



ENCROACHMENT STUDY COMMITTEE

Key Findings & Recommendations

February 2007

Executive Summary
Southern Maryland Navy Alliance
Encroachment Study Committee

The overriding objective of the Encroachment Study Committee is to provide recommendations to St. Mary's County decision-makers that will result in policies that balance economic growth with an unswerving devotion to maintaining world-class Department of Defense facilities and airspace free from encroachment at the Navy's Patuxent River complex.

NAS Patuxent River

Today, NAS Patuxent River is the Navy's principal site for Navy aviation acquisition, research, development, test, and evaluation. Together with Webster Field, the facilities are the largest employers in St. Mary's County, accounting for 19,200 jobs and \$520 million in payroll. NAS Patuxent River personnel are involved in the acquisition, research, development, test and evaluation of almost all new aircraft in the Department of Defense's inventory, including the new Presidential Helicopter, the Global Hawk unmanned air vehicle and the Joint Strike Fighter. Because of constantly changing technology and impacts to the Patuxent River Air Installations Compatible Use Zone (AICUZ) plan, a continuous effort must be in place to monitor and mitigate encroachment.

Past Actions to Reduce Encroachment

In the 1970's, Navy officials at NAS Patuxent River anticipated the residential growth in St. Mary's County and submitted to the County an AICUZ plan to manage encroachment. This plan has worked well, clarifying the Navy's expectations of the County regarding its missions and provided guidance to the County to adopt smart-growth land compatibility laws which protect the base while minimizing safety hazards to the citizens of St Mary's County. The County gave maximum cooperation to the Navy's needs which has allowed operations at NAS Patuxent River and Webster Field to expand without the fear from incompatible development that has plagued many other Navy communities.

Over time, as operations have expanded at NAS Patuxent River, residential and business development has naturally increased and has come closer to both facilities. St. Mary's County continues to be pro-active and has passed effective land compatibility legislation, purchased tracts of land to pre-empt encroachment, and established formal coordination channels with Navy leadership at NAS Patuxent River to discuss pending development proposals. While these actions have effectively minimized encroachment challenges, a number of pending development proposals and new realities in aircraft technology has made an updated review of the County's encroachment policies necessary.

Recommendations for Future Action

After careful review by the Encroachment Study Committee, the following recommendations are offered to the County to ensure St. Mary's County continues to be on the forefront of effective local action to reduce the threat of encroachment. The recommendations address five overall objectives:

- Improving Ongoing St. Mary's County/Navy Communication
- Eliminating Future Residential Development in APZ-2
- Creating a Buffer Zone
- Addressing Encroachment Issues at Webster Field
- Analyzing Merits of a Joint Land Use Study

These recommendations will significantly upgrade the encroachment protection provided by the existing AICUZ ordinance by reducing threats within the AICUZ related to accident potential and noise. They will also create a mechanism to identify and ameliorate other types of encroachment, unseen and unheard, but potentially crippling to the Navy's mission, such as electromagnetic interference and light pollution. The Committee believes new zoning language can be crafted that enables landowners to retain reasonable uses for their property while enacting further protection for the AICUZ and a buffer zone.

Throughout the document, there are a number of references to actions taken by other communities to deal with encroachment. We believe these examples are instructive and merit further study for potential application at NAS Patuxent River and Webster Field. We also believe these examples demonstrate the commitment that other communities have taken to keep their military bases open. In an era where force structure continues to shrink and where BRAC rounds are a constant threat, these actions amount to a zero sum game whereby winners and losers are the result. That is, some bases will grow and thrive while others will erode and close.

Finally, each recommendation proposes a policy objective. Additional work in close consultation with County leadership, County land-use planners, local businesses and the Navy will be required to develop the specifics of each recommendation.

