearly 700 projects.

THE VA’S PRESENCE IN PEOPLE AND DOLLARS

The VA in San Diego directly employs nearly 3,100 people, with most of them on its medical staff. Direct spending, reflecting the inflow of dollars emanating primarily from the VA into San Diego, totaled approximately $3.5 billion in FY 2019. Veterans’ benefits and retiree pay represented the bulk of the funding. Personnel compensation and the value of VA contracts awarded to San Diego firms for equipment, other goods, and services followed in importance. Grants, GPC, and tourism represented the balance. (See Exhibit 16)

ECONOMIC RIPPLE EFFECTS

Including all of the supply chain and consumer effects as these direct spending dollars circulated through the economy, the VA contributed approximately $3.7 billion to San Diego County’s GRP in FY 2019. This translated into $2.3 billion of total personal income and approximately 37,000 total jobs.
AB 1588 had passed through several committees in Sacramento without opposition and was on a path toward the governor’s desk.

“The water industry is facing a ‘silver tsunami,’ with thousands of workers expected to retire in coming years,” said Jim Madaffer, chair of the Water Authority’s Board of Directors. “Veterans can strengthen our community with skills that not only fill critical needs but also help our industry continue to thrive.”

There are approximately 6,000 active certified wastewater treatment plant operators and approximately 35,000 drinking water treatment and distribution operators in California. Locally, more than 2,800 people work at the Water Authority and its 24 member agencies in fields such as engineering, accounting, human resources and operations.

Interested veterans should go to www.sdcwa.org/careers to learn more about opportunities at the Water Authority and its 24 member agencies.

CELEBRATING A SHARED LEGACY OF SERVICE

The Water Authority celebrates its 75th anniversary in 2019, owing its very existence to the rapid expansion of military forces in San Diego following the bombing of Pearl Harbor in 1941. A flood of servicemembers and construction crews nearly doubled the city’s population in just two years, and it quickly became clear that San Diego – and the Navy – needed more reliable water supplies.

An aqueduct to the Colorado River became a top priority, not only locally but also in Washington, D.C. President Roosevelt directed the Navy to build a six-foot-diameter pipeline that connected San Vicente Reservoir near Lakeside to the Metropolitan Water District of Southern California’s aqueduct system in Riverside County. (The picture on the previous page depicts officials examining the six foot diameter pipeline.)

On June 9, 1944, San Diego voters approved the agency’s formation under the County Water Authority Act. Imported water arrived three years later through the new pipeline just weeks before local supplies would have run out.

For its first several decades, the Water Authority served mainly as a pumps-and-pipes agency, delivering imported water to local agencies. But a severe drought in the early 1990s forced the region to confront the fact that continuing to provide safe and reliable water supplies demanded a diverse portfolio of water supplies instead of near-total reliance on a single source.

Today, the Water Authority is a leader in water conservation, asset management, seawater desalination and water resource planning, delivering more than 400 million gallons a day to serve the region’s 3.3 million residents and sustain its $231 billion economy. In fact, a 2018 study by the San Diego Regional Economic Development Corp. concluded that $482 million a day in regional sales were supported by reliable access to water.

PREPARING FOR THE FUTURE

A vibrant region like San Diego requires local agencies that are planning for decades ahead to ensure safe, reliable water supplies are always available to support the region’s needs, including expansion of military operations in the region.

That’s why the Water Authority and its member agencies are engaged in several visionary efforts to increase water security despite a changing climate. For example, several retail agencies around the region are developing or executing plans to purify wastewater for potable reuse.

The Water Authority is currently refurbishing the historic First Aqueduct, while also assessing the potential for a new pipeline system that would deliver Colorado River water supplies directly while providing multiple benefits to other stakeholders in the Southwest. At the same time, the Water Authority is seeking to expand water storage opportunities in Lake Mead and even generating green energy using the power of water.

With continued investments, strategic planning and sound fiscal management, San Diego County’s water agencies will continue to deliver the supplies that keep the region’s military strong.
NAVAIR'S SAN DIEGO OPERATION

The Naval Information Warfare Systems Command, headquartered in San Diego, is an Echelon II organization, operating under the Chief of Naval Operations. Employing about 11,000 military and civilian professionals world-wide, and 5,200 here in the San Diego region (See Exhibit N1), NAVWAR is the Navy's technical authority and acquisition command for information warfighting capabilities.

As one of the Department of the Navy's major acquisition commands, NAVWAR's expertise is in information technology, specifically in networks and communications, warfare systems, and business systems, all with a strong focus on cybersecurity. (See Exhibit N2) NAVWAR develops information architectures and standards, along with supporting products and services. These transform ships, aircraft, and vehicles from individual platforms into integrated warfighting systems, while delivering and enhancing interoperability with partners around the world. These partnerships include the Navy, Marines, joint forces, federal agencies, and international allies.

