

Natural Resources Policy Studies
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October 11, 2002

Military Installations Pressured by Sprawl

Incompatible residential and commercial development of land close to military installations can affect the ability of an installation to carry out its mission. Such development also threatens public safety because accidents sometimes occur in the areas surrounding an installation. The economic health of a community is affected if military operations and missions must relocate because of urban encroachment. States and local governments have begun to take actions to prevent encroachment and more measures are likely with heightened concerns about national security and economic health.

Some states are encouraging compatible land use around their military installations by having local governments:

- anticipate future urban growth patterns and create a strategic land-use plan that prevents encroachment near military installations
- establish high noise and accident potential zones near military installations and develop zoning codes that support compatible development of land located within these zones

Encroachment Is a Rising Problem in Many States

Civilian encroachment around military installations is beginning to restrict or eliminate testing and training activities in many locations. Eighty percent of our nation's military installations in communities are experiencing urban growth at a rate higher than the national average.¹ Residential and commercial communities located near bases are potentially exposed to artillery fire, aircraft noise, dust, and worse yet accidents. As a result, when urban growth and development increase near and around military bases, so do land-use conflicts between mission activities and local communities. For instance, many military airports conduct night training exercises. The city lights of encroaching development often compromise the effectiveness of night vision equipment, making night training exercises impractical.

The extent of urban encroachment having an impact on the operational activity of an installation is a consideration in determining its future viability, and such mission constraints can lead to activity reductions or installation closure. The resulting reduction in installation personnel and mission activities can jeopardize economic activity, jobs, and tax revenue. Encroachment puts local and state economies at risk.

The authority over civilian land use and development around many military installations rests with state and local governments. The most effective way to deal with urban encroachment of military installations is through improved local land-use planning and zoning. There are many examples of legislation, land-use plans, and zoning codes that can be implemented to address this issue. However, the most effective approach is to anticipate future urban growth patterns and create a strategic land-use plan with accompanying implementation and enforcement mechanisms that prevent encroachment near our nation's military installations.

Military Installations Are Important to State and Local Economies

The military plays a significant economic role at the federal, state, and local level. The federal government allocates \$96.2 billion a year in direct military spending and another \$228.9 billion in civilian expenditures, for a national total of over \$325 billion.² Likewise, military installations are often critical to state economies, accounting for thousands of jobs and generating billions of dollars in economic activity and tax revenue. Several states have attempted to measure the impact that their military installations have on the local and state economy. Arizona, California, and Florida, for example, each report that base-related spending accounts for 3.7, 2.2, and 4.2 percent, respectively, of total gross state product.³ These data show the significant economic benefit of military bases to state economies.

A military installation provides a level of economic stability and security for the local community. The average salary for military personnel (and civilians working for the military) is higher than the statewide average in many places. Economists assert that jobs generated and supported by a military installation play an important role in the local economy because federal defense spending is not affected by the financial ups and downs of the private sector. As a result, the military creates a stable and consistent source of employment and tax revenue for the local and state economy.

The presence of the military in a community reaches far beyond the boundaries of the installation. Even small, ancillary military stations located in remote areas often have an economic impact because they provide vital satellite support to larger installations. As a result, they generally make a contribution to the economy.

Military bases are linked to a large cross-section of the local community including active duty officers, reserve personnel, military family members, retirees, and civilians working on base. As revenue shifts from the military to local businesses through employee payroll and retail purchases, that money then makes its way to other local businesses and starts another cycle of spending. In addition, a military installation may attract frequent visitors including contractors, training units, government and foreign dignitaries, and family members. These visitors also contribute to the economy by spending their money at local hotels and eateries. Moreover, retired military officers account for a large segment of the population located near military bases. Retirees often choose to live in communities close to military installations so that they can take advantage of the benefits such as a base's recreational and retail facilities.

The substantial contracting needs of a military base also can be important to the local economy. The military procures a large amount of contract work from the private sector for maintenance, supplies, construction, manufacturing, equipment, materials, transportation, communications, and health and food services. Sometimes, defense contractors doing research and development or manufacturing are intentionally located near military bases because their work involves testing or other activities associated with a particular installation.