Specific Recommendations

Ongoing St. Mary's County/Navy Communication

- Use the pending NAS Patuxent River Complex Encroachment Action Plan as the basis for a Memorandum of Understanding (MOU) jointly signed by the Commanding Officer, NAS Patuxent River and St Mary's County.
- Establish a formal means, via the MOU, that ensures feedback and a recommendation from the Commanding Officer, NAS Patuxent River on any new, perceived or real encroachment issues as they arise.
- Establish a twice-yearly meeting between the Commanding Officer, NAS Patuxent River, County Commissioners and senior administrators to improve planning and review of progress on critical community issues.
- Utilize the MOU for joint Navy-County educational and outreach efforts that focus specifically on encroachment and AICUZ-related issues.

- Continue joint Community-Navy technical reviews of development proposals, consistent with the St Mary's County Technical Evaluation Committee.

Residential Development in NAS Patuxent River APZ-2

- Amend AICUZ ordinance to prohibit new residential development in APZ-2. This change will not affect existing residential property.

Buffer Zone

- Define a buffer zone in which residential density cannot be increased and in which additional noise mitigation is required for both residential and commercial uses.
- Boundaries of the buffer zones and specific requirements are to be determined with involvement of County government, the development community, and in consultation with the Navy.
- Analyze proven examples at Luke AFB, NAS Whiting Field, and NAS Pensacola as potential references for ordinance changes.

Encroachment Issues at Webster Field

- Develop a joint Navy-local community program of land and easement acquisition for the Clear Zone at Webster Field. Investigate all available funding sources for this program, including military construction funding, state and local agricultural land preservation programs, and the Department of Defense's Readiness & Environmental Protection Initiative.
- Include the details of the Navy-local community land and easement program in the Navy / St. Mary's County MOU.
- Develop an AICUZ overlay established in a County ordinance for Webster Field that will include a projected APZ-1 and APZ-2.
- Consider a buffer zone at Webster Field consistent with the goals and objectives of a NAS Patuxent River buffer zone.

Analyze Merits of a Joint Land Use Study

- Utilize the Encroachment Study Committee to liaison with the Navy and all affected regional communities to determine the utility/merits of establishing a NAS Patuxent River Complex Joint Land Use Study (JLUS).
- JLUS are becoming commonly used mediums to provide recommendations regarding compatible land development policy.
- Consider the advantages of utilizing the Maryland Military Installations Council (MMIC) to charter the JLUS and to establish an on-going JLUS Regional Coordinating Committee including representatives from local and state (VA, MD, NC, DE, and NJ) regions.

Southern Maryland Navy Alliance

Encroachment Study Committee

Report of Findings

I. Introduction

In July 2006, the Southern Maryland Navy Alliance (SMNA) convened an Encroachment Study Committee to help elected officials, business leaders and community members evaluate potential actions and policies that would reduce the threat of encroachment to Department of Defense activities in St. Mary's County, namely at Naval Air Station Patuxent River and Webster Field. The Committee's immediate priority was to review current encroachment issues and offer recommendations to mitigate these issues. Additionally, the Committee consulted with Navy personnel and industry in order to account for future mission flexibility at NAS Patuxent River and Webster Field that is inevitable from a technological perspective and welcome from an economic one. Finally, the Committee focused on methods to reinforce County-Navy dialogue as the Navy develops and reviews Air Installations Compatible Use Zone (AICUZ) studies and completes action on an Encroachment Action Plan for NAS Patuxent River and Webster Field.

The Naval Air Station Patuxent River, commissioned in April 1943, is home to the Naval Air Systems Command headquarters (NAVAIR) and the Naval Air Warfare Center Aircraft Division. It is the Navy's principal site for Navy acquisition, research, development, test, evaluation, and engineering and fleet support activity for manned and unmanned aircraft, engines, avionics, aircraft/weapon support systems, weapons, aircraft landing & recovery systems and aviation training systems. The Naval Air Warfare Center Aircraft Division at Patuxent River (including Webster Field) is NAVAIR's research, development, test and evaluation activity for manned and unmanned aircraft, engines, avionics, aircraft support systems, special operations, advanced information systems and air traffic control for ship/shore air operations. More than 165,000 air operations take place annually at Patuxent River in over 780 restricted and 5,000 controlled square miles. The RDT&E capability ranges from concepts analysis and procurement to flight-testing and support equipment. Patuxent River occupies nearly 14,000 acres, five runways and 935 buildings. Other major tenant commands located at Patuxent River include: Naval Research Laboratory, Flight Support Detachment, Air Test and Evaluation Squadron One and other ancillary commands.

