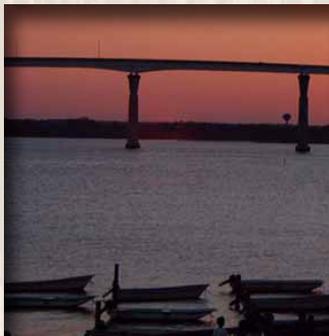


EXECUTIVE SUMMARY

JANUARY 2015



NAVAL AIR STATION PATUXENT RIVER JLUS OVERVIEW

The Naval Air Station (NAS) Patuxent River (PAX) Joint Land Use Study (JLUS) was conducted as a collaborative planning effort that included the following project partners and stakeholders:

Maryland

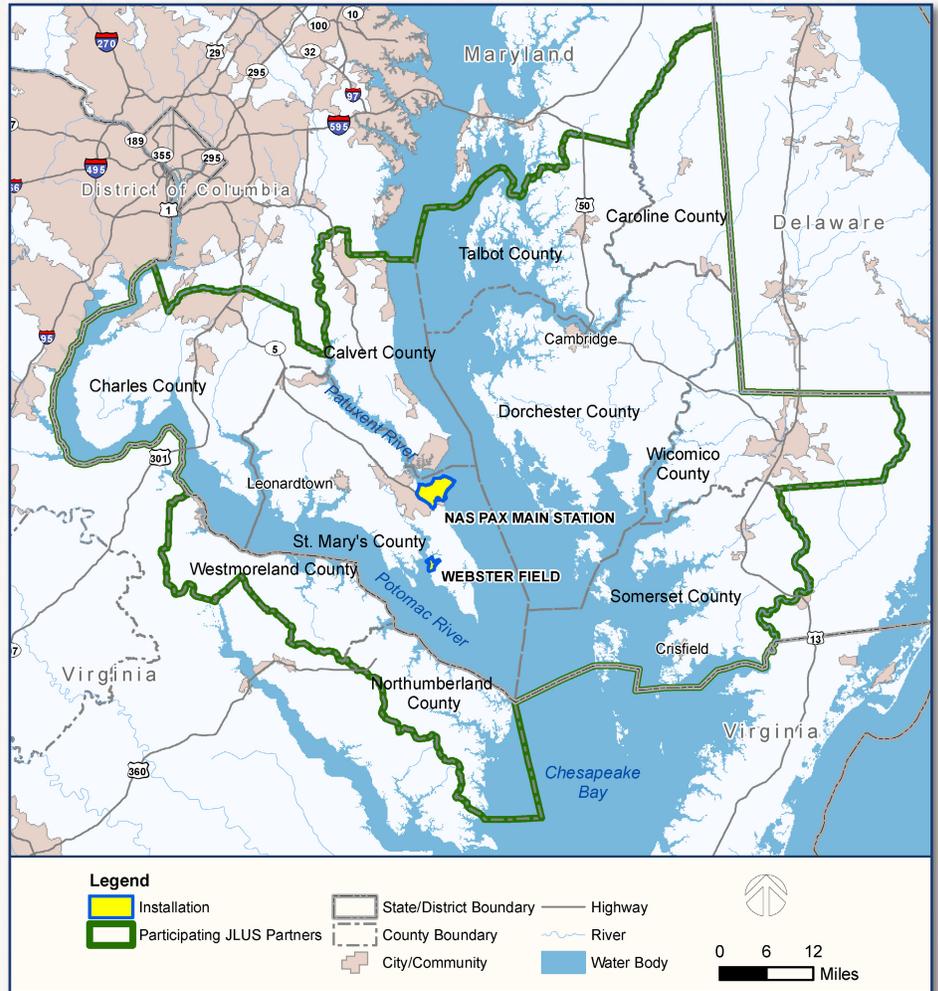
- Calvert County
- Caroline County
- Charles County
- Dorchester County
- St. Mary's County
- Talbot County
- Wicomico County
- City of Cambridge
- City of Crisfield
- Town of Leonardtown
- NAS PAX
- Naval District Washington
- Naval Support Activity South Potomac
- Naval Facility Engineering Command Washington
- Naval Air Systems Command
- Southern Maryland Navy Alliance
- County and Regional Councils
- Land Conservancies and Land Trusts
- State Agencies
- Community organizations
- Property owners

Virginia

- Northumberland County
- Westmoreland County
- Northern Neck
- Planning District
- Community organizations
- Property owners

Other

- US Navy
- Federal agencies



The intent of this planning effort is to establish and foster an on-going working relationship among NAS PAX and communities throughout the region. The JLUS was developed under the guidance of three main objectives:

UNDERSTANDING. Increase communication between the military, local jurisdictions, and stakeholders to promote an understanding of the strong economic and physical relationship between NAS PAX and their neighbors.

COLLABORATION. Promote collaborative planning between the military, local jurisdictions, and stakeholders in order to ensure a consistent approach in addressing compatibility issues.

ACTIONS. Develop and implement strategies for reducing the impacts of incompatible activities on the community and military operations. Design tools to support compatibility in the future.

The JLUS effort can directly benefit NAS PAX and the surrounding region by:

- Protecting the health and safety of surrounding residents and workers;

- Preserving long-term land use compatibility between NAS PAX and the surrounding communities;
- Promoting community planning; and
- Encouraging cooperation between the military installation and community officials.

The JLUS was undertaken in an effort to develop a set of recommendations that would prevent or mitigate encroachment in the areas surrounding the NAS PAX complex including the Main Station, Webster Outlying Landing (Webster) Field and the Atlantic Test Range (ATR) Inner Test Range. The JLUS recommendations help protect the installations' military missions, and the public's health, safety, welfare, quality of life, and economic stability of the communities.