States Acting to Prevent Encroachment

A handful of states have risen to meet the challenge of urban encroachment. For instance, some states have passed legislation that establishes high noise and accident potential zones near military installations and developed zoning codes that support compatible development of land located within these zones. Other states want local governments to anticipate future urban growth patterns and create strategic land-use plans that prevent encroachment near military installations.

Arizona

Arizona passed a series of laws that require compatible land use around the state's four military airports by enforcing planning, zoning, and noise requirements. Economic issues motivated these actions.⁴

In 2001, Governor Jane Hull signed into law the [Preservation of Military Airports Act](#) which mandates that a city, town, or county containing territory within the vicinity of a military airport consult with, advise, and provide these military airports with the opportunity to comment on the use of land surrounding their installation. The statute further requires the adoption of land-use plans and zoning regulations that are compatible with the high noise and accident potential generated by military airport operations. For example, to address noise concerns, the act mandates the incorporation of sound attenuation standards into all local building codes. It also requires that developers provide proper and timely notice of noise sensitive uses to prospective buyers of land in areas surrounding military airports. In 2002, Arizona passed another [military airport preservation law](#) that further elaborates on land-use compatibility as well as prohibits new school construction in accident potential and high noise zones.

Drafting and passing compatible land-use statutes is only the first step in controlling encroachment at military installations. Following through with implementation of these principles is an equally important task. To accomplish this goal, the [Arizona Military Airports Regional Compatibility Project](#) was created to coordinate stakeholder meetings to deal with land-use compatibility issues. The project brings local jurisdictions, military installation representatives, land owners, and other interested parties to the table to identify land-use conflicts, develop compatible solutions, and design a firm implementation plan that incorporates a financing strategy. [The Compatibility Project was launched by Arizona legislation](#) that appropriates funds to support the development of comprehensive land-use plans within noise and accident potential zones.

The city of Glendale, home to Luke Air Force Base, has created a reference booklet on Arizona's statutes that provide a roadmap of new and innovative measures to protect military facilities from encroachment. The [Arizona Revised Statutes Relating to Military Airports booklet](#) includes relevant Arizona law as well as answers to a list of commonly asked questions regarding military installations, compatible development, and accident potential zones.

Arizona has emerged as a national leader in protecting its bases from encroachment. Although Arizona laws currently only apply to military airports, they serve as a model of how states can influence and encourage compatible development around all military installations. Governor Hull believes that Arizona's installations are critical to both the military and the local economy. She said that addressing the encroachment problem in local plans "will assure compatible land use near our bases, which is the best way to protect them."⁵

ARIZONA

Gross State Product: \$156 billion

Federal Military Spending: \$1.6 billion

Economic Impact of major military operations:

\$5.7 billion in statewide economic output

\$233 million in state and local tax revenue

83,506 jobs – Military bases employ more individuals than the state's top three private-sector employers

California

California also passed laws aimed at curbing urban encroachment of military installations. The first step was to pass a [law that created the California Defense Conversion and Retention Council](#) to oversee efforts to minimize base closures and to prepare a [study](#) regarding long-term protection of land adjacent to military installations. Here too, economic issues were important.⁶

In 2002, California passed [a law requiring cities and counties to consider the impact of new growth on military readiness](#) when preparing zoning ordinances or designating land uses covered by the general plan for land adjacent to military facilities or underlying designated military aviation routes and airspace. In addition, an advisory planning handbook for local officials, planners, and builders will be developed explaining how to reduce land-use conflicts between civilian development and military readiness activities. The act also encourages cooperation between military bases and local planning entities when developing strategies to address growth.

The weakness of this statute lies in its funding provisions and lack of enforceability. Only towns that receive federal funding from the U.S. Department of Defense are required to consider the impact of development on military readiness. If funding can't be secured, many of these localities may not have the financial capacity to conduct impact studies and draft growth regulations.