NAVWAR's San Diego headquarters' operations provide support for over 150 separate Navy programs, managed by three Program Executive Offices (PEOs). PEO for Command, Control, Communications, Computers and Intelligence (PEO C4I) and PEO Space Systems are located in San Diego, while PEO Enterprise Information Systems is located in Washington DC. Additionally, NAVWAR oversees three subordinate commands: Naval Information Warfare Center Atlantic (NIWC), headquartered in Charleston, South Carolina, NAVWAR Space Field Activity, located in Chantilly Virginia, and NIWC Pacific, located in San Diego. Nearly half of NAVWAR's global employees are based in San Diego and the majority of those are assigned to NIWC Pacific. With significant laboratory and support facilities, NIWC Pacific's focus is research, development, engineering, and support of integrated C4ISR, cyber, and space systems across all warfighting domains. It rapidly prototyes, conducts testing and evaluation, and provides acquisition, installation, and in-service engineering support for the Navy and other sponsors.

NAVWAR's total budget in FY 2018 was more than $7.4 billion (See Exhibit N3), with about half provided by direct

EXHIBIT N1
San Diego Represents Almost Half of NAVWAR's Global Workforce

<table>
<thead>
<tr>
<th>Source: NAVWAR, FBEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Employees, FY 2018</td>
</tr>
<tr>
<td>Total: 10,812</td>
</tr>
<tr>
<td>San Diego: 5,193</td>
</tr>
<tr>
<td>Rest of the World: 5,619</td>
</tr>
</tbody>
</table>

EXHIBIT N2
NAVWAR's Macro Funds Flow – FY 2018

<table>
<thead>
<tr>
<th>Source: NAVWAR HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funds Appropriated to NAVWAR</td>
</tr>
<tr>
<td>NAVWAR TOTAL: $7.4B</td>
</tr>
<tr>
<td>NIWC LANT ($2.2B)</td>
</tr>
<tr>
<td>NIWC PAC ($2.2B)</td>
</tr>
<tr>
<td>NIWC LOCAL ($2.1B)</td>
</tr>
<tr>
<td>Notes:</td>
</tr>
<tr>
<td>• NIWC LANT includes Norfolk and NOLA; NIWC PAC includes PAC General Fund</td>
</tr>
<tr>
<td>• Delta between NIWC Inflow and Outflow to Industry is primarily associated w/ NIWC Labor Costs</td>
</tr>
<tr>
<td>• Preliminary</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source: NAVWAR HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Sources</td>
</tr>
<tr>
<td>Direct to Industry $7.2B</td>
</tr>
<tr>
<td>To NAVWAR $0.2B</td>
</tr>
<tr>
<td>To Industry $1.5B</td>
</tr>
<tr>
<td>Labor &amp; Travel $0.1B</td>
</tr>
<tr>
<td>36% To Industry</td>
</tr>
<tr>
<td>59% Labor &amp; Travel</td>
</tr>
<tr>
<td>51% Government Technical Oversight; R&amp;D</td>
</tr>
<tr>
<td>45% PEO's, &amp; Government Technical</td>
</tr>
<tr>
<td>&amp; Test</td>
</tr>
<tr>
<td>59% Labor &amp; Travel</td>
</tr>
<tr>
<td>49% Government Technical</td>
</tr>
<tr>
<td>Oversight; R&amp;D</td>
</tr>
<tr>
<td>$1.1B</td>
</tr>
<tr>
<td>$1.1B</td>
</tr>
<tr>
<td>61%</td>
</tr>
<tr>
<td>68%</td>
</tr>
</tbody>
</table>

San Diego and the majority of those are assigned to NIWC Pacific. With significant laboratory and support facilities, NIWC Pacific's focus is research, development, engineering, and support of integrated C4ISR, cyber, and space systems across all warfighting domains. It rapidly prototyes, conducts testing and evaluation, and provides acquisition, installation, and in-service engineering support for the Navy and other sponsors.

NAVWAR's total budget in FY 2018 was more than $7.4 billion (See Exhibit N3), with about half provided by direct...
Congressional appropriations and half sourced by other U.S. Government agencies through their budgets. NAVWAR is able to accept funding from other parts of the government for specific products and services for work executed through NIWC Pacific and Atlantic. These commands operate as Navy Working Capital Fund (NWCF) organizations, a revolving fund operation that relies on revenue from NAVWAR and other agencies rather than direct Congressional appropriations. The level of NWCF funding received is based on customer demand and NAVWAR’s capacity. These other U.S. Government agencies include other parts of the Navy, Department of Energy, the Department of Transportation, and the Department of Homeland Security, as well as international work funded through DOD’s Foreign Military Sales program.