The Naval Air Station Patuxent River and Webster Field are the largest employers in St. Mary's County and together account for 19,200 jobs and \$520 million in payroll. The Navy is the county's #1 economic driver and the primary reason behind the county's growth. For example, following the BRAC 1993 round, and specifically between 1995 and 2000, total employment at the Patuxent River complex increased from 12,300 to 17,200, representing approximately 72.7% of the existing jobs available in the County in 2000. This growth has naturally attracted development that, over time, without oversight, can lead to encroachment.

The overriding objective of the Encroachment Study Committee is to provide recommendations to St. Mary's County decision-makers that will result in policies that balance economic growth with an unswerving devotion to maintaining world-class Department of Defense facilities and airspace free from encroachment.

II. Key Findings

1. The threat to future operations from encroachment is real and the Department of Defense is taking notice.
 - Notable cases such as NAS Oceana derived from a long-documented history of poor cooperation and communication between the Navy and community. Often, Navy recommendations against development were ignored.
 - "I am increasingly troubled over a trend in recent years by local government to turn a blind eye to Navy concerns in favor of housing developers."
BRAC 2005 Testimony: ADM Mike Mullen, Chief of Naval Operations
 - At the same time, many communities have realized the positive economic impact of their neighboring military bases and the devastating impact of BRAC, and have responded pro-actively with aggressive land-use compatibility ordinances.
2. Encroachment protection is a "continuous effort" with "compatibility" as its goal.
 - Land use controls are the responsibility of local government. The Navy will only provide guidance and advice.
 - Some communities are making extraordinary efforts to reach compatibility and to set the stage to accept newer, louder, and potentially unmanned air vehicles. The communities around NAS Whiting Field and NAS Pensacola have enacted buffer zones. MCAS Miramar has a larger APZ-2 to maintain a corridor to the ocean and prohibits residential development in a buffer zone above the 60 DNL noise contour. Luke AFB and Davis Monthan AFB in Arizona have buffer zones with density restrictions and residential growth restrictions.
 - St. Mary's County legislators have led successful efforts to pass a Maryland law requiring homebuyer notification of the potential for noise from nearby military installations and has an active AICUZ system with corresponding land-use ordinances.

- There is a case to be made that pro-active land compatibility ordinances enacted by these communities saved their local bases from closure in the latest BRAC round.
 - Compatibility is an imperative and must be continuously monitored to conform with change.
3. New and potentially louder aircraft systems and the use of unmanned aerial vehicles (UAVs) means local government must make sound judgments to keep their facilities viable in the future.
- Undersecretary of Defense Phil Grone informed the Encroachment Study Committee that “joint management by the Navy and the community” of DoD facilities should go “beyond the AICUZ borders.”
 - Deputy Under Secretary of Defense Phil Grone emphasized that DoD will not be creating new bases, so existing infrastructure is critical. “Future needs may require a larger footprint.”
 - Chief of Naval Operations guidance (OPNAV INST 11010.36B) requires the Navy to evaluate operational alternatives to reduce noise and accident potential zone impacts. NAS Patuxent River leadership is pro-active in its efforts to accommodate local concerns regarding aviation operations, particularly those related to noise, by adjusting the timing and location of operations.

III. Background

Encroachment has become a major liability to military bases being studied during periodic base closure and realignment (BRAC) rounds. Even without the threat of a BRAC round, the Department of Defense can modify force structure, move units and personnel, or otherwise decide to not invest in military facilities where encroachment poses a threat to continued military operations.

The Department of Defense established the Air Installations Compatible Use Zones (AICUZ) program to balance the need for aircraft operations and community concerns. AICUZ guidelines define zones of high noise and accident potential and recommended uses compatible within these zones. The Department of Defense provides noise zones as a planning tool for local planning agencies with the intent that they will encourage local governments to apply these guidelines in their land-use decision-making processes.

