PREPARING FOR DUTY
State Policy Options to Sustain Military Installations

By Jennifer Schultz

With Support from the U.S. Department of Defense

William T. Pound
Executive Director
7700 East First Place
Denver, Colorado 80230
(303) 364-7700

444 North Capitol Street, N.W., Suite 515
Washington, D.C. 20001
(202) 624-5400

www.ncsl.org

August 2016
Contents

Introduction..................................................................................................................3
Military Installations in the States..................................................................................3
The Military’s Evolving Context....................................................................................4
  Federal Defense Cuts and Effects on States...............................................................4
  Base Realignment and Closure...................................................................................5
State Role in Managing Military Operations...............................................................6
Encroachment and Compatible Land Use.......................................................................6
  Effects on Military Missions......................................................................................7
  Consequences for Surrounding Communities............................................................8
Importance of Action....................................................................................................8
  Federal Roles.............................................................................................................8
  State Roles..............................................................................................................9
  NCSL Task Force on Military and Veterans Affairs..................................................9
State Policy Options......................................................................................................10
  Military Advisory Bodies..........................................................................................10
  Case Study: Florida Defense Support Task Force....................................................11
  Commanders’ Councils.............................................................................................11
Funding Programs to Preserve or Enhance the Value of Military Installations............12
  Grant Programs........................................................................................................12
  Zone Programs........................................................................................................13
  Appropriations.........................................................................................................14
Land Use Planning.......................................................................................................14
  Enhanced Communication and Notification...............................................................15
  Incorporating Military Installations into Local Land Use Plans...............................16
  Requiring Compatible Land Use...............................................................................17
  Protecting Land Near Military Bases through Formal Designation..........................18
Land Conservation.......................................................................................................19
  Purchasing Land or Development Rights.................................................................19
  Exchanging Land.....................................................................................................20
  Agriculture and Conservation Easements..................................................................20
  Sentinel Landscapes..................................................................................................22
Energy Development Compatibility with Military Mission.......................................23
  Reducing Light Pollution.........................................................................................25
  Limiting Noise Impacts from Military Activities on Surrounding Communities........27
Real Estate Disclosure..................................................................................................27
Conclusion.....................................................................................................................28

Notes..............................................................................................................................29
Introduction

Roughly 1.3 million people currently are serving in the U.S. armed forces, 22 million are veterans and more than 420 military installations exist in the 50 states, the District of Columbia, Guam and Puerto Rico. U.S. military operations touch every state in some way, and state legislatures are playing an increasingly substantial role in military issues.

Military installations—which may also be referred to as bases, camps, posts, stations, yards or centers—are facilities that sustain the presence of U.S. forces at home and abroad. Installations located within the United States and its territories are used to train and deploy troops, maintain weapons systems and care for the wounded. Installations also support military service members and their families by providing housing, health care, child care and on-base education. These components of daily living are connected to the quality and condition of military base facilities and workforces. State legislatures have an important role in managing relations between existing military installations and surrounding communities, especially in regard to issues related to military base or mission change, growing local development and incompatible land uses that may threaten the future viability of the military presence.

This report—produced by the National Conference of State Legislatures (NCSL) with support from the U.S. Department of Defense (DoD) Office of the Assistant Secretary of Defense (Energy, Installations and Environment)—aims to provide state legislatures with an overview of state responsibilities and related policy options concerning military affairs and state and local relationships with military installations. The report is a synthesis of original, in-depth legal and legislative research, as well as interviews with state legislators, legislative staff and other key state officials. The focus throughout the report is on state-level activities—especially those created through statute or regulation—to ensure a suitable environment for military installations to carry out their missions and sustain the presence of U.S. forces at home and abroad.

Military Installations in the States

All states have a military installation located within their boundaries. The states with the most installations are California, Florida, Georgia, Maryland, Texas and Virginia. In addition, of the 1.1 million active duty personnel stationed within the United States in 2014, almost half were located in five states (California, Georgia, North Carolina, Texas and Virginia).

The DoD contributes billions of dollars each year to state economies through the operation of military installations. This spending helps sustain local communities by creating employment opportunities across a wide range of sectors, both directly and indirectly. Active duty and civilian employees spend their military wages on goods and services produced locally, while pensions and other benefits provide retirees and dependents a reliable source of income. States and communities also benefit from defense contracts with private companies for equipment, supplies, construction and various services such as health care and information technology. When reflecting on a recent Texas legislative session, Representative Dan Flynn (R)—co-chair of the NCSL Task Force on Military and Veterans Affairs—commented that, "[sustaining]
military installations . . . was vitally important because of their large economic impact as a source of jobs, security and their interdependence with the communities that surround them.\textsuperscript{45}

At least 21 states have recently completed or are in the process of completing studies to quantify the direct and indirect effects of military presence on a state’s economy.\textsuperscript{5} Impacts generally include salaries and benefits paid to military and civilian personnel and retirees, defense contracts, local business activity supported by military operations, tax revenues and other military spending. In 2013, for example, military installations in North Carolina supported 540,000 jobs, $30 billion in personal income and $48 billion in gross state product.\textsuperscript{7} This amounts to roughly 10 percent of the state’s overall economy.

In Hawaii, a state with more than 10 installations, defense-related expenditures in 2011 supported 101,533 jobs, $3.5 billion in earnings and $12.2 billion in gross state product (18.4 percent of the total).\textsuperscript{8} Even states with relatively small military footprints have reported significant economic impacts. A study in Massachusetts, for example, found that by investing $9.1 billion in FY 2011, military installations contributed another $4.6 billion in spending and added more than 30,600 jobs to the state economy.\textsuperscript{9}

The Military’s Evolving Context

The economic benefits created by military installations are susceptible to change at both the federal and state levels. While states previously worked to accommodate military installations in a period of expansion and growth, recent events such as the drawdown of troops in Iraq and Afghanistan, federal budget cuts, and potential future rounds of Base Realignment and Closure (BRAC) have left government officials uncertain of the future role and sustainability of military installations. These trends have been a driving force behind many states’ decisions to commission the kinds of studies described above that define the military activity and infrastructure that exists in the state. Economic impact studies allow states to better advocate on behalf of their installations and plan for future growth or restructuring.

Federal Defense Cuts and Effects on States

In August 2011, Congress passed the Budget Control Act, which contained provisions known as “sequestration.” One intent of the law was to reduce the federal deficit by $1.2 trillion over nine years, which—if another deficit reduction agreement could not be made—would be accomplished by indiscriminate cuts to defense and non-defense discretionary spending. Because Congress failed to reach an alternative deficit reduction agreement in the fall of 2012, $85 billion in sequestration cuts for FY 2013 began March 1, 2013, split evenly between defense and nondefense spending.\textsuperscript{10}

While dealing with ambiguity over sequestration and whether Congress would pass a continuing resolution (CR—a continuation of current funding levels) for FY 2014, DoD officials have made a number of deep cuts to programs and implemented civilian employee furloughs and hiring freezes. The vagueness of future funding for defense programs has hampered the military’s long-term planning for contracts spending and acquisitions. It also affects installations’ ability to train soldiers and maintain readiness (a term used by the military community to describe the preparedness of troops for combat).\textsuperscript{11}
Although cuts in defense spending are indirect, they are likely to affect state economies, especially in states that have many military bases and personnel or otherwise rely heavily on defense expenditures. In the Spring 2013 NCSL State Budget Update, states overwhelmingly reported that defense-related furloughs, layoffs and other personnel issues were a source of great concern because they are likely to directly affect state revenues. For example, Hawaii officials noted that wage reductions to defense and contract personnel will result in a loss of business activity and related tax collections. States also reported concern about reductions to defense-related industries and procurement. Other potential impacts include the ability of the National Guard to mobilize in a timely fashion (reported by Mississippi and Pennsylvania) and the fact that states would need to use own-source funds to offset defense spending reductions (reported by Idaho and Montana).

Base Realignment and Closure

The federal Base Realignment and Closure (BRAC) process also puts military bases located in the states at risk. BRAC is the principal method used by DoD to reduce excess infrastructure and realign—to add to or remove a significant number of personnel from—bases to meet changes in the size or structure of its forces. State economies can suffer if bases close but, on the other hand, state economies are likely to gain where military personnel are transferred. When a base is closed or realigned to relocate missions, operations and training to other bases, the reduction in military activity can lead to a considerable loss of jobs and tax revenue, which may cause states and communities to identify and implement strategies to stimulate new economic activity. When a base closes, communities also must decide how to repurpose or redevelop the area. Conversely, a realignment that increases military operations and adds personnel to a base—referred to by DoD as “mission growth”—can generate additional economic activity, but can also strain public infrastructure when it becomes necessary to accommodate relocating military personnel and their families.