COLLABORATIVE PLANNING

The JLUS planning process was designed to create a locally relevant plan that builds consensus and obtains support from the various stakeholders involved. The general public was instrumental in the development of this JLUS by providing their perspective and feedback, both in the JLUS public workshops and through the use of the interactive project website.



The development of the project was also guided by two committees composed of community and military stakeholder representatives. These two committees were the Policy Committee, which provided project oversight, guidance, and decision-making, and Technical Advisory Groups which assisted in the identification and assessment of compatibility issues, the creation of recommendations, and the overall report development.

NAVAL AIR STATION PATUXENT RIVER



NAS PAX COMPLEX

The NAS Patuxent River Complex includes the NAS PAX Main Station, Webster Field, Naval Recreation Center Solomons (excluded from the JLUS due to low impact operations), and the ATR Inner Test Range which includes the Bloodsworth Island Range. NAS PAX is the largest regional employer either creating or supporting over 41,000 jobs and contributing over \$8 billion annually in Maryland.

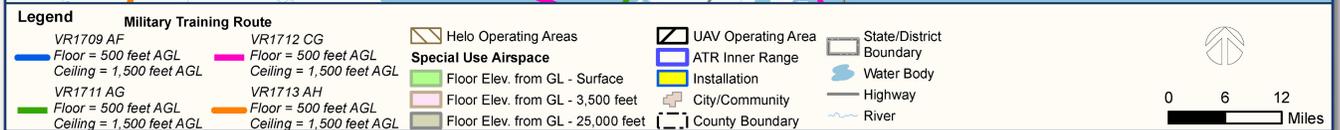
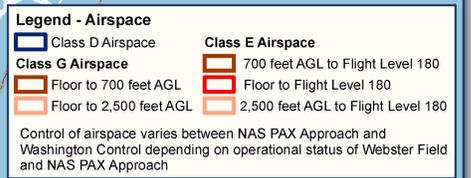
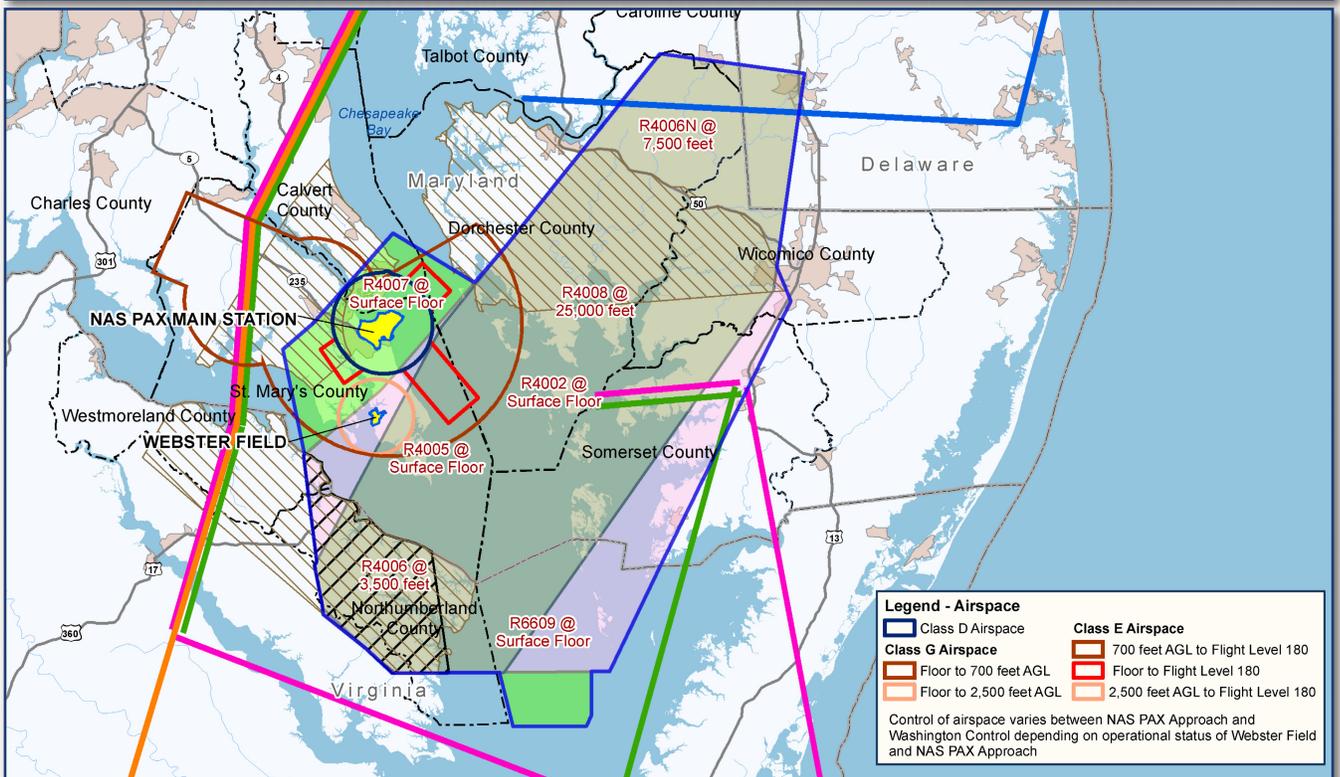
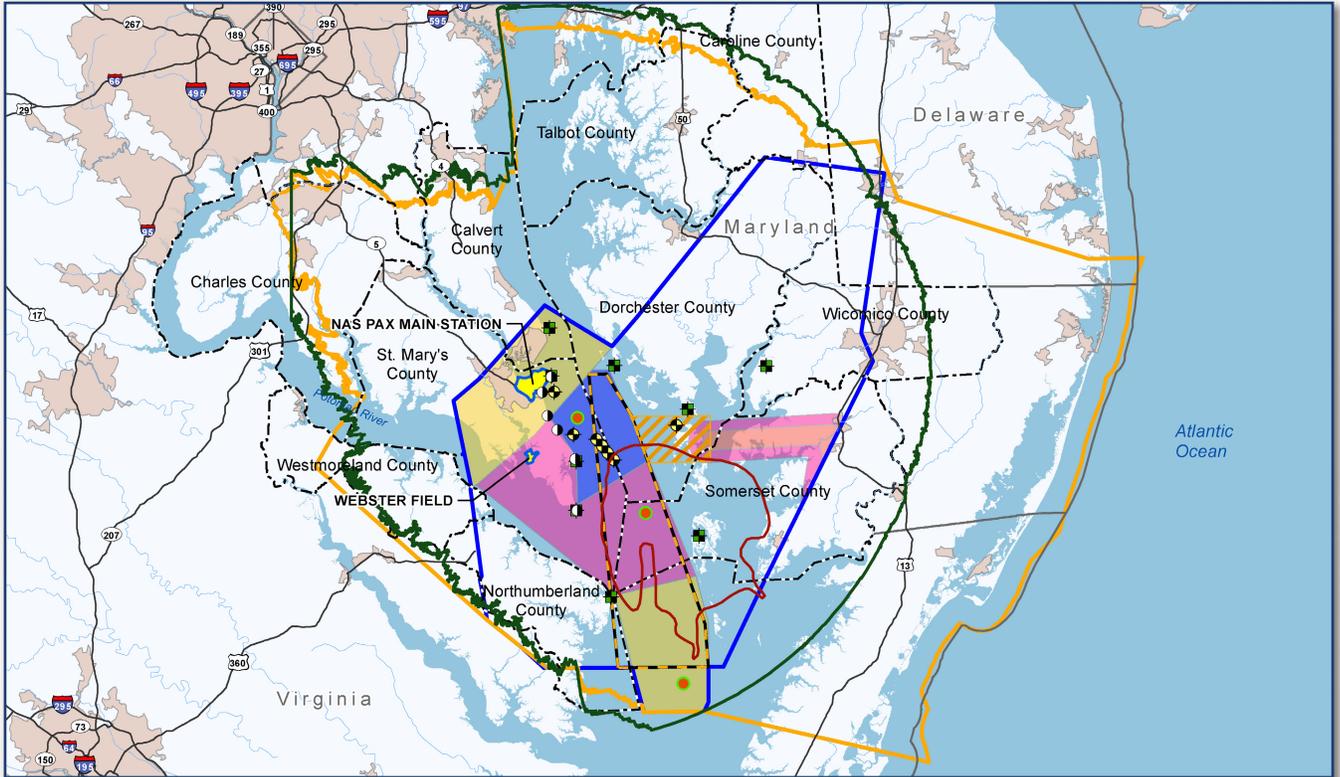
NAS PAX serves as the Navy's Center for Aviation Excellence providing services in support of Naval Air Systems Command, Naval Air Warfare Center Aircraft Division, Naval Test Wing Atlantic, and other activities and units. The NAS PAX Main Station occupies approximately 6,500 acres, and contains three runways and various support facilities such as hangars to accommodate the variety of aircraft. Webster Field occupies approximately 900 acres of land 10 miles south of the Main Station. Activities include helicopter, glider, unmanned aerial systems, and limited fixed-wing operations. The ATR Inner Test Range is an instrumented Navy range operating area overlying an area of land, airspace, and surface water in the middle of the Chesapeake Bay.