Although NAVWAR conducts research and other work internally, it also outsources a large amount to private industry. In FY 2018, $2.7 billion of the total $7.4 billion of new funding was immediately outsourced to commercial companies, and another $4.4 billion was allocated to NIWC Atlantic and NIWC Pacific. These commands then contracted out $2.8 billion to private companies. As a result, in FY 2018, the private sector received $5.5 billion of contracts funded through NAVWAR. This amount was equivalent to about 74% of NAVWAR’s funds available for the year.

Businesses that work with NAVWAR tend to be colocated where they have a major footprint. NAVWAR has its largest concentration of people in San Diego, CA, Charleston, SC, and Norfolk, VA. These are also the three locations, led by California, receiving the highest dollar volumes of contract work (See Exhibit N4).

While NAVWAR distributed its budgeted funds worldwide to support its mission, California was the nation’s biggest state recipient of FY 2018 funds and, by far, the U.S. area receiving the largest amount of contracted work was the San Diego region at $1.6 billion.

NAVWAR’s economic impact on San Diego County extends beyond the $2.2 billion injected through the seven principal channels described above. Supply chain effects and additional consumer spending amplify the total impact on jobs, income, and GRP.

In FY 2018, NAVWAR contributed an estimated $3.2 billion (See Exhibit N5) to San Diego region’s GRP. It was responsible, directly and indirectly, for more than 26,000 jobs and $2.2 billion in total income. NAVWAR’s economic footprint on the region is estimated to expand even further in FY 2019, with a forecasted $3.5 billion in GRP, nearly 29,000 jobs, and $2.4 billion in total personal income. (See Exhibit N6)
UNDERSTANDING NAVWAR’S ECONOMIC FOOTPRINT ON SAN DIEGO

NAVWAR’s contracts in San Diego’s economy through seven major channels (See Exhibit N7), with a total direct spending stream totaling $2.2 billion in FY 2018. These channels include contracts awarded to San Diego businesses, NAVWAR’s employees, spending for operations and maintenance, NAVWAR-related tourism, patents, Government Purchase Card payments, and NAVWAR’s contribution to science, technology, engineering, and math (STEM) education.

1. CONTRACTS

NAVWAR’s contracts awarded to businesses in San Diego represent its largest direct contribution to our region’s economy (See Exhibit N8). The funding for many contracts may span a number of years as projects work their way to completion. The dollar value of work done on previous and current contracts in FY 2018 is estimated at $1.3 billion versus the $1.6 billion of work done on previous and current contracts in FY 2017. These channels include contracts awarded to San Diego businesses, NAVWAR’s employees, spending for operations and maintenance, NAVWAR-related tourism, patents, Government Purchase Card payments, and NAVWAR’s contribution to science, technology, engineering, and math (STEM) education.

Both large and small businesses benefit from contracts awarded by NAVWAR. Viasat, Booz Allen Hamilton, SERCO, and Science Applications International Corporation (SAIC) each received total NAVWAR contract awards exceeding $100 million in FY 2018.

Naval Information Warfare Systems Command (NAVWAR) impacts San Diego’s economy through several channels to NAVWAR’s impact.

Contracts and Payrolls Largest Contributors to NAVWAR’s Impact

<table>
<thead>
<tr>
<th>MILLENNIUMS OF DOLLARS, FISCAL YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACTS</td>
</tr>
<tr>
<td>COMPENSATION</td>
</tr>
<tr>
<td>OPERATIONS / MAINTENANCE</td>
</tr>
<tr>
<td>TOURISM</td>
</tr>
<tr>
<td>PATENTS</td>
</tr>
<tr>
<td>GOVERNMENT PURCHASE CARDS</td>
</tr>
<tr>
<td>STEM</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

(See Exhibit N7) Small businesses received more than $500 million, or one-third of NAVWAR contracts, in FY 2018 (See Exhibit N10). Some of these small firms included Xiom Engineering Systems, Sentek Consulting, Systems Technology Forum, and Cameron Bell Corporation. (See Exhibit N11)

Companies, both large and small, receiving NAVWAR contracts are dispersed throughout San Diego County. Some of the largest clusters, in terms of the value of contracts, are in Carlsbad, Serra Mesa, and in San Diego near NAVWAR’s offices. Engineering, communications equipment, computer system design, specialized equipment manufacturing, and research and development represented the primary areas receiving NAVWAR contract awards in FY 2018 (See Exhibit N12). This reflects NAVWAR’s mission to provide communications, network capabilities, and technology to support information warfare.

NAVMAR’s contract awards contribute to the STEM (science, technology, engineering, and math) education. NAVWAR’s mission to provide cybersecurity training and research in STEM fields has contributed to increased training opportunities and the development of new technologies.

NAVWAR’s influence is not limited to San Diego. The company is a major contributor to the local economy, providing employment opportunities, and fostering innovation in the STEM fields.