The current BRAC process dates to 1988, when a congressional measure supported by the Reagan administration called for an independent bipartisan commission that would create BRAC recommendations aimed at improving military capability. Under the measure, a list of base closures and realignments would be approved or rejected by both the president and Congress. The Defense Base Closure and Realignment Act of 1990 amended the law to require DoD to provide an initial base closure list from which the independent panel would begin its selection process.

Although procedures have changed, the 1990 law, as subsequently amended, has governed the BRAC process since its enactment. BRAC rounds were completed in 1988, 1991, 1993, 1995 and 2005 under its provisions; the 2005 BRAC round ended in 2011. BRAC 2005 made an unprecedented amount of changes, totaling 22 major closures and 33 major realignments. The changes were estimated to save $35.6 billion, although a 2012 GAO report estimates that cost savings will not be fully realized until 2018. In March 2012, the Deputy Under Secretary of Defense (Installations and Environment) testified in a congressional hearing that BRAC 2005 reduced capacity by 3 percent, leaving roughly 20 percent excess capacity based on 2004 estimates. DoD requested two more rounds of BRAC for 2013 and 2015 based on these conclusions.
State Role in Managing Military Operations

While states must be constantly aware of changes at the federal level, they also have a unique role in military administration.

Over 470,000 National Guard troops live and serve in 3,000 communities across the country. The National Guard has a dual mission—each soldier or airman is a member of both the state National Guard and the U.S. Army or U.S. Air Force. When National Guard units are not mobilized under federal law, they report to the governor of their respective state, territory or the commanding general of the District of Columbia National Guard. Each National Guard organization is supervised by the adjutant general of the state or territory.

The National Guard is a unique reserve force with both state and federal responsibilities. At the state level, the National Guard provides protection of life and property and preserves peace, order and public safety. Governors, as commanders-in-chief, can activate and deploy the National Guard in response to state and local emergencies such as floods, earthquakes, wildfires and other natural disasters, or in response to man-made emergencies, including riots or terrorist attacks. The National Guard’s federal mission is to maintain well-trained units available for prompt mobilization during war and provide assistance during national emergencies. Under federal law, National Guard personnel can be activated to either “full-time National Guard duty” (U.S. Code, Title 32) or “active duty” (U.S. Code, Title 10).

The governor delegates authority for carrying out state active-duty missions to the adjutant general. As the head of the state military department, the adjutant general also acts as the governor’s designated homeland security advisor in many cases. Adjutants general usually serve a term concurrent with the term of the appointing governor and typically are the senior military official in the state or territory, although specific terms and qualifications are set by the legislature and vary by state.

Encroachment and Compatible Land Use

DoD relies on access to land, airspace, sea space and frequency spectrum (of light, sound and telecommunications) to provide its forces a realistic training environment that will prepare them to face combat and complex missions around the globe. For this reason, many military installations were strategically located in relatively isolated areas, surrounded by agricultural or other undeveloped land, which allowed accommodation of evolving mission requirements with few constraints.

Following World War II, however, both people and businesses began moving closer to installations to take advantage of job opportunities and to provide the goods and services needed to support the installations’ operations. As communities developed, they increasingly grew closer to once-isolated installations, challenging the military’s access to valuable resources and leading to conflicts over competing land uses. According to a June 2002 GAO report, 80 percent of military installations were located in areas that were growing faster than the national average.
The term “encroachment” is used to describe the cumulative effect of incompatible development near military installations and the expansion of military operations into civilian areas. Encroachment can take many forms. From DoD's perspective, activities in surrounding communities can, for example, restrict use of military training areas, present obstacles to low-flying aircraft, interfere with night training through light pollution and degrade communication frequencies.³¹ On the other hand, military operations can create intense noise in nearby communities, threaten public safety, endanger protected species, and stress public infrastructure and services.³² These potentially competing interests can jeopardize the military’s ability to carry out its mission and could lead to closure of an installation, a likely unfavorable result for both parties.

Effects on Military Missions

The guiding principle behind military readiness is the idea that forces need to train as they fight. It is not surprising, then, that training ranges are one of the most valued assets in preparing military forces for their missions.³³ Training ranges encompass all the terrain, land cover and climate conditions that military personnel may encounter during deployment: deserts, mountains, coastal areas, urban areas, swamps, forests, plains and water.³⁴ These realistic ranges enable development of tactics and allow for weapons system testing, leading to increased combat survivability and success.³⁵

Maintaining the capacity of military installations is vital to the preservation of national security. However, civilian encroachment on military bases and associated training ranges, and on the access corridors that connect them, is making it difficult for the military to test, train and operate effectively.³⁶ DoD recognizes encroachment as a serious and growing problem for the sustainability of its domestic military installations.³⁷ The agency has identified several encroachment issues that affect or have the potential to affect military training and readiness. These include:

- Incompatible airspace and land restrictions/zoning,
- Complaints regarding airborne noise,
- Urban growth and incompatible development,
- Spectrum encroachment from cellphone towers, wind turbines, and additional development,
- Endangered species and critical habitat,³⁸
- Water quality,
- Cultural resources,
- Marine resources,
- Energy production,
- Security, and
- Climate change and natural factors.³⁹

Whenever possible, the military works around these issues by modifying the training timing, tempo, location and equipment.⁴⁰ For example, the military may limit night-time artillery practice to reduce noise or change flight paths to lessen the risk of accidents over residential areas. However, these “workarounds”
are becoming increasingly difficult and costly, which has contributed to elimination of training activities in many locations.

Consequences for Surrounding Communities

In addition to civilian development moving closer to military installations, installations may grow in terms of the size of forces, the intensity and frequency of training exercises, or the acreage of the property. These changes can create significant challenges for communities that previously had coexisted with their military neighbors for years.

As much as local residents value the economic benefits of having a military installation in their community, they also may be concerned about the negative effects of military operations, including noise, accidents, contamination, and stress on public infrastructure and services. Noise and safety concerns have long been recognized as an encroachment of the military on nearby communities. For example, low flying military aircraft create the potential for both noise and accidents during take-off, landing and training exercises. Likewise, ground-training exercises, such as artillery fire and bomb tests, generate impact noise that can adversely affect nearby residents. The potential for contamination of the air and public water supply is another concern of residents who live in close proximity to a military installation. While there are strict regulations in place to prevent contamination, water pollution can occur when contaminants from explosives or other toxic chemicals on military lands end up in streams or seep into underground aquifers. Smoke and dust generated by aircraft and other equipment also can degrade air quality well beyond the borders of military land. Finally, when a military installation grows, local communities may be faced with increased stress on public infrastructure and services, including transportation, health systems, wastewater treatment, housing and schools.

Importance of Action

The effects of encroachment on both military installations and surrounding communities will almost certainly become more serious if left unattended. Ultimately, military installations may be forced to close if unchecked growth compromises training exercises beyond sustainable levels. While many federal agencies and programs provide assistance to states and installations that are working to maintain readiness, the responsibility for managing community growth and development rests with state and local governments that exercise land use authority.

Federal Roles

In recent years, DoD has become increasingly concerned about the effects of encroachment on its ability to maintain readiness, and has implemented a variety of programs to help states, installations and surrounding communities address and manage these effects. The Readiness and Environmental Protection Integration (REPI) is a unique program created by the 2003 National Defense Authorization Act that authorizes DoD to enter into cost-sharing partnerships with states, local governments and nongovernmental organizations such as private conservation groups. REPI allows these stakeholders to
share costs of acquiring conservation easements and other land interests to create buffer areas around military installations while simultaneously preserving wildlife habitats and working lands near areas where the military tests and trains. Through Fiscal Year 2015, the REPI program has protected 437,985 acres at 88 locations across 30 states.

Working with communities since 1961, the Department of Defense Office of Economic Adjustment (OEA) has helped communities in all 50 states and several U.S. territories develop comprehensive strategies to adjust to defense industry cutbacks, base closures, force structure realignments, base expansion, and incompatibilities between military operations and local development. OEA is the only DoD entity that provides funding to states and localities to undertake compatible land use planning through the Joint Land Use Study (JLUS) program. Created in 1985, the program brings communities and the military together to study and recommend land use policies designed to balance community and military needs.