RANGE OPERATIONS

The Naval Air Systems Command Range Department controls and manages airspace, aircraft operations, and the target areas within the ATR Inner Test Range. The open air range and ground test facilities provide research, development, acquisition, testing and evaluation for fleet and war fighter pre-deployment and readiness exercises. Activities within the range include radar tracking, aerial firing, air-to-surface target firing, and weapons separation testing. Both subsonic and supersonic flight is conducted. A line-of-sight is required for the clear transmission of radar communications. In order to avoid adverse impacts to systems, a High Risk of Adverse Impact Zone has been designated in the region surrounding NAS PAX.

AIRSPACE OPERATIONS

Various types of military testing and training take place at NAS PAX and include both rotary-wing (helicopters) and fixed-wing aircraft. As a test and training facility, NAS PAX supports over 35 independent aircraft types and models ranging from modern fighter aircraft to World War II vintage aircraft, to unmanned aerial systems. Surrounding NAS PAX is a complex airspace environment to accommodate aviation testing and training needs. To safely conduct missions, several areas of restricted airspace have been established. Military testing and training is also conducted along military training route corridors to practice low-altitude, high speed, terrain-following training missions. Other areas have been designated for low-level helicopter and low performance fixed-wing aircraft, unmanned aerial systems flight operations, and supersonic flight operations in designated restricted areas.



JLUS RECOMMENDED STRATEGIES

The heart of the NAS PAX JLUS is the set of 79 recommended strategies that address compatibility issues throughout the study area. Since the NAS PAX JLUS is the result of a collaborative planning process, the strategies represent a true consensus plan; a realistic and coordinated approach to compatibility planning developed with the support of stakeholders involved throughout the process.

The key to implementing strategies is establishing a JLUS Implementation Coordinating Committee to oversee the JLUS execution and coordinate strategies with multiple partners. Concurrent with the efforts of the JLUS Implementation Coordinating Committee, each Study Area jurisdiction is responsible for establishing their own course of action to execute strategies unique to them through collaboration of planners, leadership, and the public. Since the Implementation Plan is intended to be a living document, each jurisdiction has the flexibility to revise and refine the Plan for their unique circumstances and use for tracking implementation actions and progress.