Under the AICUZ program, DoD provides noise zones as a planning tool for local planning agencies. These noise zones are based on the day-night average sound level, or “DNL”, and they take the shape of noise contours on AICUZ maps. Additionally, DoD provides Accident Potential Zones (APZs) as a planning tool for local land use agencies. APZs are areas where an aircraft accident is likely to occur if one occurs. An AICUZ map defines three APZs for Class B airfields that allow high-performance fixed-wing aircraft; a Clear Zone extending 3,000 feet beyond the runway, APZ-1 extends 5,000 beyond the Clear Zone, and APZ-2 extends 7,000 feet beyond APZ-1, for a total of 15,000 feet beyond the end of the runway. Most importantly, DoD

provides land-use compatibility guidelines for noise zones and APZs. For example, the Navy recommends only agricultural and public rights-of-way be allowed in the Clear Zone, while allowing for wholesale and manufacturing in APZ-1 and limited residential in APZ-2.

AICUZ land-use compatibility guidance is not binding and they serve as guidelines only. Local governments alone are responsible for regulating land use.

IV. Encroachment and St. Mary's County

Throughout the United States, communities are struggling to meet the challenges of encroachment near military bases. On November 7, 2006, the Commonwealth of Virginia and the City of Virginia Beach filed lawsuits against the Department of Defense in an attempt to overturn a 2005 BRAC decision that was motivated wholly by the City's inability to address incompatible land use around Naval Air Station Oceana. At Nellis AFB, near Las Vegas, fighter aircraft carrying live ordinance can no longer take-off in a northerly direction because of encroachment, which is now threatening to encircle Nellis AFB on four sides. Urban sprawl from Los Angeles and San Diego has stymied training at Camp Pendleton due to community noise complaints and endangered species.

St. Mary's County is ahead of most communities because of its long-standing AICUZ overlay zone, originally adopted in 1979, and regular consultation with the Navy on development proposals. The St. Mary's County Comprehensive Zoning Ordinance, effective May 13, 2002, recognizes a Clear Zone, APZ-1, and APZ-2 around airport environs (AE), as well as, noise level contour lines. Section 43.3 *Land Use and Development Regulations Generally* specifies permitted uses in the AICUZ or AE districts, which are consistent with Navy standards.

Clear Zones: St. Mary's County allows no development in the clear zone. Agricultural activity, with the exception of livestock, is permitted. This guidance is consistent with Navy standards. NAS Patuxent River has no encroachment issues in the clear zones. At Webster Field, there are some less concentrated residential uses (i.e., single-family homes on slightly larger lots) within the clear zones. It is important to note the Navy does not own the property comprising the Webster Field clear zone. However, Navy officials have indicated that there are a number of methods to mitigate this issue, including the authorization of military construction funds to purchase the land in the clear zone or to place restrictive easements on it.

APZ-1: St. Mary's County allows no residential activity in APZ-1 and puts limits on most industrial/manufacturing and other activities. There are no encroachment issues in the NAS Patuxent River APZ-1.

APZ-2: St. Mary's County allows a maximum of two residential dwelling units per acre in APZ-2 and a wide variety of industrial, manufacturing, commercial, and transportation, all consistent with Navy guidance. Pockets of existing housing, mostly older, remain in APZ-2, mainly at Southampton and Essex South. Density varies, since some of this housing pre-dates adoption of the AICUZ guidelines.

Significant effort has been made to monitor and mitigate encroachment in APZ-2. The south parcel of Lexington Manor (50 acres inside APZ-2) was purchased with Program Open Space and Federal Government Community Development Block Grant funds. Use is restricted to recreational open space by both funding programs.

The County has precluded residential development on approximately 34 acres in the north parcel of Lexington Manor. By agreement with the Community Development Corporation, the County will also preclude residential development on adjacent property.

Nevertheless, in APZ-2, some development proposals seek to take underlying residential density, i.e., more than the AICUZ limit of two units per acre, from APZ-2 and apply it across the boundary to adjacent land.