Technology Attracts Majority of NAVWAR Contracts

<table>
<thead>
<tr>
<th>CONTRACT TYPE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGINEERING</td>
<td>$975.2</td>
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<tr>
<td>COMMUNICATION EQUIPMENT</td>
<td>$955.3</td>
</tr>
<tr>
<td>MANUFACTURING</td>
<td>$94.8</td>
</tr>
<tr>
<td>COMPUTER SYSTEM DESIGN</td>
<td>$97.3</td>
</tr>
<tr>
<td>OTHER EQUIPMENT MANUFACTURING</td>
<td>$91.7</td>
</tr>
<tr>
<td>RESEARCH AND DEVELOPMENT</td>
<td>$70.0</td>
</tr>
<tr>
<td>PROFESSIONAL SERVICES</td>
<td>$21.7</td>
</tr>
<tr>
<td>MANAGEMENT CONSULTING</td>
<td>$12.8</td>
</tr>
<tr>
<td>TELECOM</td>
<td>$11.7</td>
</tr>
<tr>
<td>MISC. MANUFACTURING</td>
<td>$6.8</td>
</tr>
<tr>
<td>WHOLESALE TRADE</td>
<td>$81.1</td>
</tr>
</tbody>
</table>

(See Exhibit N13) NAVWAR has been a major contributor to cyber security research and development, with significant investments in technology and infrastructure. The company’s expertise in cybersecurity has attracted a large number of contracts, contributing to the local economy and fostering innovation in the field.

Cybersecurity Boosts Recent NAVWAR Contracting

<table>
<thead>
<tr>
<th>BILLIONS OF DOLLARS, FISCAL YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
</tr>
<tr>
<td>2016</td>
</tr>
<tr>
<td>2017</td>
</tr>
<tr>
<td>2018</td>
</tr>
<tr>
<td>2019</td>
</tr>
</tbody>
</table>

(See Exhibit N14) Small businesses received more than $500 million, or one-third of NAVWAR contracts, in FY 2018 (See Exhibit N10). Some of these small firms included Xiom Engineering Systems, Sentek Consulting, Systems Technology Forum, and Cameron Bell Corporation. (See Exhibit N11)

Companies, both large and small, receiving NAVWAR contracts are dispersed throughout San Diego County. Some of the largest clusters, in terms of the value of contracts, are in Carlsbad, Serra Mesa, and in San Diego near NAVWAR’s offices. Engineering, communications equipment, computer system design, specialized equipment manufacturing, and research and development represented the primary areas receiving NAVWAR contract awards in FY 2018 (See Exhibit N12). This reflects NAVWAR’s mission to provide communications, network capabilities, and technology to support information warfare.

Naval Information Warfare Systems Command (NAVWAR) impacts San Diego’s economy through several channels to NAVWAR’s impact.

Contracts and Payrolls Largest Contributors to NAVWAR’s Impact

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</tr>
<tr>
<td>PATENTS</td>
</tr>
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<td>GOVERNMENT PURCHASE CARDS</td>
</tr>
<tr>
<td>STEM</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

(See Exhibit N7) Small businesses received more than $500 million, or one-third of NAVWAR contracts, in FY 2018 (See Exhibit N10). Some of these small firms included Xiom Engineering Systems, Sentek Consulting, Systems Technology Forum, and Cameron Bell Corporation. (See Exhibit N11)

Companies, both large and small, receiving NAVWAR contracts are dispersed throughout San Diego County. Some of the largest clusters, in terms of the value of contracts, are in Carlsbad, Serra Mesa, and in San Diego near NAVWAR’s offices. Engineering, communications equipment, computer system design, specialized equipment manufacturing, and research and development represented the primary areas receiving NAVWAR contract awards in FY 2018 (See Exhibit N12). This reflects NAVWAR’s mission to provide communications, network capabilities, and technology to support information warfare.

Naval Information Warfare Systems Command (NAVWAR) impacts San Diego’s economy through several channels to NAVWAR’s impact.