A key strategy to guide compatible development without overregulation is a zoning overlay district, titled Military Compatibility Area (MCA) Overlay District. The maps on the following pages illustrate the geographic boundaries of the overlay district and its compatibility sub areas for both the NAS PAX Main Station and Webster Field. The strategies that were developed during the JLUS process are described in detail in Chapter 6 of the JLUS Report, beginning on page 64. The following list provides highlights of some of the strategies identified. Because of the extensive JLUS study area the strategy highlights are provided separately for the Maryland Eastern Shore and area west of the Chesapeake Bay.

MARYLAND EASTERN SHORE

(CAROLINE COUNTY, DORCHESTER COUNTY, TALBOT COUNTY, WICOMICO COUNTY, AND THE CITY OF CAMBRIDGE)



BIOLOGICAL RESOURCES

- Seek Department of Defense funding to protect areas of environmental concern
- Expand existing environmental programs and outreach



COMMUNICATIONS

- Establish a JLUS Coordination Committee to oversee implementation of JLUS recommendations
- Establish a NAS PAX outreach and Good Neighbor Program
- Cooperate with the Navy to expand communication efforts with all jurisdictions within the study area
- Strengthen outreach to Eastern Shore communities
- Increase public understanding of noise sources
- Consider developing an airfield / airport awareness program
- Educate the public and local leaders about the NAS PAX High Risk of Adverse Impact Zone and potential safety hazards
- Make NAS PAX points of contacts more widely known



ENERGY DEVELOPMENT

- Develop guidelines for proper siting and use of appropriate solar technologies near airfields, flight corridors, and beneath military airspace
- Identify and map locations suitable for wind energy development
- Develop agreements between the military, county, and wind energy developers to support wind projects that allow for mission sustainment and economic feasibility of proposed projects



LAND USE

- Create a Military Compatibility Area Overlay District (MCAOD) containing Military Compatibility Areas (MCAs) that reflect the types and intensity of compatible uses
- Make existing compatibility guidance easily accessible to the public
- Establish airport overlay zoning districts around all regional airports used by NAS PAX



LEGISLATIVE INITIATIVES

- Conduct feasibility and utilization studies that identify the number of flight events by user and the economic benefit provided by the Navy's use of regional airports
- Seek federal assistance to formalize use of regional airports by the Navy through renewed contracts and agreements



VERTICAL OBSTRUCTIONS

- Develop a "Red, Yellow, Green" Map identifying locations throughout the NAS PAX Operating Area where tall structures (with defined heights) should be prohibited to protect public safety and ensure compatibility
- Include NAS PAX on tower siting and approval process
- Create a cell tower siting awareness program
- Develop a 3-dimensional imaginary surfaces model for use by regional airports and local jurisdictions

JLUS RECOMMENDED STRATEGIES

WEST OF THE CHESAPEAKE BAY

(CALVERT COUNTY, CHARLES COUNTY, NORTHUMBERLAND COUNTY, ST. MARY’S COUNTY, WESTMORELAND COUNTY, AND THE TOWN OF LEONARDTOWN)



ANTI-TERRORISM AND FORCE PROTECTION

- Increase boater awareness of NAS PAX location and prohibited shoreline areas



BIOLOGICAL RESOURCES

- Expand existing environmental programs and outreach



COMMUNICATIONS

- Establish a JLUS Coordination Committee to oversee implementation of JLUS recommendations
- Establish a NAS PAX outreach and Good Neighbor Program
- Establish sub-committee focused on regional traffic concerns
- Cooperate with the Navy to expand communication efforts with all jurisdictions within the study area
- Develop and distribute property owner educational materials that provide information on applicable regulations for development within the NAS PAX Operating Area
- Increase public understanding of noise sources
- Educate the public and local leaders about the NAS PAX High Risk of Adverse Impact Zone and potential safety hazards
- Educate local builders on sound attenuation
- Make NAS PAX points of contacts more widely known



ENERGY DEVELOPMENT

- Develop guidelines for proper siting and use of appropriate solar technologies near airfields, flight corridors, and beneath military airspace
- Identify and map locations suitable for wind energy development
- Develop agreements between the military, county, and wind energy developers to support wind projects that allow for mission sustainment and economic feasibility of proposed projects



LAND USE

- Apply St. Mary’s County AICUZ Overlay to include Webster Field
- Create a Military Compatibility Area Overlay District (MCAOD) containing Military Compatibility Areas (MCAs) that reflect the types and intensity of compatible uses
- Make existing compatibility guidance easily accessible to the public



LIGHT AND GLARE

- Develop and establish Dark Sky Lighting ordinance that minimize urban sky glow



NOISE

- Identify noise contours on county documents and in the decision-making process
- Seek assistance from NAS PAX to incorporate maps and updates to planning documents and guidelines to minimize noise concerns among residents



ROADWAY CAPACITY

- Continue existing efforts and seek additional support to improve flow across Thomas Johnson Bridge
- Seek alternative funding sources for transportation improvements
- Conduct a traffic study to assess community impacts on NAS PAX and vice versa
- Consider reopening Gate 3 to reduce traffic and congestion resulting from heavy use of Gates 1 and 2 and assist in supporting the economic vitality of the community
- Consider alternative modes of transportation to access NAS PAX Main Station



SAFETY

- Update NAS PAX’s BASH Program per the recently updated (January 2014) DOD Instruction with a focus on the elimination of wildlife attractants near runways
- Explore strategic land exchanges on land (private, state, federal) within and proximate to Webster Field Clear Zones and potential Accident Potential Zones
- Provide safety zone maps to local realtors and title companies



VERTICAL OBSTRUCTIONS

- Develop a “Red, Yellow, Green” (RYG) Map identifying locations throughout the NAS PAX Operating Area where tall structures (with defined heights) should be prohibited to protect public safety and ensure compatibility
- Include NAS PAX on tower siting and approval process
- Create a cell tower siting awareness program
- Develop a 3-dimensional imaginary surfaces model for use by regional airports and local jurisdictions