State Roles

Even though military installations are federally owned and operated, state legislatures can help support strong and lasting relationships between the military and communities. An increasing number of state legislatures have recognized the importance of protecting test, training and operational mission viability by preventing encroachment and incompatible land uses around installations. In addition, states have recognized that these actions have a positive impact on neighboring communities, local economies and wildlife habitat. Consequently, legislation enacted during the past several years has aimed to protect not only the missions of military installations, but also the well-being of surrounding communities.

NCSL Task Force on Military and Veterans Affairs

A task force of state legislators and legislative staff was created in 2007 to examine these and other issues that affect both military-community relations and the health and well-being of veterans. The NCSL Task Force on Military and Veterans Affairs, which currently includes 54 members representing 29 states, meets several times each year to study the military and veterans’ issues that are of great importance to states. Among the topics covered: mission sustainability and readiness; veteran employment initiatives and licensure; veteran and dependent education programs; veteran mental health; military family and veteran housing; tax exemptions; and access to benefits.

The task force allows state legislators and legislative staff to share best practices and innovations concerning the state role in assisting military service members and veterans and in working with nearby military installations on a variety of issues. Members of the task force, as well as outside partners, frequently note its importance as a vehicle to enable state legislators to knowledgeably take up these issues in their home states by introducing legislation. According to Representative Tim Moore (R), “[Kentucky] is honored to be the home of both Fort Knox and Fort Campbell, as well as servicemen and women from every branch of the Armed Forces. NCSL and its Task Force have been instrumental in offering initiatives to keep this tremendous partnership vibrant and mutually beneficial.”
The task force has developed policy resolutions that have been passed by NCSL’s various committees—which NCSL uses in its Washington, D.C.-based office to represent the cohesive voice of the states in the federal system—on a range of issues of relevance to DoD and its concern of encroachment. These include resolutions to support a funding increase for REPI; clarify and support the use of DoD matching funds; support a permanent tax deduction for conservation easements; preserve federal funding for the National Guard; and support the federal Farmland Protection Program. In addition to full-day policy discussions, the task force conducts site visits at bases around the country to raise awareness among state legislators on mission sustainment issues. Recent visits have included Marine Corps Base Quantico, Joint Base Lewis-McChord, Buckley Air Force Base, Joint Base Elmendorf-Richardson and Walter Reed National Military Medical Center.

**State Policy Options**

The remaining sections of this report cover a wide range of policy options that state legislatures might consider to support military-community cooperation and address encroachment and compatible land use issues. Many of these options have been examined in great depth by the NCSL Task Force on Military and Veterans Affairs, along with a significant number of states across the country. When possible, perspectives of bill sponsors, legislative staff, or other key stakeholders are included.

**Military Advisory Bodies**

One of the most comprehensive policy options for ensuring the long-term viability of a state’s defense community is to create a military advisory body to examine the unique needs of military communities and provide information to the governor and state legislature on ways to assist and strengthen them. At least 35 states and Guam currently have military advisory bodies, often in the form of a commission, council or task force. The vast majority of these groups were created in the last ten years, either through legislation or by executive order. Some are permanently housed within an agency of the administration, while others are temporary, created prior to a federal BRAC round. Minimizing the effects of encroachment around military bases is a priority for many of these advisory bodies because the extent of encroachment is a key factor in BRAC decisions.

Military advisory bodies can perform a number of functions. Most often, advisory bodies serve as a liaison between the legislature, military installations and surrounding communities and are tasked with identifying the consequences of encroachment and making recommendations for future legislative action. Advisory bodies also can review current policies, assist defense communities with programs that strengthen their relationship with nearby installations, conduct studies to support military activities, and disburse public funds for projects related to the preservation of military installations.

The number of members on a military advisory body varies widely, from six to 38 members. Most include both voting and non-voting (or ex-officio) members. Military advisory groups are composed of a broad range of stakeholders, including state legislators, the lieutenant governor, the adjutant general, heads of relevant state agencies, city and county officials, local business leaders, and active duty or retired military
officials. Members not specifically named in the legislation or executive order are appointed and often serve a set term.

**Case Study: Florida Defense Support Task Force**

The Florida Legislature created the Defense Support Task Force in 2011 with a defined mission to:

- Make recommendations to preserve and protect military installations;
- Support the state’s position in research and development related to or arising out of military missions and contracting; and
- Improve the state’s military-friendly environment for service members, military dependents, military retirees and businesses that bring military and base-related jobs to the state.54

The 13 task force members are appointed by the governor, Senate president and speaker of the House of Representatives.55 The governor has designated the lieutenant governor as the 13th member and his representative on the task force. All appointed members represent defense-related industries or communities that host military installations.56 The task force received appropriations of $5 million and $2 million for FY 2011-12 and FY 2012-13, respectively, to preserve and promote the state’s military installations and missions.57

According to the most recent strategic plan, the task force intends to complete projects over the next few years that are tailored to the needs of each installation, many of which involve taking measures to prevent future encroachment based on recommendations created by a private consulting firm.58 For example, the task force intends to advocate for the purchase of land immediately adjacent to MacDill Air Force Base, establish a system to enhance air space management at the Naval Air Station in Pensacola, and complete implementation of a JLUS to ensure that merging commercial and military activities around Panama City can each meet their objectives.59 In the long term, the task force plans to identify areas where state action could encourage sustainability of military installations, expand state support for military families and veterans, and strengthen defense-related working relationships with a number of state agencies.60 At the federal level, the task force has contracted with a consulting firm specializing in the BRAC process to advocate on behalf of Florida’s military installations.61 Each initiative outlined in the strategic plan bolsters the governor’s vision that Florida will continue to be the most military-friendly state in the nation.62

**Commanders’ Councils**

Commanders’ councils—comprised of the commanders of military installations in a state or region—have proven useful in strengthening military, state and community relationships.63 They provide a central source of information for state government and local communities and serve as a forum to exchange ideas on policies that affect the military and mission readiness. Commanders’ councils exist in five states—Arizona, Florida, North Carolina, Texas and Washington.64

The North Carolina Commanders’ Council was established in 2008 to serve as DoD’s primary contact with the state.65 The council works with the state to address the challenges facing military installations and
military service members and their families. The council has recognized that the various effects of encroachment pose a significant challenge for the military and the state as a whole. Specifically, the council is concerned about incompatible development, restrictions on the use of airspace and coastal areas, and radio frequency disturbances. In 2012, Governor Beverly Eaves Perdue signed an executive order directing the secretary of each cabinet agency to designate a military affairs awareness coordinator to keep abreast of commanders’ council activities and inform them of any agency initiatives that might affect military operations.66

The Texas Commanders’ Council operates in much the same way. Formally established by the Legislature in June 2013, the council plays a vital role in facilitating intergovernmental dialogue between all branches of service and the state of Texas.67 The law requires members of the Texas Military Preparedness Commission to meet with the commanders’ council at least once each year to discuss the challenges facing military installations and to develop innovative solutions to improve the military climate in the state.

Funding and Financing Programs to Preserve or Enhance the Value of Military Installations

States looking to secure the future of their military installations can also provide funding or financing to defense communities for projects that preserve or enhance the value of installations. These programs typically support projects for infrastructure improvements, job creation and retention, compatible land use planning and protection, and improvements to public services. Grants or loans also may be used to conduct studies or develop plans in support of a proposed project, as well as to match federal funding. In most cases, funding comes from general appropriations or bond sales. Thirteen states—Alaska, Arizona, California, Florida, Georgia, Indiana, Kansas, Maryland, New York, Oklahoma, Rhode Island, Texas and Utah—have some type of grant or loan program in place.68 Several states also have made one-time appropriations to prepare for or minimize the effects of BRAC decisions.

Grant Programs

Florida and Texas have established the most wide-ranging programs, offering financial assistance to defense communities for projects that not only stimulate the local economy, but also generate significant benefits for nearby bases. The Florida Legislature established both the Defense Reinvestment Grant Program and the Defense Infrastructure Grant Program in 1999.69 Both programs are administered by Enterprise Florida Inc., the principal economic development organization for the state.