Contracts and Payrolls Largest Contributors to NAVWAR’s Impact
This education level is necessary to the types of jobs that NAVWAR's total staffing. Analysis, contracting support, and quality control involve about 20% technology (IT) or science, while almost another 30% are supporting information supports. Nearly 40% of NAVWAR's employees work in engineering benefits, totaled nearly $800 million. NAVWAR's workforce is highly employees. Their combined compensation, including wages and in FY 2018, with about 270 military members and 4,900 civilian military members and 4,900 civilian operations in San Diego. In FY 2018, NAVWAR awarded $1.6 billion to firms with operations in San. In FY 2018 (See Exhibit 14). In FY 2018, NAVWAR awarded $1.6 billion to firms with operations in San Diego County, a more than 30% jump over the prior fiscal year. An estimated $1.8 billion in contracts were awarded regionally in FY 2018, NAVWAR awarded $1.6 billion to firms with operations in San Diego County and $0.8 billion to firms with operations in San Diego County. Such as theme parks, the approximately $1 million was spent on different spent on local transportation, while hotels totaled nearly $21 million, while outlays for food equaled about $9 million. Another $5 million was spent on local transportation, while approximately $1 million was spent on different types of entertainment, such as theme parks, the NAVWAR's headquarters' presence and large employee base help San Diego's tourism industry. Dollars from outside the area come from several local conventions held in San Diego, attracted to NAVWAR's contracting importance, as well as government and business visitors to NAVWAR offices; and friends and family visiting NAVWAR employees in San Diego County. The annual “WEST Symposium” is the largest maritime convention on the west coast, organized by the Naval Institute and Armed Forces Communications & Electronics Association (AFCEA), with a focus on NAVWAR's vital role in leading C4ISR technology. Additionally, the annual “Gold Coast Symposium” is hosted by the National Defense Industrial Association (NDIA) in partnership with the Navy. This convention is aimed at small businesses interested in NAVWAR contracts as a prime contractor or as a sub-contractor to the many large businesses holding NAVWAR contracts. Several other smaller industry conferences related to NAVWAR are held in hotels and other facilities throughout San Diego each year. In the absence of NAVWAR these meetings would likely be held somewhere other than San Diego.
NIWC Pacific holds nearly 500 active patents. These cover such areas as basic electric elements, computing and calculating, electrical communications, instrument measurement and testing, and optics. Including the impact of existing and new activities, patents contributed an estimated $18.6 million to San Diego’s economy in FY 2018.

NAVWAR San Diego represents an important conduit for transferring technology from the government to the private sector. A Cooperative Research and Development Agreement (CRADA) provides for NIWC Pacific and a non-federal government partner to collaborate in a Research and Development Agreement (CRADA) provides for NIWC Pacific to develop and produce technologies that meet the needs of the naval forces. NIWC Pacific manages CRADAs to facilitate partnerships with the private sector to improve the efficiency and effectiveness of the national defense. NIWC Pacific has been successful in developing and producing technologies that meet the needs of the naval forces.

6. GOVERNMENT PURCHASE CARDS

Department of Defense organizations often use Government Purchase Cards (GPCs) for “micro-purchases” of less than $5,000. GPC spending by NAVWAR in San Diego totaled an estimated $7.3 million in FY 2018. This spending benefited a wide variety of businesses selling or producing electronics equipment and components, hardware and abrasives, instruments and laboratory equipment, and providers of various business services.

7. STEM OUTREACH

NAVWAR is actively involved in bridging any gaps within STEM through its involvement with local K-12 schools and universities. Through its diversity initiative, NAVWAR hosts numerous events and projects with young students to create interest within STEM. It provides internship opportunities for local high school and college students and is highly involved in providing mentoring partnerships. It also sponsors various events to foster interest in STEM among students, organizes classroom demonstrations, and participates in science fairs.

NAVWAR employees devote sizable amounts of their own time to supplementing STEM education and to encourage young people to pursue STEM careers. In FY 2018, 465 NAVWAR employees contributed nearly 13,000 hours in support of STEM education and career advancement. This contribution to STEM education was equal to an estimated $1.0 million in FY 2018.

In late 2018, Navy Region Southwest and Naval Base Point Loma embarked upon an ambitious complete redevelopment that includes 70 acres of Naval Base Point Loma Old Town Complex, the facility where NAVWAR is located. Businesses are being offered the opportunity to redevelop the site in exchange for new government facilities in a “public-private venture” agreement. This redevelopment will bring NAVWAR a modern, secure worksite, estimated at 1.5 million square feet, while enabling the community to benefit through a modern technology hub in the Midway District. The redevelopment is likely to have a large economic impact on the San Diego region, supporting architecture, construction, investment, and engineering firms as it is built and, then, technology and other local businesses when it is completed.

Additionally, the San Diego Association of Governments (SANDAG) is working with the Navy through an intra-governmental agreement as it pursues the Naval Base Point Loma Old Town Complex as an ideal location for a major transportation hub with a link to San Diego International Airport’s redevelopment of Terminal One.

WHAT SAN DIEGO BRINGS TO NAVWAR

With nearly half of its workforce positioned in the San Diego area, NAVWAR leverages many of the region’s unique advantages. These include its close proximity with operational forces, training ranges, high-tech industry and world-class universities.

Its co-location with large numbers of Navy and Marine Corps operational forces is a primary advantage. This supports the close interaction necessary to ensure optimal installation, testing, evaluation, and support for NAVWAR’s primary customers. This consistent engagement facilitates the development and procurement of new capabilities that best match fleet requirements. On a broader scope, the robust industry and world-class universities. With nearly half of its workforce positioned in the San Diego area, NAVWAR leverages many of the region’s unique advantages. These include its close proximity with operational forces, training ranges, high-tech industry and world-class universities.