WATER QUALITY / QUANTITY

- Continue to monitor aquifers patterns of water quality and recharge associated with salt water intrusion

NAS PATUXENT RIVER MILITARY COMPATIBILITY AREA OVERLAY DISTRICT

Proposed Zoning Overlay

The MCAOD for NAS Patuxent River consists of the following five MCAs:

- Applicable to the entire Study Area:**
- Energy Development
 - Safety
 - Noise
 - Vertical Obstruction
 - Bird / Wildlife Aircraft Strike Hazard
- Applicable to each of the NAS PAX Main Station and Webster Field areas:**

MILITARY COMPATIBILITY AREAS

The term “Military Compatibility Area” (MCA) is used to formally designate a geographic area where military operations may impact local communities, and conversely, where local activities may affect the military’s ability to conduct its mission. The MCAs are geographic areas where specific types of recommended JLUS strategies apply.

An MCA is designated to accomplish the following:

- Promote an orderly transition between community and military land uses so that land uses remain compatible.
- Protect public health, safety, and welfare.
- Maintain operational capabilities of military installations and areas.
- Promote an awareness of the size and scope

of military training areas to protect areas separate from the actual military installation (i.e., critical air space) used for training purposes.

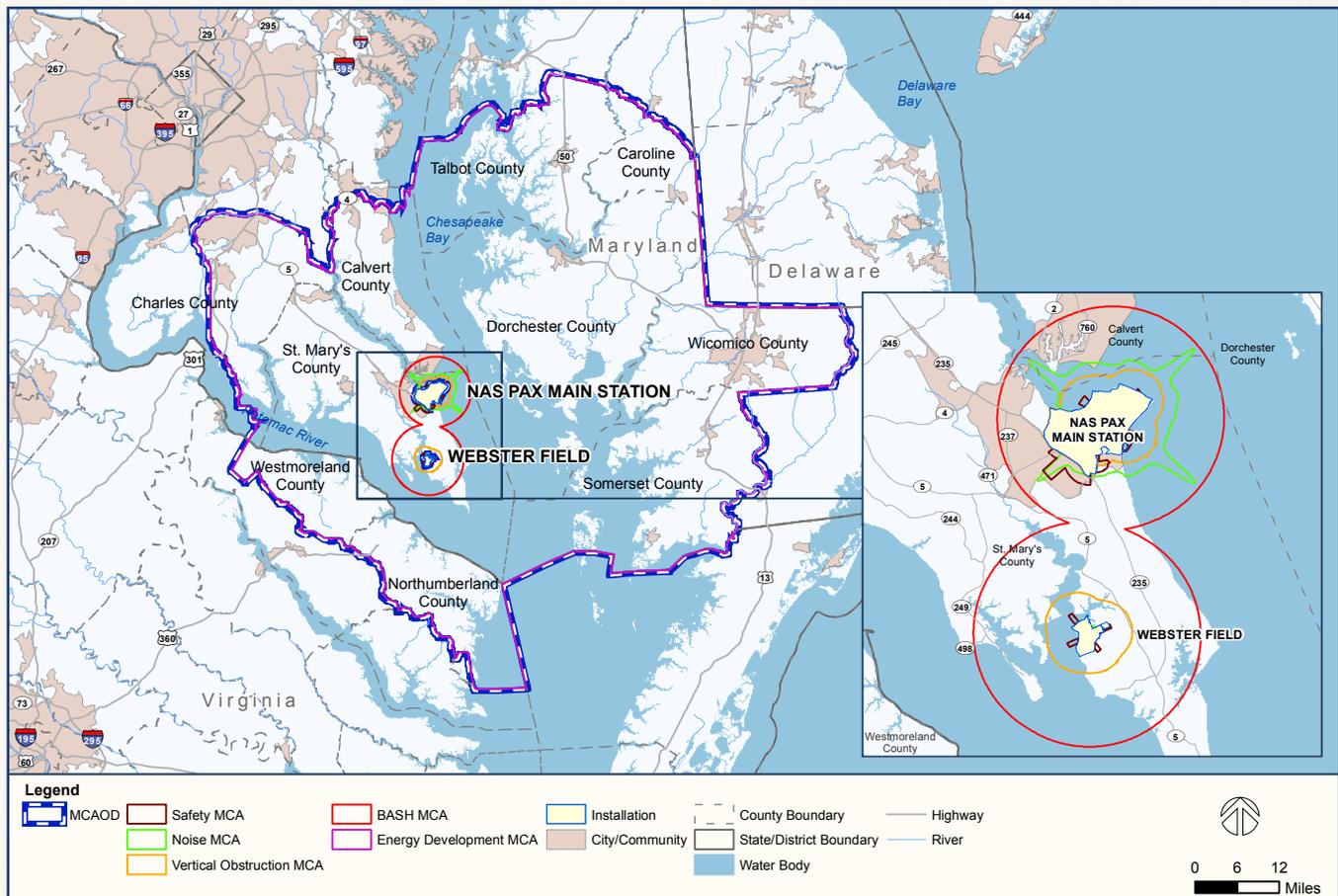
- Establish compatibility requirements within the designated area, such as requirements for sound attenuation and avigation easements.

An MCA delineates a geographic area where strategies are recommended to support compatibility planning and JLUS goal and objectives. To better reflect the area of interest and focus implementation, several MCAs are further divided into subareas.

The Military Compatibility Area Overlay District (MCAOD) is a zoning approach that ensures the JLUS strategies are applied to the appropriate

areas, and that locations deemed not subject to a specific compatibility issue are not adversely impacted by regulations or policies inappropriate for their location or circumstance. The MCAOD encompasses all the MCAs and its geographic boundary is defined by the largest MCA boundary. The MCAOD should be used by local jurisdictions to address ways to prevent or mitigate compatibility issues.