The Encroachment Study Committee finds that any new residential construction within APZ-2 or on the edges of APZ-2 represents an encroachment threat and believes it would establish a new trend of housing construction within and near the AICUZ.

V. Encroachment Action Plan (EAP) and Next Steps by the Navy

St Mary's County leadership must realize that the Navy is continually assessing the state of encroachment at the Patuxent River complex. The EAP is a "situational awareness" tool for the Commanding Officer of the Naval Air Station. In fact, the Navy is currently completing a new Encroachment Action Plan, which according to their briefing, will "identify, quantify and create a plan for mitigating potential encroachment challenges within the Patuxent River complex environs." The goals of the EAP are:

- Delineate encroachment challenges for the Patuxent River complex
- Identify underlying factors
- Outline encroachment management strategies to manage challenges
- Provide short, medium, and long-term recommendations for action to eliminate or mitigate encroachment

The Navy recognizes encroachment from many sources. It will be important that St. Mary's County remains vigilant to all forms of encroachment, not just easily identifiable ones such as residential growth and noise. For example, the Navy's plan will consider the following:

- Urban growth
- Airborne noise
- Competition for air space, land and sea space
- Frequency spectrum
- Lighting (Light Pollution)
- Ordnance and unexploded ordnance and munitions
- Threatened and endangered species
- Maritime issues, such as LNG tankers

- Air and Water quality
- Competition for scarce resources (oil, gas, minerals)
- Inter-agency coordination, challenges to military activities, and legislative initiatives

The Navy's focus on Patuxent River is no doubt a reflection of the importance it puts in the facility. It also reflects the significant uncertainty about the nature of aircraft that might be flown from Patuxent River in the future, including their noise profiles and accident potential. The community must make educated judgments regarding the degree to which it will protect the facility with the future in mind. Consider:

- Actual in-flight measurements of the Joint Strike Fighter (F-35 Lightning II) have not been made.
- The Draft JSF environmental assessment model predicts a slight decrease (5.1%) in acres off-installation affected by DNL greater than 65 decibels. However, verbal reports from a number of interviews predict a louder profile for the JSF.
- The increased use of unmanned aerial vehicles (UAVs), a growing component of Naval Aviation, will bring different noise profiles and accident potentials.

The Encroachment Study Committee finds that a number of encroachment issues merit continuing attention from the community, primarily noise. Given the uncertain noise profiles of future technology, the community should proceed cautiously to reduce the likelihood of future encroachment.

V1. Issues & Recommendations

The Committee has identified five issues and provides recommendations to address each.

1. Ongoing St. Mary's County / Navy Communication

Discussion:

- The current system for joint County and Navy review of development proposals is strong and effective.
- NAS Patuxent River has a designated liaison official to the community that consults regularly with the County's planning department on pending development proposals.
- The community responded well after the BRACs of the 1990s, identifying Navy needs for community infrastructure and support and then meeting those needs.
- The County further improved its planning and communication through specific lists of community priorities to support the Navy in the years leading up to BRAC 2005.
- Navy needs are increasingly fluid; local development pressures are stronger; the economic stakes are higher. There is a need for more structured, systematic ongoing communication.
- Navy missions and technology evolve rapidly. Regularly scheduled communication will allow the County to focus not only on the development issue at-hand, but to prepare and educate County leadership to specific technological issues that could potentially, over-time, weaken Patuxent River; e.g. light pollution, electromagnetic interference.

Recommendations:

- Use the pending Patuxent River Complex Encroachment Action Plan as the basis for a Navy-St Mary's County Memorandum of Understanding between the Commanding Officer, NAS Patuxent River and the St. Mary's County Board of County Commissioners.
- Establish a formal means, via the Memorandum of Understanding, that ensures feedback and a recommendation from the Commanding Officer, NAS Patuxent River on any new, perceived or real encroachment issues as they arise.
- Establish a twice-yearly meeting between the Commanding Officer, NAS Patuxent River and County Commissioners and senior administrators to improve planning and review of progress on critical community issues.
- Utilize the Memorandum of Understanding for joint Navy-County educational and outreach efforts that focus specifically on encroachment and AICUZ-related issues.
- Continue joint Community-Navy technical reviews of development proposals, consistent with the St Mary's Technical Evaluation Committee.