The high-tech nature of NAVWAR’s information warfare capabilities requires close partnership with industry. San Diego has a long tradition of leadership in the telecommunication and defense industries and a technology-rich workforce to support these endeavors. This has fostered growth of a wide variety of small and large businesses with the structures in place that align with the technical and security requirements of defense acquisition. This hub of qualified vendors supports an effective and competitive acquisition process. Further, the density of cybersecurity industry expertise benefits the core function of NAVWAR’s mission.
High-tech expertise in San Diego extends beyond industry and critically involves academia. NAVWAR is surrounded by exceptional universities and colleges that support its mission in key areas. There are opportunities for formal cooperative research agreements that particularly benefit the fundamental technology development areas for new capabilities. NAVWAR promulgates Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) program solicitations to conduct research and development that is of mutual benefit to various small firms and NAVWAR. SBIR is small business exclusive, while STTR requires the small business to have a research partner consisting of a university or other qualified non-profit research institution.

San Diego’s set of world class universities provides access to a vital talent pipeline as students assume internships or move into the workforce after graduation. The region’s academic institutions provide a convenient access for the continued professional development of NAVWAR’s current employees. These university links are particularly important as NAVWAR must attract and retain future talent in the highly competitive technology-centric career fields.

The location in San Diego of NAVWAR headquarters, PEO C4I, PEO Space Systems, and NIWC Pacific, along with the concentration of operational fleet units, training ranges, high-tech industry, and academia, provides a nexus of capability that is truly unique.

**WHAT NAVWAR BRINGS TO SAN DIEGO**

NAVWAR benefits the San Diego region in a wide variety of ways. It is the region’s 15th largest employer. (See Exhibit 20) It provides the high-paying jobs sought by communities throughout the world. It offers positions to new graduates of the region’s colleges and universities and helps build the technical expertise sorely needed by enterprises across the San Diego region.

NAVWAR has helped to build some of the industry’s primary clusters. For example, two-thirds of its employees work in cybersecurity, one of the region’s rapidly growing areas. (See Exhibit 21) NAVWAR’s role in technology transfer is an important driver of innovation and the incubation of new enterprises.

NAVWAR’s large volume of contracts support both large and small businesses and have helped San Diego firms to expand. Fueled by both collaborative innovation and an entrepreneurial drive, many small businesses in the San Diego region were founded and have grown as a product of doing business with NAVWAR. Moreover, the operation and maintenance of its San Diego facilities, along with numerous small-scale purchases, provide many local firms with a wide range of business growth opportunities.

Finally, the desire of NAVWAR’s employees to give back to San Diego, such as through the hours they dedicate to support STEM education, is particularly noteworthy. NAVWAR and the San Diego region are the model for how military and civilian communities can work with great synergy that is mutually beneficial to both.
Space warfare. The Trump Administration has identified space warfare as a key link in the Nation’s security. NAVWAR’s cluster of firms well positioned in this field.

Information warfare. The DOD considers information warfare (IW), including cybersecurity, to be a major priority as military strategies and tactics change worldwide. San Diego has a strong cluster of firms well positioned in this field.

Space warfare. The Trump Administration has identified outer space as a key link in the Nation’s security. NAVWAR’s presence and the expertise of San Diego firms in satellite and related technologies make the region an important enabler of this strategy.

Unmanned systems. As the DOD relies more on unmanned vehicles and weapons systems, San Diego’s leading drone industry is well positioned to develop existing and new technologies.

Troop readiness. The Administration has emphasized the need for enhanced troop training and San Diego possesses an ideal setting for such training. Two-thirds of the Nation’s military training airspace is in the Southwest. The need for the Armed Forces to work together can be honed in San Diego where large numbers of Navy, Marine Corps, Coast Guard, and Reserve personnel can train together.

Equipment readiness. Requirements to repair and upgrade aircraft, ground vehicles, weapons, and other military needs will find a vast supply network in the San Diego region. Aircraft readiness will bring additional orders to the Fleet Readiness Center Southwest at Naval Air Station North Island (NASNI) and to various private aircraft manufacturers. San Diego firms producing replacement parts for vehicles, weapons, and other military requirements will also be key to meeting force requirements.

Special operation forces. The proliferation of unconventional and localized conflict has made the use of special operations forces, such as the Navy SEALs on Coronado and the 1st Marine Special Operations Battalion at Camp Pendleton, increasingly important.

Emphasis on conservation and the environment. The military’s focus on conserving resources, ranging from water to energy, and safeguarding the environment where it operates will align with efforts promoted both by California and the San Diego region.