The Reinvestment Grant Program supports community-based activities that protect existing military installations, diversify the economy of a defense-dependent community, and develop plans for reusing closed or realigned installations.70 Along the same lines, Florida’s Defense Infrastructure Grant Program supports projects deemed to have a beneficial effect on the value of installations within the state. Infrastructure projects funded under the program include those related to encroachment, transportation, utilities, communications, housing, environment and security. No limit is set for the amount of any grant awarded, although a matching contribution from the county or local community may be required. For FY 2014-15, the state awarded a combined $2,450,000 in grants to 13 counties.71 Okaloosa County, home to
Eglin Air Force Base, received $300,000 to help sustain the defense industry’s $7.5 billion economic impact in that region. In addition, the state awarded more than $700,000 through another grant program of the Florida Defense Support Task Force. According to the Governor Rick Scott’s press release, the funding will support four projects to strengthen military bases ahead of any potential BRAC actions, thereby “protecting more than $73.4 billion in economic impact, and more than 758,000 jobs that the defense industry supports in the state.”

In Texas, the Military Value Revolving Loan Fund provides a low-cost source of financing to eligible defense communities for projects designed to enhance the value of a nearby installation, minimize the negative effects of a BRAC decision, and accommodate new or expanded military missions resulting from a BRAC decision. State funding is obtained through sale of general obligation bonds. As of FY 2012, more than $49 million in loans had been allocated to defense-dependent communities for a variety of projects; the minimum loan amount is $1 million.

The Rhode Island General Assembly enacted legislation in 2014 creating the national security infrastructure fund and two distinct grant programs—the Military Facility Protection and Defense Economy Community Reinvestment programs. Lawmakers enacted the legislation one month after the Rhode Island Defense Economy Planning Commission released its report on the economic impact of the state’s defense industry, estimated at $3.7 billion annually. The defense sector employs 33,000 workers and is the highest wage-paying sector in the state.

The Military Facility Protection Program supports efforts related to mission sustainment, encroachment and base retention. Specifically, grants are awarded to (1) improve infrastructure; (2) secure property to protect against encroachment; (3) support best practices in energy efficiency savings initiatives at military bases; (4) support public-private partnerships for utility, housing and transportation services; and (5) increase the mission-related capabilities of bases located within the state. The second program is intended to assist defense-dependent communities in developing economic diversification strategies that repurpose surplus defense properties.

Zone Programs

Four states—Alaska, Georgia, Maryland and Texas—have taken a somewhat different approach, creating “military zones” to extend state and federal incentives to enterprises that support the state’s military presence. For example, the Alaska Legislature enacted legislation in 2012 creating “military facility zones” that offer low-cost loans and tax credits to municipalities and private businesses for initiatives that make it cheaper or easier for military installations to operate. Representative Steve Thompson (R), who sponsored the legislation, believes that “military facility zones will help Alaska’s bases become more efficient and better able to effectively perform their missions, strengthening the case against realignment or closure of its bases.” In addition, says Thompson, the zones “clearly demonstrate the state’s continuing and substantive support for the armed services, and help defend against the negative impacts on Alaska’s regional economies and military facilities.” Financing for projects within military facility zones is provided by the Alaska Industrial Development and Housing Authority, the Alaska Housing
Finance Corporation and other available sources. In 2014, the Legislature authorized municipalities to provide a 10-year tax exemption for property in a military facility zone that creates or supports industry, education or training opportunities.\textsuperscript{82}

Maryland has had a similar program since 2008. The BRAC Revitalization and Incentive Zone Program provides local governments with financial assistance for public infrastructure projects in well-defined areas that expect significant growth as a result of BRAC decisions.\textsuperscript{83} BRAC zones receive significant property tax benefits and priority consideration for financing assistance from various state agencies. Seven BRAC zones have been designated thus far, the largest encompassing the City of Aberdeen.\textsuperscript{84}

Georgia’s zone program is focused on creating jobs in economically distressed areas of the state. The Job Tax Credit Program provides benefits to specified census tracts which are considered less developed or have a high rate of poverty.\textsuperscript{85} A military zone designation was added in 2004, allowing census tracts located adjacent to military bases to receive the highest benefit level.\textsuperscript{86} Businesses can earn a tax credit up to $3,500 for each full-time employee hired.\textsuperscript{87}

Appropriations

In addition to these programs, several states have made a one-time appropriation to prepare for BRAC. At least five states—Alaska, Massachusetts, Mississippi, Missouri and South Carolina—have taken this action in the past five years.\textsuperscript{88} The South Carolina Military Base Task Force, for example, distributed $50,000 in March 2013 to each of the state’s four military communities to support ongoing base preservation efforts.\textsuperscript{89} The Missouri General Assembly also enacted legislation in 2013, allocating $300,000 to analyze the effects of the state’s military installations on the nation’s military readiness and economy.\textsuperscript{90} Legislators in Massachusetts approved a $177 million bond bill in 2014 for infrastructure improvements at six of the commonwealth’s military bases.\textsuperscript{91} The bill authorized $12 million immediately for projects at Hanscom Air Force Base and Barnes Air National Guard Base with the option to fund as much as $165 million in future years. The projects are designed to expand public and private sector growth for localities surrounding each installation and enhance the value of the facilities in support of national and domestic security goals.

In 2014, the Indiana General Assembly enacted legislation allowing local governments to expend money in direct support of an active military base.\textsuperscript{92} Funds are to be used for the promotion, growth and activities of the base, as well as any entity that provides services to the base.

Land Use Planning

Through land use planning, the military can be assured that its operations will not be jeopardized, while communities can continue to benefit from the jobs and other opportunities the military provides. Although development decisions are made primarily at the local level, the state legislature sets a framework in most states for how local entities carry out land use planning processes.
Enhanced Communication and Notification

One method states can use to promote compatible land use near military installations is to include all involved parties in the planning process. Many states have given the military the opportunity to participate in local land use planning, which helps local officials understand the effects of incompatible development on quality of life in communities and on military operations. Seventeen states require at a minimum that local governments notify nearby military installations of proposed land use changes. This formalized process can strengthen lines of communication and help avoid any unintentional conflicts. Methods for including the military in local land use planning include creating or expanding procedural requirements to provide military installations with notice of proposed land use changes; creating a mechanism for the military to make comments on proposed land use changes; and allowing for military representation on state or local zoning boards.

In Arizona, the Legislature enacted a measure requiring local governments within the vicinity of a military airport to consult with, advise and provide the military an opportunity to comment on land use surrounding the installation.\(^93\) In 2012, the Florida Legislature clarified its community planning statute to specify that a commanding officer’s comments must be based on appropriate data and analysis, and that the local government must consider those comments and accompanying data as they relate to the strategic mission of the base, public safety, and the economic vitality associated with the base's operations. Further, the bill created the Florida Defense Reinvestment Grant Program, in part to work with defense-dependent communities on strategies to help communities support the missions of military installations.\(^94\)

The North Carolina General Assembly enacted legislation in 2013 that requires local governments to provide written notice of proposed changes to a zoning ordinance to the commander of the military base not less than 10 days nor more than 25 days before a public hearing if the change would affect the permitted uses of land located within five miles of a military base. If the military provides comments or analysis regarding the ordinance’s compatibility with military operations at the base, the board of commissioners must consider the comments and analysis before making a final determination on the ordinance.\(^95\) Representative Rick Glazier (D), sponsor of the legislation, says that House Bill 254 will “help safeguard land adjacent to military bases by maintaining military mission capacity of the bases in those nearby areas and enhancing communication of planned land use development in those areas between local governments and bases.”\(^96\)

In Texas, a community near a military installation must seek comments and analysis from defense base authorities if the community determines that a proposed ordinance, rule or plan may affect a military base, exercise or training activities. If a community includes a municipality with a population of more than 110,000, is located in a county with a population of less than 135,000 and has not adopted airport zoning regulations, the community must notify the defense base authorities of any proposed ordinance change and its compatibility with base operations within eight miles of a base.\(^97\)
Incorporating Military Installations into Local Land Use Plans

States delegate to local governments the responsibility to develop and implement land use planning documents and zoning regulations. “Comprehensive plans,” also known as general plans or master plans, are the foundation for local land use planning and, as such, serve as a blueprint for the growth and development of a community over time.\(^9\) In most cases, a comprehensive plan consists of diagrams or maps illustrating the location of existing land uses, as well as written text outlining development goals for a range of uses such as housing, transportation, utilities and recreation.\(^9\) While planning occurs at the local level, states play a role in directing the planning process. Most states require local governments to complete a comprehensive plan, although some are more prescriptive than others in regard to its content.