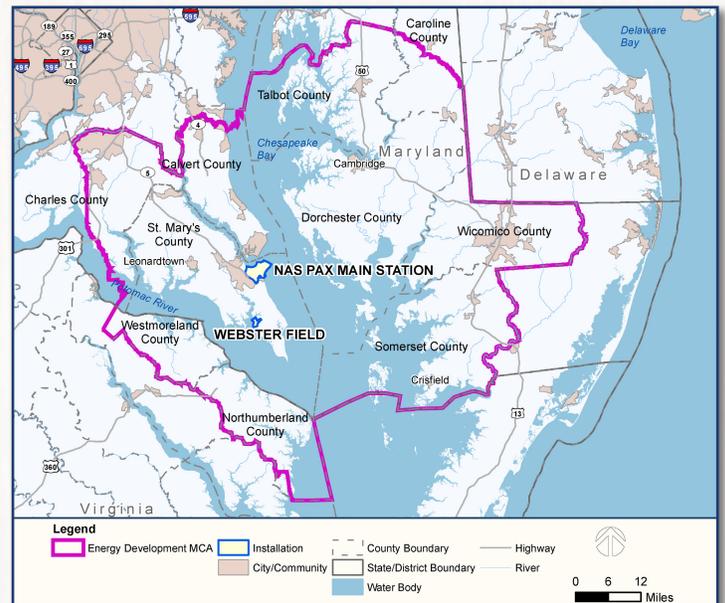
For the purpose of this JLUS, there is one MCAOD which includes MCAs for both NAS PAX Main Station (including the ATR Inner Test Range) and Webster Field. The Energy Development MCA applies throughout the JLUS Study Area. NAS PAX Main Station and Webster Field each have Safety, Noise, Vertical Obstruction, and Bird / Wildlife Aircraft Strike Hazard MCAs.



ENERGY DEVELOPMENT

Military Compatibility Area

The Energy Development MCA is an area characterized by existing, proposed, or potential areas for alternative wind energy development or other types of proposed structures that may have a height that penetrates into the NAS PAX Radar Viewshed area or the High Risk For Adverse Impact Zone that may cause vertical obstructions and / or frequency interference issues that could conflict with the military operations. This broad area covers St. Mary's County, Calvert County, Caroline County, Charles County, Dorchester County, Wicomico County, and Somerset County in Maryland and Northumberland and Westmoreland Counties in Virginia.



NAS PAX MAIN STATION



SAFETY Military Compatibility Area

The Safety MCA addresses areas that could be affected by low-speed and low-altitude aircraft associated with military training operations and comprises the airfield's Clear Zone (CZ) and Accident Potential Zones I and II. The airfield safety zones are characterized by a high risk for aircraft collisions due to location and types of aviation operations that occur based on statistical modeling of past aviation collisions. There are recommended guidelines for the types of land uses considered compatible with each of the safety zones.

NOISE Military Compatibility Area

The Noise MCA includes all land located off-installation within noise contours greater than 65 decibels Day-Night Average Sound Level (DNL) associated with noise from military activities. Noise is often a concern to the public surrounding military installations with a flight mission. Residential developments and other noise sensitive land uses within this MCA may be subject to sound attenuation measures to reduce interior noise impacts and achieve a maximum of 45 dB DNL inside buildings.

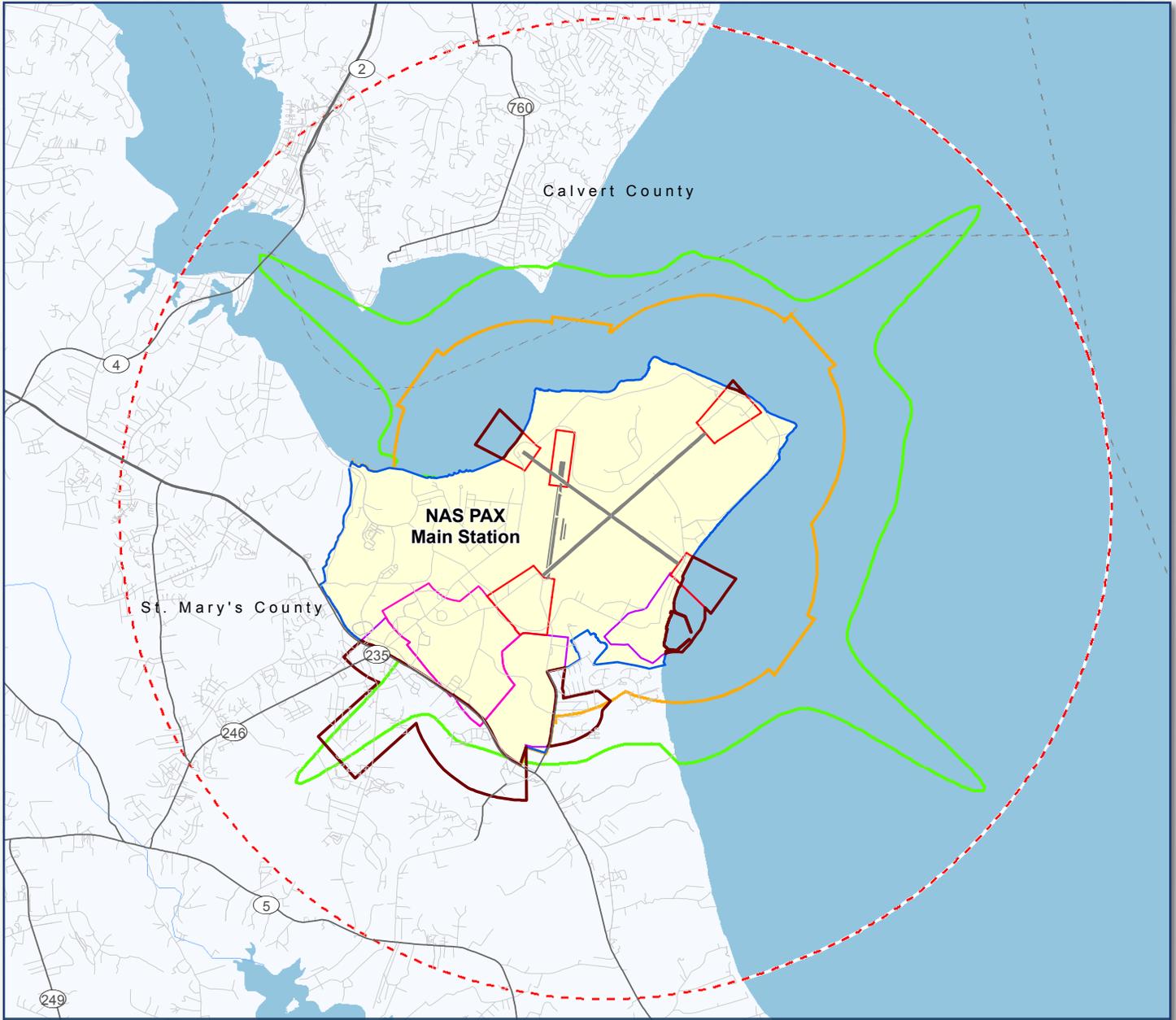
VERTICAL OBSTRUCTION Military Compatibility Area