Florida

The link between bases and economic benefits has been made in Florida.⁷ Florida's Land Development Code requires local cities and counties to be consistent with state development and land-use policies. In addition, the [Environmental Land and Water Management Act](#) requires state approval of major development proposals. This statute permits the governor and cabinet to designate "Areas of Critical State Concern" which protect land in the state where unsuitable development would endanger resources of regional or statewide significance. The act ensures orderly and well-planned growth by regulating development in these areas. In addition, "Developments of Regional Impact" can be identified that establish criteria and procedures to ensure that local land-use decisions address the regional impacts of proposed large-scale developments.

Although Florida has not declared their military installations as Areas of Critical State Concern, these land-use policies could serve as meaningful tools to address encroachment in the state. Governor Jeb Bush said that "we can reform our growth management laws so that we recognize that there's a way to organize our communities that is compatible with something as important as a military base."⁸

On a local level, a number of counties in Florida have set up land development plans that require compatibility surrounding local military and commercial airports. [Escambia County, home to Pensacola Naval Air Station, has a land development code](#) that creates various levels of accident potential and noise zones. The code sets forth specific compatible land uses for each zone. [Santa Rosa County has a similar code](#) that establishes standards for land use around Eglin Air Force Base.

CALIFORNIA

Gross State Product: \$1.34 trillion

Federal Military Spending: \$11.1 billion

Economic Impact of major military operations:

\$30 billion a year in direct economic expenditures

The military is larger than other economic sectors in the state, including agriculture

California is home to:

300,000 active duty and civilian defense personnel

64 military installations – more than any other state

More than half of these military facilities are located within sight of major metropolitan areas

Florida

Gross State Product: \$472 billion

Federal Military Spending: \$5.4 billion

Economic Impact of major military operations:

\$20 billion a year in statewide economic output

For every \$100 in base activity money spent, another \$113 is spent in Florida's economy as a result of this activity

The annual wage for Florida's military and civilian personnel is 29% greater than the statewide average

Colorado

The city of Aurora, Colorado, recognizes there are certain areas within its city boundaries that are subject to high aviation noise levels and potential crash hazards generated by aviation activities. These military activities endanger the lives and property of occupants of land in the vicinity of local airports such as Buckley Air Force Base. In an effort to curb incompatible development surrounding Buckley, the city drafted a zoning code that regulates new structures built within airport districts. The most dangerous areas are “clear zones” where the accident potential is so great that all land uses are prohibited. In “accident potential zones,” land use is regulated to reduce hazards in areas characterized by high noise levels and significant potential of crashes. These zones restrict nearly all residential and commercial land use.

AURORA, COLORADO

Economic Impact of Buckley Air Force Base (AFB) on local economy is \$381 million a year

Military construction projects totaling \$91.8 million are planned through the year 2007

Buckley AFB is one of Aurora's largest employers

The city of Aurora appreciates the economic importance of the base⁹ and understands that noise and safety concerns have a significant impact on both Buckley Air Force Base and the surrounding communities. Aurora responded by developing local land-use plans that prevent future encroachment and conflict. If enforced, local zoning ordinances can assure the compatibility of land surrounding a military installation.

Department of Defense Provides Planning Assistance

The U.S. Department of Defense (DOD) believes that through joint, cooperative military and community planning, growth conflicts can be anticipated, identified, and prevented. In an effort to deal with encroachment concerns, DOD established in its department of the Navy and Air Force the Air Installation Compatible Use Zone (AICUZ) program, and in the Army the Installation Compatible Use Zone (ICUZ) program [now called the Installation Environmental Noise Management Program (IENMP)]. These programs provide information to local governments about noise and accident potential generated by base operations and encourage communities to adopt land-use controls that ensure compatible development in areas adversely affected by military installations.

Given the success of these programs, DOD developed the Joint Land Use Study (JLUS) program, which promotes the incorporation of AICUZ/ICUZ findings into local plans and zoning codes. As an incentive for communities to participate in a joint planning process, the [Office of Economic Adjustment \(OEA\)](#) offers technical and financial assistance in the form of community planning assistance grants to state and local governments to conduct Joint Land Use Studies. Recommendations made in these studies assist local jurisdictions in the development and implementation of land-use controls to make development around a military installation compatible with both the military’s mission and the development needs of the community.