Local planning and zoning ordinances can be used to resolve land use issues near military bases, and state legislatures can require that lands near boundaries of these areas be set aside only for compatible uses. Eleven states—Arizona, California, Colorado, Florida, Kansas, Kentucky, Nevada, South Carolina, Texas, Virginia and Wisconsin—require or encourage municipalities to anticipate future growth patterns near military installations and include policies or guidelines to account for this growth in their comprehensive plans.\(^10\) This type of proactive land use planning can help channel new growth into appropriate areas and enhance communication with nearby military installations.

Legislatures in California and Kentucky recognized the need for more consistent land use planning around military installations in the early 2000s. Laws in both states require local governments to consider the effects of future growth on military activities in their local planning documents and place an emphasis on obtaining information from military authorities to accurately determine the needs of each installation.\(^10\) Consultation between municipalities and military command authorities can address questions of installation expansion, environmental impact, safety and issues relating to airspace use.\(^10\) Florida and Nevada require similar information in comprehensive plans, mandating that local governments include criteria for achieving compatible land use in areas near a military installation, taking into account its stated mission.\(^10\) Other states are less descriptive in their requirements for comprehensive plans, yet still encourage some consideration of installation needs.\(^10\)

Texas has taken a somewhat different approach, authorizing defense communities—through a constitutional amendment—to request financial assistance from a revolving loan fund to prepare a strategic impact plan that sets forth the communities’ long-term goals and development proposals.\(^10\) One objective of the plan is to control the negative effects of future growth on military installations and their training exercises. Each strategic impact plan must include, among other requirements, detailed information about current and future land uses that may affect installation activities, an analysis of the base’s forecasted needs for open space areas and, if needed, language creating airspace buffer zones between the base and the community.\(^10\)

State agencies can also take military needs into account as they develop long-term plans. For example, Colorado enacted legislation in 2016 requiring regulators to identify and consider the transportation infrastructure needs of military installations in the statewide transportation plan.\(^10\)
Requiring Compatible Land Use

State legislatures also can require local governments to restrict or prohibit incompatible development around installations and military airports. At least eight states—Arkansas, Arizona, Illinois, Missouri, North Carolina, Oklahoma, South Dakota and Washington—have such laws (see Figure 5 and Appendix E).¹⁰⁸

Most compatible land use laws address the importance of preventing certain land uses near military airfields or airports. For example, Arkansas passed a law in 1995 requiring certain municipalities to enact an ordinance restricting or prohibiting future uses on property within five miles of the city limits that might be hazardous to aircraft operation.¹⁰⁹ Specifically, the law aims to limit air, light and electrical emissions—as well as uses that expose people to excessive noise, uses that would attract birds or waterfowl, and those that would require structures to be built within 10 feet of an airport. Minimal residential development is allowed, but is limited to single-family use on tracts of one or more acres. All ordinances must be consistent with the most current recommendations made by the U.S. Air Force in its Air Installation Compatible Use Zone Study. Oklahoma passed an almost identical law in 2001, except that its provisions are not mandatory for local governments.¹¹⁰ Similarly, Missouri and South Dakota authorize a municipality to adopt zoning regulations around military airports to prevent creation of a military airport hazard, defined as any structure that obstructs the air space required for taking off, landing or flight of military aircraft or that interferes with systems used for tracking or acquiring data.¹¹¹ Regulations may specify the land uses permitted and regulate the type, density and height of structures in the area.¹¹²

Other states encourage compatible land use development around all military facilities. Washington lawmakers enacted legislation in 2004 stating that “a comprehensive plan, amendment to a plan, a development regulation or amendment to a development regulation, should not allow development in the vicinity of a military installation that is incompatible with the installation’s ability to carry out its mission requirements.”¹¹³ The North Carolina General Assembly enacted similar legislation in June 2013. Under the Military Lands Protection Act, no municipality is permitted to authorize construction of a tall building or structure in any area surrounding a major military installation unless otherwise certified by the Building Code Council.¹¹⁴ The law instructs the council to deny applications for certification where construction of the building would encroach upon the mission, training or operations of an installation and result in a detriment to continued military presence in the state.¹¹⁵ The law also allows for civil penalties and prohibits providing certain utility services to any building constructed in violation of the law. Representative John Bell (R), sponsor of the legislation, believes that House Bill 433 “provides a uniform state process to protect bases from closure.”¹¹⁷

Still other options exist for encouraging compatible land use. Under the County Air Corridor Protection Act, Illinois grants any county with a U.S. Air Force installation of a certain size the authority to control the use of land around the airport to protect the safety of the community. The county’s authority is limited to the area designated in the Air Installation Compatible Use Zone Study. If the municipality approves a land use that is incompatible with the Air Force study, the law gives the county the option to use eminent domain to acquire the affected land.¹¹⁸
Protecting Land Near Military Bases through Formal Designation

Several states have existing statutory authority to assign an elevated status in planning documents to certain types of land. Development within these “areas of critical state concern” is monitored by state agencies and local governments to ensure that each proposed use is compatible with the land’s unique traits. Most lands protected as areas of critical state concern are environmentally sensitive regions such as wetlands, aquatic preserves and wilderness areas. One of the earliest and largest tracts of land designated as an area of concern is the Adirondack Park in New York, which encompasses more than 6 million acres of public and private land. Other states with statutes designating environmentally sensitive regions as areas of concern include California, Florida, Georgia, Maryland, Massachusetts, Minnesota, Nevada, North Carolina, Vermont and Wyoming. Some of these states—such as California, Florida and Minnesota—also protect areas with historic, archaeological or aesthetic significance.

To prevent uncontrolled development, military bases and operating areas can be recognized as critical areas, and state legislatures can require that lands near boundaries of these areas be set aside only for compatible uses. While the statutory framework for such a designation is already in place in many states, only two include military installations in types of land protected as a critical area: Kansas and Montana. Under the 2010 Kansas law, areas located either wholly or partially within defined military zones are designated as “state areas of interest” vital to national security and the economic well-being of the state. The law requires representatives of military installations and municipalities to meet at least annually to determine whether any portion of the state area of interest can be classified as a “critical area,” defined as any area where future use is determined jointly between the military installation and the municipality. Critical areas should be managed to reduce potential conflicts due to competing uses. Representative Tom Sloan (R), sponsor of the legislation, notes that, “Most civilians do not willfully compromise the training capabilities of military bases, but frequently are not knowledgeable about what civilian actions will compromise training missions. Similarly, the military do not intend to cause problems for their civilian neighbors. House Bill 2445 clearly helps both sides by establishing areas that are important to the military and notifying prospective buyers of property that military activities may produce noise, dust and other nuisances.”

Montana’s law allows municipalities to designate “military affected areas,” which encompass land used for military purposes and land near an installation that is directly affected by military activities. “Senate Bill 417 was enacted to empower local governments to work with military officials to adopt land use policies regarding military activities to ensure public safety, viability of our valuable military missions and allow future growth as we protect our nation from existing, new and potential threats,” says Senator Edward Buttrey (R), sponsor of the legislation. The Montana law also establishes a permit system for all land use changes within military affected areas and prevents granting permits for incompatible uses. Several counties have designated military affected areas in the past five years. According to Senator Buttrey, Cascade County, as well as most of the counties in central Montana, have enacted policies to minimize encroachment at various Minuteman-III missile silos.
Land Conservation

Protecting land around a military installation can buffer military training and testing operations from residential development and other incompatible uses. Open space also maintains habitat for threatened and endangered species. States can create buffer areas by purchasing land or development rights to land, exchanging land, and creating a conservation easement.

Purchasing Land or Development Rights

One way states can support creation of buffer areas is to establish a statewide program that provides funding for purchase of land or development rights in the vicinity of military installations that are struggling with encroachment. At least four states—Arizona, Florida, North Carolina and Virginia—currently have such funding programs.\textsuperscript{132} States commonly have funded or financed these programs through appropriations, dedicated lottery revenues and bonds. State programs that help to purchase land may also provide funding to purchase development rights, which can be much less costly. By purchasing development rights, states can preserve farms and ranches, while restricting the land from incompatible uses. In addition to more permanent programs, many states also have funded one-time land purchases to buffer military installations against encroachment.