**SAN DIEGO’S STRENGTHS**

San Diego possesses several characteristics that give it a comparative advantage over other regions in attracting military dollars:

- Rebalance to the Pacific Region. Although the Middle East and Europe will continue to demand attention, the DOD remains committed to a fleet mix of approximately 60% focused on the Pacific versus 40% in the rest of the world. San Diego’s strong military infrastructure on the West Coast places it in a prime position to receive newly built or redeployed ships.

- Shipbuilding. The Trump Administration has set a goal of increasing the number of Navy ships to 355 by approximately FY 2050 up from a count of 286 ships at the beginning of FY 2019. This can be achieved by building new ships and extending the lives of existing ones. San Diego’s robust shipbuilding and repair industry stands to benefit significantly. The 355 goal could be achieved earlier by stretching ship life times by seven to ten or more years by periodically putting them in dry dock for maintenance and upgrade. Employment at San Diego’s shipyards has recently reached about 7,600, not far from the recent peak of 8,000 seen in 2015.

- Information warfare. The DOD considers information warfare (IW), including cybersecurity, to be a major priority as military strategies and tactics change worldwide. San Diego has a strong cluster of firms well positioned in this field.

- Space warfare. The Trump Administration has identified outer space as a key link in the Nation’s security. NAVWAR’s presence and the expertise of San Diego firms in satellite and related technologies make the region an important enabler of this strategy.

**CONSTRAINTS AND RISKS**

Significant constraints and risks could limit the potential of defense as an economic driver in San Diego:

- Housing supply. San Diego’s supply of new housing is not keeping pace with the demands of the military as the number of personnel in the region expands. The total housing stock in San Diego is rising by about 8,500-9,000 units per year, while the number of military personnel based in San Diego is projected to climb by about 7,500 in FY 2020. While the DOD offers a BAH to address some of San Diego’s higher housing costs, many military personnel find it insufficient. High housing costs are also a constraint for private defense companies attempting to attract or retain employees.

- Labor supply. With the jobless rate hovering between 3.1% and 3.2% in San Diego County, companies are facing difficulty filling open positions while quit rates among existing employees rise. Government and private firms in the defense sector find it insufficient. High housing costs are also a constraint for private defense companies attempting to attract or retain employees.

- High taxes. Despite California’s and San Diego’s weather and quality-of-life advantages, income, property, and other taxes represent an impediment. The $10,000 limit on the amount of state and local taxes (SALT) that can be deducted from federal income returns has worsened the problem for some homeowners. California’s and San Diego’s population of military retirees has dropped significantly in part due to the State’s taxation of military benefits. California is only one of eight states that fully taxes such benefits.

- Tariffs. Defense units and contractors reliant on aluminum, steel, electronic components, and other materials and products could face continued or additional price increases due to tariffs. Some buyers may be able to shift suppliers to other nations not subject to the tariffs and some of the potential price increase could be buffered by a stronger dollar. While all regions, along with San Diego, will be impacted, the effects of tariffs will diminish the strength of any defense budget increase.

- Veterans. The 239,000 Veterans who currently reside in San Diego County face a multitude of challenges, including mental and physical disabilities, housing, job placement, and the assimilation into civilian life. The San Diego 2019 Point-In-Time Count identified found that 10% of the 8,100 individuals experiencing homelessness in the County were Veterans.

- Political shifts. While current policy is focused on bolstering the Nation’s defense and there is little concern about a growing deficit and rising debt, a changing landscape in Washington could quickly change those priorities. Attention to the Nation’s budget deficit, likely to exceed $1 trillion in FY 2020 and in future years, and a shift to social priorities could end the steady flow of defense dollars into the San Diego region.
RECOMMENDATIONS

To safeguard the military’s presence and contribution to San Diego’s economy, several actions could be supportive in the coming year:

- San Diego’s political, corporate, educational, and non-profit organization leaders need to remain informed on the symbiotic relationship between the region and the Nation’s defense strategy and continue to carry that message to Sacramento and Washington. This is critical as local governments and economic development areas throughout the country compete for a larger share of defense dollars.

- Military leaders need to be a key part of the conversation with local government officials, builders, and developers to design housing policies that will accommodate increased numbers of military personnel now envisioned for the region as the number of ships homeported in San Diego rises.

- Military and transit leaders need to work more closely together to insure that the region’s transportation network, including buses, rail, and bike lanes, are aligned with the needs of military installations and their personnel.

- California should eliminate or substantially reduce its taxation of the pensions of military retirees. While there would be a short-term revenue loss, it would be relatively small and offset by rising revenues over time. The continued loss of some of the State’s most valuable citizens is a great economic and social cost.

- Services for those experiencing homelessness offered by various non-profit organizations, the VA, DOD, local government agencies, and private companies need to be better coordinated with designated areas of specialization. Individual programs need to be evaluated for their effectiveness. This could help identify gaps, while eliminating redundancies and encouraging organizations to focus on areas where they have a comparative advantage.