The flight operations approach and departure areas are regulated by stringent height restrictions defined by FAA and military regulations. The Vertical Obstruction MCA is based on the DOD imaginary surfaces - Inner Horizontal Surface and Approach-Departure Clearance Surface for active runways and an additional one half nautical mile beyond these boundaries which restricts development of buildings and structures from 0 feet to 150 feet above mean sea level. The Vertical Obstruction MCA is intended to emphasize the importance of following the DOD imaginary surfaces with regard to structure height and is not intended to reduce or change guidance with regard to maximum height of structures.

BIRD / WILDLIFE AIRCRAFT STRIKE HAZARD (BASH) Military Compatibility Area

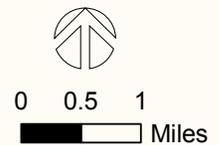
The BASH MCA extends out from the Main Station runways a distance of five statute miles. This MCA is meant to include areas around the airfield with the highest safety concerns if concentrations of birds or bird-attractions uses were located there. Bird strikes with aircraft can have serious safety concerns, including the potential for loss of life and / or aircraft. Even minor bird strikes can cause costly repairs to aircraft and interfere with training missions.

NAS PAX MAIN STATION



Legend

- | | | | | |
|------------|--------------------------|---------------------|-----------------|------------|
| BASH MCA | Noise MCA | Safety Zones | Installation | Water Body |
| Safety MCA | Vertical Obstruction MCA | CZ | County Boundary | Highway |
| | | APZ-I | Runway | Road |
| | | APZ-II | | |



WEBSTER FIELD

SAFETY
Military Compatibility Area



The Safety MCA addresses areas that could be affected by low altitude helicopter, Unmanned Aerial Systems (UAS) and fixed-wing aircraft associated with military training operations. The Safety MCA at Webster Field includes only the Clear Zones due to a low number of flight operations. The Clear Zone is characterized by a higher risk for aircraft collisions due to location and types of aviation operations that occur based on statistical modeling of past aviation collisions.

NOISE
Military Compatibility Area



The Noise MCA includes all land located off-installation within noise contours greater than 65 decibels (DNL) associated with noise from military activities. Noise is often a concern to the public surrounding military installations with a flight mission. Residential developments and other noise sensitive land uses within this MCA may be subject to sound attenuation measures to reduce interior noise impacts and achieve a maximum of 45 dB DNL inside buildings.