Lawmakers in Florida recognize that the state’s land conservation plans often overlap with the military’s need to protect resources to ensure the sustainability of military missions. The Florida Forever Act, enacted in 2001, provides funding to state agencies and local governments for acquisition of conservation lands, some of which serve as a buffer around military installations.\textsuperscript{133} Funds distributed from the Florida Forever Trust Fund support restoration and protection of the state’s diverse ecosystems and landscapes and also provide habitat for imperiled species. Since its inception, the Florida Forever Program has acquired more than 718,000 acres. One of the more recent acquisitions in 2013 involved 1,578 acres around Camp Blanding Joint Training Center.\textsuperscript{134} The Florida Department of Military Affairs is managing the land as a natural forested area, not only providing numerous environmental benefits, but also preventing future encroachment in the vicinity of a major military training area.\textsuperscript{135} Florida also passed a law in June 2013 to authorize acquisition of non-conservation lands to buffer military installations from encroachment.\textsuperscript{136} Lands may either be purchased outright or secured through other means, including conservation easements.

North Carolina also provides funding to acquire conservation lands. Created in 1996, the Clean Water Management Trust Fund awards grants to local governments, state agencies and conservation groups to help fund projects that restore degraded waters, protect unpolluted waters and preserve the ecological diversity of the state.\textsuperscript{137} The fund also supports projects that create buffers around military bases. More than $1 billion has been allocated to nearly 1,400 projects since 1996.\textsuperscript{138} In 2015, trustees awarded $3.5 million in grants to support land conservation efforts around military bases and flight paths.\textsuperscript{139} State funds will be paired with federal matching dollars and contributions from local land trusts.\textsuperscript{140}
The impetus for Virginia’s land acquisition program came in response to the BRAC Commission’s 2005 recommendation to move Naval Air Station Oceana out of Virginia Beach because the city had allowed too much development under flight paths. The state enacted a law shortly thereafter to require all localities with a U.S Navy Master Jet Base to establish programs to purchase incompatible use property and prohibit new development deemed incompatible with air operations in certain defined zones.

Exchanging Land

Aside from purchasing land, states can permit land exchanges to prevent further encroachment. In its 2012 session, the Arizona Legislature passed a measure to give the state flexibility over use of state trust lands. (“State trust lands”—10.9 million acres in Arizona—were granted at the time of statehood and are intended to produce revenue for various public institutions. Twenty-three states manage trust lands today.) The measure revised the process to review, evaluate and approve proposed exchanges of state trust lands for other public lands for certain purposes, one of which is preservation and protection of military facilities in the state. Proposed exchanges are subject to two land appraisals and an analysis of the financial impact of the exchange on each county, city, town and school district in which the lands are located, as well as the physical and natural resource impacts of the exchange on the local community. The law also requires two public hearings for each proposed exchange and approval from voters in a general election. The law became effective in November 2012 after voters approved a required amendment to the state constitution authorizing land exchanges.

Agriculture and Conservation Easements

Just as military activities are threatened by unchecked growth and development, so too are working lands and wildlife habitat nearby. Lands used for farming, ranching and forestry are vital to sustaining agricultural productivity, safeguarding natural resources and maintaining a rural way of life. Although states have implemented a wide variety of programs to preserve working landscapes, the United States still loses one million acres of farmland to development each year. In addition, the loss of wildlife habitat is transforming military bases into unlikely refuges for more than 400 threatened and endangered species.

Easements—defined as voluntary, legal agreements between a landowner and a government agency or other entity that define the use of land in order to protect its agricultural or conservation values—also can be used to protect land around military installations. Lands protected through an easement can include the following: working farm, ranch or forestland; scenic vistas; wildlife habitat; watershed areas and historic sites. Millions of acres of private land in the United States are currently under agricultural and conservation easements.

An easement can be an attractive option for a landowner who wishes to protect his or her land for future generations without giving up private ownership. Easements also offer great flexibility, tailoring restrictions to the needs of individual landowners and the unique features of the property. Landowners also can benefit financially through federal and state tax credits designed to compensate those who
choose to donate an easement, rather than sell it. At least 15 states and Puerto Rico—Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Iowa, Maryland, Massachusetts, Mississippi, New Mexico, New York, South Carolina and Virginia—offer a conservation easement tax credit, allowing landowners to claim up to 50 percent of the fair market value of land donated to a government agency or private land trust. Five states—Colorado, Georgia, New Mexico, South Carolina and Virginia—allow credits to be transferred to individuals or corporations with high tax liability, generating immediate income for the donor.

At least 17 states—California, Colorado, Florida, Georgia, Hawaii, Illinois, Maine, Maryland, Nebraska, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Texas, Virginia and Wyoming—have funding programs to help state agencies and local governments purchase conservation easements. Other states, including some mentioned above, also have agricultural conservation easement programs to protect important farmland.

Landowners may also qualify for preferential treatment in the assessment of property taxes in several states. In Maine, North Carolina and Vermont, for example, property taxes for agriculture and forest lands are based on the value of the land in its current use, rather than market value. This method allows for valuation of land based on the actual use of the property, rather than what the use might be if the property were sold or developed. This results in tax savings for the landowner. As of September 2015, Vermont landowners had enrolled more than 18,020 parcels of qualifying forestland and farmland, about one-third of the state’s total land area.

Florida is currently the only state to tie purchase of conservation easements to protection of military installations. The Florida Forever Act, described earlier, encourages purchase of conservation easements in addition to outright purchase of property, largely because of the easement’s lower cost to the public and ability to allow private landowners to retain ownership. The law dedicates 3.5 percent of money in the Florida Forever Trust Fund for acquisition of agricultural lands through conservation easements and similar instruments. The state has purchased numerous conservation easements during the past decade, including in June 2013 when the state acquired a 20,850 acre easement for property adjacent to Eglin Air Force Base, the largest in the country. The land will continue to be owned and managed by a private citizen for economic benefit; under terms of the easement, however, it will not be developed into new residential or commercial uses that could impede the base’s mission.

All states except North Dakota have laws that enable creation of conservation easements. Enabling legislation typically describes the methods of creation and duration of the easement and establishes procedures for public review, registration, amendment and termination. Most states allow any federal, state or local government body to hold easements. Non-governmental entities, such as land trusts and other nonprofit conservation organizations, also are permitted to hold easements. Most easements remain with the property even if it is sold or passed to heirs, thus binding the original owner and all subsequent owners to easement conditions. The entity that holds the easement is responsible for monitoring and enforcing its terms.
**Sentinel Landscapes**

Formed in 2013, the Sentinel Landscapes Partnership is an effort to protect working lands, preserve wildlife habitat and sustain military readiness by focusing on places where these priorities overlap. Federal partners, including the U.S. Departments of Defense, Agriculture and Interior, are working with state, local and private actors to recognize and reward landowners for practices that benefit their lands and livelihood, while also effectively contributing to the sustainment of military installations, training ranges and airspace.

The Sentinel Landscapes Partnership presents states and the federal government with an unparalleled opportunity to capitalize on the linkage between national defense, conservation and working lands. Leveraging resources to encourage landscapes in the vicinity of military installations to remain as farms, ranches, forestlands, or simply open space, will not only benefit the people and wildlife that depend on these lands, but also serve as a valuable buffer from the kind of development that puts military testing and training activities at risk.

One of the key objectives of the Sentinel Landscapes Partnership is to encourage state participation and the use of state resources to more effectively engage private landowners and provide them with a range of incentives to promote compatible land use. Legislation enacted in Minnesota in 2015 aims to do just that. House Bill 283 establishes a coordinating committee to identify lands around Camp Ripley, a National Guard training center, that meet the criteria of a Sentinel Landscape. The committee will work with willing landowners to encourage management practices compatible with the National Guard training facility. Representative Ron Kresha (R), one of the bill’s sponsors, believes Camp Ripley is an important resource for the state and viewed the legislation as a first step toward nomination for official Sentinel Landscape status.

In July 2016 the Partnership announced the designation of three new Sentinel Landscapes—Camp Ripley, Minnesota, Avon Park Air Force Range, Florida and Eastern North Carolina. These areas join Joint Base Lewis-McChord in Washington, Fort Huachuca in Arizona and Naval Air Station Patuxent River-Atlantic Test Ranges in Maryland. The project at Camp Ripley involves more than 40 miles of the Mississippi River, with 16 local, state and federal partners sharing responsibility for protecting water quality. They have committed more than $5.18 million to protect or enhance 34,903 acres, which will protect Camp Ripley’s training mission, the integrity of the region’s natural resources, and provide expanded access to hunting, fishing and recreation.