- Companies and government agencies need to further expand their internal employee education and training programs to keep pace with technological advances. Apprenticeship programs should be considered or expanded among all types of defense employers.

- NAVWAR, Navy Medicine, the VA, and the region’s universities, colleges, and private firms need to deepen and broaden their relationships. This would facilitate the further exchange of the large amounts of valuable technology between defense research labs, academia, and the private sector.

- DOD entities, the Coast Guard, and the VA should facilitate the efforts of San Diego retirees to volunteer their time and skills to provide assistance.

- The City of San Diego and other cities in the County need to work with the military to help achieve their Climate Action Plans (CAPs) and reduce Greenhouse Gas (GHG) emissions. Military installations have often been at the leading edge of implementing energy conservation and renewable energy systems.

CONCLUSION

The network of Sailors, Marines, those who serve in the Coast Guard, and members of the Reserves, civilian employees, Veterans, retirees, aerospace firms, shipbuilders, electronics companies, software developers, researchers, and the various supply chains in San Diego represent a vital military ecosystem. This ecosystem is critical to the nation’s defense and delivers enormous economic value to the region.

Even more important than the economic impact on San Diego are the individuals connected with the military. As employees and residents, they represent vital roles in local schools, non-profit organizations, churches, and the overall community.

The values upheld by San Diego’s military service branches set high standards for the region:

The U.S. Navy and Marine Corps: Honor, Courage, and Commitment

The U.S. Coast Guard: Honor, Respect, and Devotion to Duty

The U.S. Department of Veterans Affairs: Integrity, Commitment, Advocacy, Respect, and Excellence

These values are underscored in the third verse of the Navy Hymn.

The Military and their families are a vital part of San Diego’s fabric and help make the region exceptional.

“Upon the chaos dark and rude,
And bid its angry tumult cease,
And give, for wild confusion, peace;
Oh, hear us when we cry to Thee,
For those in peril on the sea!”

1The Navy Hymn, with the original words written as a poem in 1860 by William Whiting.
Two-Thirds of NAVWAR Employees Work in Cybersecurity

EXHIBIT N22

NAVWAR Ranks as San Diego County's 15th Largest Employer

EXHIBIT N21

NAVWAR Employees Dispersed Across County

EXHIBIT N20

Engineering and IT Lead NAVWAR’s Hiring

EXHIBIT N19

NAVWAR Employees Represent Educated Talent Pool

EXHIBIT N18

NAVWAR Employees Dispersed Across County

EXHIBIT N17

NAVWAR Employees Dispersed Across County

EXHIBIT N16

NAVWAR Important Catalyst to San Diego’s Cyber Economy

EXHIBIT N15

NAVWAR Important Catalyst to San Diego’s Cyber Economy

EXHIBIT N14

NAVWAR Employees Represent Educated Talent Pool

EXHIBIT N13

NAVWAR Employees Support STEM Education

EXHIBIT N12

NAVWAR Active in Patents

EXHIBIT N11

NAVWAR Employees Support STEM Education

EXHIBIT N10

NAVWAR Employees Support STEM Education

EXHIBIT N9

NAVWAR Employees Support STEM Education

EXHIBIT N8

NAVWAR Employees Support STEM Education

EXHIBIT N7

NAVWAR Ripples Across San Diego Economy

EXHIBIT N6

NAVWAR Influences Region Through Several Channels

EXHIBIT N5

NAVWAR Ripples Across San Diego Economy

EXHIBIT N4

NAVWAR Contracts by State

EXHIBIT N3

NAVWAR's Macro Funds Flow

EXHIBIT N2

NAVWAR's Macro Funds Flow

EXHIBIT N1

San Diego’s VA Supports the Region

EXHIBIT 16

San Diego Veterans Receive $2.6 Billion in Benefits

EXHIBIT 15

More Ships Head for San Diego

EXHIBIT 14

On an Average Day, the U.S. Coast Guard

EXHIBIT 13

Marine & Navy Personnel Dispersed Across Various Installations

EXHIBIT 12

On an Average Day, the U.S. Coast Guard

EXHIBIT 11

NAVWAR Ripples Across San Diego Economy

EXHIBIT 10

NAVWAR Ripples Across San Diego Economy

EXHIBIT 9

NAVWAR Influences Region Through Several Channels

EXHIBIT 8

NAVWAR Influences Region Through Several Channels

EXHIBIT 7

NAVWAR Influences Region Through Several Channels

EXHIBIT 6

NAVWAR Influences Region Through Several Channels

EXHIBIT 5

NAVWAR Influences Region Through Several Channels

EXHIBIT 4

NAVWAR Influences Region Through Several Channels

EXHIBIT 3

NAVWAR Influences Region Through Several Channels

EXHIBIT 2

NAVWAR Influences Region Through Several Channels

EXHIBIT 1

NAVWAR Influences Region Through Several Channels