Conclusion—Encroachment Can Be Alleviated Through Growth Management

If sprawl is controlled and growth well managed, then encroachment is prevented. Governors can address encroachment concerns by supporting improved land-use practices that promote economic development, safeguard natural resources, and maintain a community’s quality of life. Although many elements of land-use planning are exercised by local government, states can provide guidance on how to address complex land-use issues. States have the ability to encourage or facilitate increased communication and cooperation between their departments and local governments and, in many cases, between local governments within a certain region. States also can use state spending to steer land-use practices.

A handful of states have established model land-use codes for consideration by local governments that offer a comprehensive and unified approach to local planning. [Maryland](#), [Minnesota](#), [Oregon](#), [Rhode Island](#), [Wisconsin](#),

[Utah](#), and [Colorado](#) have created model codes that support better land-use practices, while also providing communities with the flexibility to respond to local needs. Although these codes have not yet addressed encroachment, they offer an opportunity to address this issue, especially as more states develop model codes.

As Arizona has done, states can support the adoption of land-use plans and zoning regulations that are compatible with the high noise and accident potential generated by military operations. One approach is to designate areas surrounding military installations as “areas of critical state concern” and afford them special protection from uncontrolled growth and development. Another approach, which might be implemented through a governor’s executive order, is to avoid providing state funds that contribute to encroachment, such as for school or highway construction.

A community’s efforts to grow and thrive can—and *for the good of our nation must*—coexist with the military’s mission of training and operational readiness. A comprehensive and long-term approach to compatible land use that applies local smart growth tools can balance community development with the military’s responsibility to protect our nation in an effective manner. In the aftermath of September 11, 2001, balancing the war on terrorism and homeland security needs with civilian and military land uses is more important than ever.

Endnotes

¹ GAO Report, “Military Training: DOD Lacks a Comprehensive Plan to Manage Encroachment on Training Ranges,” GAO-02-614, June 2002.

² The national “direct military spending” and “civilian expenditure” figures are for the year 2000 and are calculated by the [Bureau of Economic Analysis](#) at the U.S. Department of Commerce.

³ This information can be found in a report prepared by The Maguire Company, entitled “[Economic Impact of Arizona’s Principal Military Operations](#),” released in May of 2002; a study prepared by Fishkind and Associates, entitled “[Economic Impacts of Military Base Activity in Florida](#),” released in March of 1998; and in [SB 1468](#), the “Military Readiness” bill passed by the California State Legislature in August of 2002.

⁴ The “gross state product” and “federal military spending” figures in this paper are for the year 2000 and are calculated by the [Bureau of Economic Analysis](#) at the U.S. Department of Commerce. The “economic impact” estimates, calculated by using a multiplier, can be found in a report prepared by The Maguire Company, entitled “[Economic Impact of Arizona’s Principal Military Operations](#),” released in May of 2002. The multiplier is a ratio which measures the ripple effect that an initial expenditure has on the economy. Multipliers are commonly used in economic impact studies and vary based on the selected study methodology.

⁵ Governor of Arizona News Page; Phoenix - March 28, 2001.

⁶ The “economic impact” estimates can be found in [SB 1468](#), the “Military Readiness” bill passed by the California State Legislature in August of 2002. The military personnel and installation data can be found in a study by the University of California, Berkeley, entitled “[Forecasting and Mitigating Future Urban Encroachment Adjacent to California Military Installations](#),” prepared in June of 2001, as well as in [SB 1099](#), the California Defense Retention and Conversion Act of 1999.

⁷ The “economic impact” estimates can be found in a study prepared by Fishkind and Associates, entitled “[Economic Impacts of Military Base Activity in Florida](#),” released in March of 1998.

⁸ Governor of Florida News Page, Tyndall Air Force Base – August 28, 2001.

⁹ The “economic impact” figure is an estimate by the Aurora Chamber of Commerce and the employment information is provided by the Aurora Economic Development Council.