State laws that help to minimize encroachment and sustain the economic benefits of the military’s presence also support the goals of the Sentinel Landscapes Partnership. Policy options include farmland and forestry preservation programs and tax incentives for private land conservation and economic development.
Energy Development Compatibility with Military Mission

As states and localities increase renewable energy capacity and related electrical transmission to meet demand and fulfill renewable portfolio standards, the expansion into previously undeveloped land may affect the military mission.\(^{157}\) While renewable energy can bring benefits to both military and civilian communities, its development may have unintended impacts on military operations by interfering with communication, airspace and test and training ranges. Often, potential impacts can occur miles from a planned development and the effects are not always apparent to developers or civilian communities.

Renewable energy installations and transmission lines can impact low-level flight or nighttime exercises if they are located near training routes and special use or restricted airspace. Wind turbines can interfere with surveillance, air traffic control and other radar systems.\(^{158}\) High-voltage transmission lines have the potential to create electromagnetic interference, ultimately degrading military communication and navigation. Furthermore, solar photovoltaic panels, hot water heating systems and solar towers can reflect sunlight and create hazards for air operations through glint—a momentary flash of bright light—or glare—a continuous source of bright light.\(^{159}\)

Although DoD is a strong proponent of renewable energy, the department must ensure that wind turbines, solar panels and other infrastructure located on or near military installations are compatible with test and training activities.\(^{160}\) This need for compatibility is becoming increasingly imperative as renewable energy investment grows due to state renewable portfolio standards, cost reductions, increased demand and financial incentives, including federal tax credits.

With these considerations in mind, the Secretary of Defense created the DoD Siting Clearinghouse in 2010 to address the potential impacts of renewable energy development on military testing, training or operations.\(^{161}\) The Clearinghouse works closely with state and local governments, developers and other federal agencies to provide timely, coordinated reviews of proposed energy projects to prevent or minimize operational impacts through their Mission Compatibility Evaluation process.\(^{162}\) The Clearinghouse is not a regulatory authority and generally serves in an advisory role to the appropriate permitting agency.

The Clearinghouse website contains information on DoD’s ongoing efforts to include the military mission in energy siting decisions, as well as a library of relevant reports and copies of all signed mitigation agreements.\(^{163}\) Most importantly, the website provides a portal for state and local governments to contact DoD for an impact assessment. The Clearinghouse’s informal review process, which is most often used by developers to gain early siting information, can also provide mission compatibility information to public entities.

The Clearinghouse conducts reviews of thousands of projects, the vast majority of which are found to have minimal impact on military operations and readiness.\(^{164}\) The Clearinghouse will review project or geographic data to identify any missions that may be of concern. When compatibility concerns are identified, the Clearinghouse works with the energy proponent to identify reasonable and affordable impact mitigation solutions. For example, the Clearinghouse and a developer reached an agreement in
North Carolina to allow modified siting of wind turbines to lessen impacts on the Seymour-Johnson Air Force Base.165 This process is best used as early in siting decisions as possible, and is designed to be collaborative, rather than to deliver a final DoD position.

At the state level, legislatures are working to prevent and mitigate energy-related encroachment on military installations early in the siting process to reduce costs, streamline the permitting process and preserve the military mission. Encroachment is often unintentional, and state and local siting authorities may not be aware of the need to include military operations in planning discussions. State lawmakers can help ensure these projects will be compatible with military activities by including DoD and representatives from nearby military installations in stakeholder discussions with local, state and federal siting authorities, state utility commissions, state agencies, tribal governments and local communities. Early coordination can often overcome energy-related compatibility challenges, saving states and localities from unplanned mitigation expenses and permitting obstacles.

Legislatures can ensure compatibility of new energy projects with military operations through several processes, including early notification of DoD, requesting an informal review from the department, ensuring any conflicts are resolved prior to completing permitting and construction, and enacting planning guidelines or siting ordinances with maps of military mission conflict areas. This coordination can occur at utility commissions, state or local siting boards and permitting offices.

California is one state that has adopted comprehensive measures to increase coordination with nearby military installations. The state enacted Senate Bill 1468 in 2002 requiring the impacts of new growth on military readiness activities to be considered in zoning and land use decisions.166 Legislation revised the definition of open-space to include areas adjacent to military installations, military training routes and restricted airspace, helping prevent encroachment. Additionally, the bill required the state Office of Planning and Research to prepare and publish a compatibility planning handbook for local officials, planners and builders to decrease land use conflicts on or near military installations.167 Senate Bill 1462 (enacted in 2004) requires the governor to develop a conflict resolution process for proposed local or state projects that could potentially affect military activities.168 The bill also requires planning agencies to notify the U.S. Armed Forces of any changes to a community’s general plan if the changes lie within 1,000 feet of a military installation, beneath a low-level flight path, and within or beneath special use airspace. Furthermore, the legislation would develop a process for DoD to request a consultation with planning agencies and provide electronic maps identifying military installations and special use airspace to the Office of Planning and Research. The state has also taken subsequent measures since 2004 to streamline military-community interactions on energy development. For example, the state has developed the California Military Land Use Compatibility Analyst to help localities consider the effects of new growth on military readiness, installations and airspace.169

In the 2013 legislative session, North Carolina enacted House Bill 484 to establish a permitting process for wind energy siting that includes consideration of any effects on military operations and readiness at each point in the application process.170 For example, prospective permit applicants must submit a pre-application package with information on the project and any possible impacts to military installations.
Prospective applicants must also give written notification to military installations potentially affected by the development. At other points in the application process, the commanding officers of each major military installation are notified of the project in writing and invited to provide input. In the same year, the state enacted another bill (House Bill 433) that places limits on building heights for new construction or retrofits within five miles of military installations to protect airspace. Also included in the legislation is the development of a study examining the feasibility and desirability of creating a North Carolina Military Clearinghouse to prevent incompatible development.

The state of Washington enacted House Bill 1570 in 2011, requiring the Energy Facility Site Evaluation Council, cities, towns and counties to provide written notice to DoD of permit applications for energy projects connected to transmission lines of 115 kilovolts or greater.

Energy-related encroachment may be exacerbated by differences in states’ siting authorities. A number of states authorize energy installations, such as wind turbines, at the county or municipal level, rather than through a state permitting office. In Oregon, for example, siting for wind energy facilities under 35 megawatts is regulated by local governments. The Department of Energy has developed a model ordinance on energy projects for local governments that includes guidance on siting renewable energy and transmission lines. In Virginia, the state Corporation Commission provides a certificate for the siting of all new utility facilities and localities may adopt separate siting ordinances. The Virginia Department of Environmental Quality’s Local Government Outreach Stakeholder Group has developed a series of model renewable energy ordinances for localities. In the model ordinance for utility-scale wind energy, resources for notifying DoD of proposed installations are included.

Moreover, legislatures can collaborate with military entities on renewable energy research and development or assist with military self-generation goals by streamlining the process for renewable energy facilities on military lands. For example, Hawaii enacted House Bill 1513 in 2015, which established a two-year matching grant fund for entities that have contracted with DoD’s Office of Naval Research on renewable energy and energy efficiency research and development. Several states, including Kansas, Utah and Vermont, have enacted legislation in recent years to provide financial incentives or regulatory policies for increased use of renewable energy at military installations.

Reducing Light Pollution

With the use of night-vision equipment, a significant portion of military training is now conducted at night. These exercises simulate combat situations, helping troops develop their situational awareness and ultimately minimize casualties. But increasing urbanization, combined with the excessive and inefficient use of light, has created a kind of pollution that can interfere with military training and lead to numerous other disturbances.

At least 17 states, the District of Columbia and Puerto Rico have laws in place to reduce light pollution. The majority of states that have enacted so-called “dark skies” legislation have done so to promote energy conservation, public safety, aesthetic interests and astronomical research capabilities. Municipalities in a
number of states have also been active on this issue, adopting light pollution regulations as part of their zoning codes.\textsuperscript{180}

Most state laws are limited to outdoor lighting fixtures installed on the grounds of a state building or facility or on a public roadway. The most common dark skies legislation requires the installation of shielded light fixtures which emit light only downward. Replacement of unshielded with fully shielded lighting units often allows for use of a lower wattage bulb, resulting in energy savings. Other laws require the use of low-glare or low-wattage lighting, regulate the amount of time that certain lighting can be used, and the incorporation of Illuminating Engineering Society guidelines into state regulations.\textsuperscript{181}

Known as a worldwide hub for astronomy, Arizona’s light pollution law dates back to 1986.\textsuperscript{182} The law requires all outdoor light fixtures to be fully or partially shielded, with the exception of emergency, construction and navigational airport lighting. Fixtures not in compliance are allowed provided they are extinguished between the hours of midnight and sunrise by automatic device. Some laws are more specific than others. For example, in Colorado, installation of new outdoor lighting fixtures requires consideration of costs, energy conservation, glare reduction, minimizing light pollution and the preservation of the natural night environment.\textsuperscript{183} A “full-cutoff fixture” must be used when output is greater than a certain amount of lumens.