2. Residential Development in the NAS Patuxent River APZ-2**Discussion:**

- New development proposals that seek to take underlying density from APZ-2 and apply it across the boundary to adjacent land, as well as existing housing in APZ-2, present an encroachment threat.
- Given the unique attention being paid to encroachment inside APZs and given Patuxent River's inevitable scrutiny prior to acceptance of the F-35 Lightning II and future UAVs, all efforts should be made to make APZ-2 encroachment-free.
- Similarly, the Clear Zone and APZ-1 must remain free from encroachment.

Recommendation:

- Amend AICUZ ordinance to prohibit new residential development in APZ-2. This change will not affect existing residential property.

3. Buffer Zone**Discussion:**

- Noise contours greater than 60 DNL extend beyond the borders of the AICUZ. Single event noise can be disruptive beyond the AICUZ border.
- Pending development proposals have requested zoning changes to increase residential density immediately across the AICUZ boundary.
- Comments by Deputy Under Secretary of Defense Grone indicate that future DoD decisions will heavily weigh the extent to which facilities are hemmed in by dense development.
- Navy guidelines have recently been published regarding sound mitigation construction techniques.

Recommendations:

- Define a buffer zone in which residential density cannot be increased and in which additional noise mitigation is required for both residential and commercial uses.
- Boundaries and specific requirements to be determined with involvement of County government, the development community, and in consultation with the Navy.
- Analyze proven examples at Luke AFB, NAS Whiting Field, and NAS Pensacola as potential references for land use changes.

4. Encroachment Issues at Webster Field**Discussion:**

- The Clear Zone at Webster Field is in non-Navy ownership and includes residential property.
- Increased use of Webster Field is a strong possibility, especially related to UAVs.
- Given the transformational technologies being developed and tested at Webster Field, a clearer understanding of all forms of encroachment, including electronic interference, noise, and light pollution, must be ascertained.
- A new AICUZ study for Webster Field will be available in early 2007.
- The surrounding zoning is Rural Preservation District (RPD) or 1 dwelling per 5 acres, hence more restrictive than the current APZ-2 at NAS Patuxent River (2 dwellings per acre).
- The County should be prepared to adopt ordinances to ensure protection around Webster Field.

Recommendations:

- Develop an AICUZ overlay established in a County ordinance for Webster Field that includes a projected APZ-1 and APZ-2.
- Consider a buffer zone at Webster Field consistent with the goals and objectives of a NAS Patuxent River buffer zone.
- Develop a joint Navy/local community program of land and easement acquisition for the Clear Zone at Webster Field. Investigate all available funding sources for this program, including military construction funding, state and local agricultural land preservation programs, and the Department of Defense's Readiness & Environmental Protection Initiative.
- Include the details of the Navy-local community land and easement program in the Navy / County MOU as outlined above.

5. Analyze Merits of a Joint Land Use Study (JLUS)**Discussion:**

- NAS Patuxent River, Webster Field, and the Mid-Atlantic Test and Training Range operations impact and are impacted by encroachment from areas well outside St. Mary's Country, ranging from Maryland's Eastern Shore to the Northern Neck of Virginia.
- A Joint Land Use Study (JLUS) is an effective means to create a uniform planning policy environment to minimize encroachment.

- One existing JLUS, the Hampton Roads JLUS, includes eight primary categories: (1) coordination/organization (2) communications/information (3) sound attenuation (4) real estate disclosure (5) planning and public policy (6) land use regulation (7) acquisition and (8) military operations.

Recommendations:

- Utilize the Encroachment Study Committee to liaison with the Navy and all affected regional communities to determine the utility/merits of establishing a NAS Patuxent River Complex JLUS.
- Consider the advantages of utilizing the MMIC to charter the JLUS and to establish an on-going JLUS Regional Coordinating Committee including representatives from local and state (VA, MD, NC, DE, and NJ) regions.