Other states have sought to encourage these types of measures at the local level. New Hampshire, for example, has made it a priority to preserve dark skies as a feature of rural character. To that end, state law encourages municipalities to adopt ordinances and regulations to conserve energy and minimize light pollution.\textsuperscript{184} The effect of beachfront lighting on avian and marine life is also a concern in many coastal states. In Florida, a statewide model lighting ordinance guides local governments in developing policies to protect hatching sea turtles.\textsuperscript{185}

Texas is the only state with a law in place specifically aimed at reducing light pollution around military installations. In 2007, the Texas Legislature amended an existing law regarding the regulation of outdoor lighting to authorize state counties, at the request of the military, to adopt measures governing the use of outdoor lighting within five miles of a military installation.\textsuperscript{186} The provision only applies to counties with at least five military bases and a population of more than 1,000,000 people or adjacent counties located within five miles of a base. County regulations must be designed to protect against interferences with military training activities. Counties may accomplish this goal in a number of ways: (1) require that a permit be obtained before installing certain types of lighting; (2) prohibit the use of particular lighting fixtures; (3) establish requirements for the shielding of outdoor lighting; or (4) regulate the times during which certain types of lighting may be used.

In 2011, Missouri lawmakers considered, but did not pass, the Night Sky Protection Act, which would have reduced the amount of light emitted into the night sky in designated military training areas and would have required the state Air Conservation Commission to develop voluntary guidelines to achieve specified standards by 2050.\textsuperscript{187} A similar bill was considered in Kansas in 2009.\textsuperscript{188}
Limiting Noise Impacts from Military Activities on Surrounding Communities

Communities adjacent to military bases frequently experience high levels of noise that can affect residents’ health, welfare and quality of life. Aircraft flights, ordnance detonations, combat engineering demolitions and artillery use are a few of the activities that can disrupt daily life in the vicinity of a military installation. States can minimize the effects of noise on surrounding communities by requiring that new developments adhere to prescribed sound attenuation standards. These standards often require use of soundproofing techniques, such as building thicker walls or using additional insulation, to reduce the intensity of exterior noise.

An Arizona law enacted in 1996 requires municipalities that have territory in the vicinity of a military airport to institute sound attenuation standards for newly constructed residential houses and certain public buildings. In 2004, the Legislature extended the scope of the law to include ancillary military facilities at Luke Air Force Base and Yuma Marine Corps Air Station. Virginia enacted similar legislation in 2005, allowing municipalities to adopt regulations requiring use of “acoustical treatment measures” for residential buildings in areas affected by above-average noise levels due to their proximity to a military airport. In establishing the regulations, a locality may adopt one or more noise overlay zones as an amendment to its zoning map and may establish various measures to be installed within each zone, depending on the severity of aircraft noise.

Real Estate Disclosure

Another way to discourage encroachment is to ensure that buyers or renters of property located near a military installation are aware of the associated risks and potential effects on quality of life caused by high noise and training accidents. Disclosures of this nature can serve as a valuable deterrent to incompatible development. Laws in Arizona, Kansas, Maryland and Virginia require or encourage real estate disclosures in military areas. Lawmakers in Colorado, Nevada and North Carolina, have considered such bills in the past five years.

Arizona law requires a seller of residential property located near a military airport or ancillary military facility to provide a written disclosure to the buyer before transferring title. In addition, a 2001 Arizona law requires owners of property located within defined “high noise and accident potential zones” to notify potential buyers, renters or lessees that the property is located in the zone and is subject to certain requirements under the law. The state also requires this type of disclosure on land under military training routes and restricted air space. To facilitate this process, the state real estate department and affected municipalities maintain a registry of information containing maps of military flight operations and a list of contact people who are familiar with flight operations at each airport.

In 2010, the Kansas Legislature enacted a comprehensive measure that requires municipalities to consider adopting a mandatory disclosure requirement for any property within defined areas that would inform buyers of the potential for noise, smoke, dust, light and electromagnetic interference generated by normal military operations.
Conclusion

As DoD continues to reorganize its infrastructure to become more efficient and adjust to a changing national security environment, state-level proactive strategies will become even more critical to the sustainability of military operations and defense communities. This report is intended to provide state legislatures with an overview of state responsibilities and related policy options to strengthen the relationship between bases and surrounding communities, and to ensure a suitable environment for military installations. No single solution exists to mitigate the effects of base changes or prevent encroachment; however, states may wish to consider the options presented in this report in tandem with state and local views about land use, economic development, private property rights or other issues of concern. With these strategies in mind, states can work to secure the future of their military installations and ensure that communities continue to benefit from the jobs and business opportunities the military provides.


32 Ibid.


34 DoD, 2008 Report to Congress, 2.


38 Development in nearby communities can force the migration of protected species onto military property, requiring the military to limit or cease activity in the area. DoD currently is responsible for protecting more than 425 listed plant and animal species under the Endangered Species Act. Bruce A. Stein, Threatened and Endangered Species on DoD Lands, (Washington, D.C.: DoD Natural Resources Conservation Compliance Program, 2013), www.dodnaturalresources.net/files/TE_s_fact_sheet_2-21-13.pdf.

39 Cyrena Eitler, Compatible Use Program lead, Department of Defense Office of Economic Adjustment, e-mail to Alice Wheet, Sept. 25, 2013.


41 NAPA, Strengthening National Defense, 16-17.

42 Ibid., 4.


48 Eitler, e-mail to Alice Wheet.

49 NAPA, Strengthening National Defense, 3.


51 Representative Tim Moore, Kentucky General Assembly, e-mail to Alice Wheet, Aug. 15, 2013.


55 Ibid.
56 Ibid.
59 Ibid.
60 Ibid.
62 Ibid.
70 The statute defines “activities” to include studies, presentations, analyses, plans and modeling. For the purposes of the Defense Infrastructure Grant Program, the term “activities” also includes construction, land purchases and easements. Fla. Stat. §288.980.
72 http://www.fligov.com/2015/06/30/governor-scott-announces-more-than-3-million-for-florida-defense-communities/.
74 TMPC, Biennial Report, 6.
77 Ibid.
79 Alaska Stat. §26.30.005 et seq.
80 Representative Steve Thompson, Alaska Legislature, e-mail to Jennifer Schultz, Sept. 13, 2013.
81 Ibid.
82 2014 Alaska House Bill 223.
Virginia law dictates that comprehensive plans “may” include the location of military installations or other military facilities (Va. Code §15.2-773). Wisconsin statute requires all master plans to contain an intergovernmental cooperation element that references the maps and plans of military installations with which the local government shares common territory (Wis. Stat. §66.1001). Kansas requires municipalities to coordinate with installation commanders


2013 Mo. House Bill 7.


Ind. Code §36-1-4-20; 2014 Indiana Senate Bill 260.


Arizona communities must include consideration of military airport operations within their general plans and identify the boundaries of high noise or potential accident zones around an airport (Ariz. Rev. Stat. Ann. §9-461.05). Wisconsin statute requires all master plans to contain an intergovernmental cooperation element that references the maps and plans of military installations with which the local government shares common territory (Wis. Stat. §66.1001). Kansas requires municipalities to coordinate with installation commanders all comprehensive plans affecting certain military areas w (Kan. Stat. Ann. §12-773). Virginia law dictates that comprehensive plans “may” include the location of military installations or other military facilities (Va. Code §15.2-2223).


Ibid.


Ill. Rev. Stat. ch. 620, §52/1 et seq.

Many states use this designation, although with varying titles, including: areas of critical state concern; areas of critical concern; areas of statewide significance; state areas of interest; areas of critical environmental concern; etc.


Easement Enabling Statutes


Florida Department of Environmental Protection (DEP), Florida Forever (Tallahassee: Florida DEP, 2013), www.dep.state.fl.us/lands/fl_forever.htm.


State officials in Minnesota are working to develop a model ordinance that can be adapted for use by local governments to reduce light pollution (Minn. Stat. §16B.328). For more information on municipal regulations, see resources produced by the International Dark Sky Association, available at www.darksky.org/

http://www.ies.org/