VERTICAL OBSTRUCTION
Military Compatibility Area



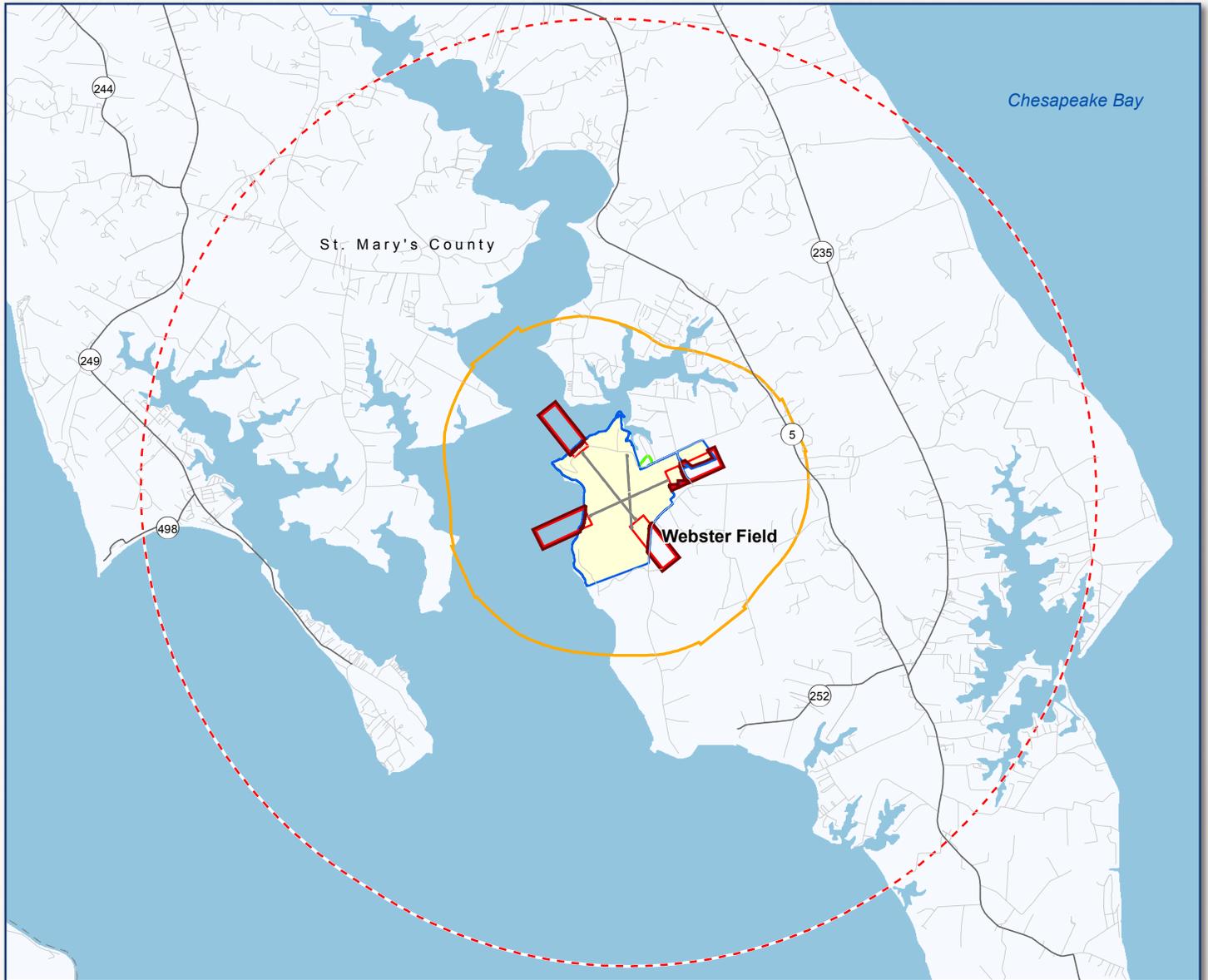
The flight operations approach and departure areas are regulated by stringent height restrictions defined by FAA and military regulations. The Vertical Obstruction MCA is based on the DOD imaginary surfaces - Inner Horizontal Surface and Approach-Departure Clearance Surface for active runways and an additional one half nautical mile beyond these boundaries which restricts development of buildings and structures from 0 feet to 150 feet above mean sea level. The Vertical Obstruction MCA is intended to emphasize the importance of following the DOD imaginary surfaces with regard to structure height and is not intended to reduce or change guidance with regard to maximum height of structures.

BIRD / WILDLIFE AIRCRAFT STRIKE HAZARD (BASH)
Military Compatibility Area



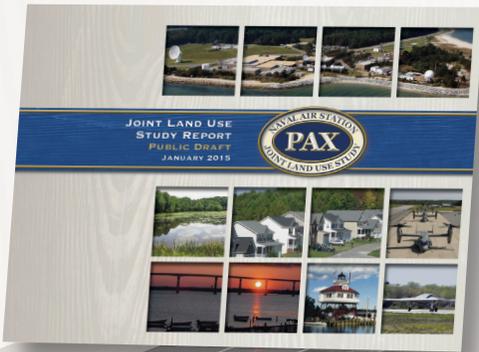
The Webster Field BASH MCA extends out from Webster Field's primary surfaces (runways) a distance of five statute miles. This MCA is meant to include areas around the airfield with the highest safety concerns if concentrations of birds or bird-attractions uses were located there. Bird strikes with aircraft can have serious safety concerns, including the potential for loss of life and / or aircraft. Even minor bird strikes can cause costly repairs to aircraft and interfere with training missions.

WEBSTER FIELD

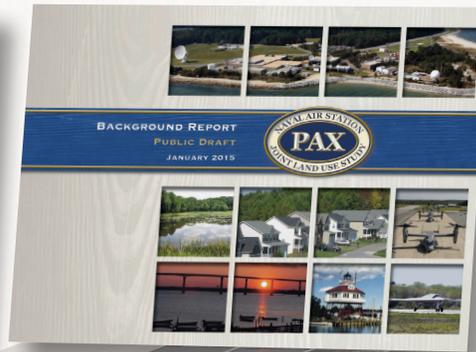


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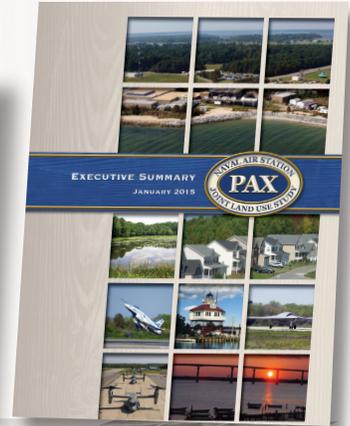
- | | | | | |
|--|--|---|--|--|
|  BASH MCA |  Noise MCA | Safety Zones |  Installation |  Water Body |
|  Safety MCA |  Vertical Obstruction MCA |  CZ |  Runway |  Highway |
| | |  County Boundary |  Road |  |
| | | | | 0 0.5 1 Miles |



JLUS Report



JLUS Background Report



JLUS Executive Summary Brochure

JLUS RESOURCES

Several JLUS resources providing different levels of information are available to the public, elected and appointed officials, and the military. These resources provide an overview of the JLUS process, detailed information on NAS PAX and the overall study area, an assessment of existing compatibility issues, and the recommended implementation plan. The resource documents include:

JLUS Report

The JLUS Report presents an overview of the JLUS planning process, purpose and objectives of the study and the recommended implementation plan. The report presents a concise description of the following:

- JLUS project study area, including NAS PAX mission overviews;
- Demographic s and market trends for Calvert, Caroline, Charles, Dorchester, Northumberland, St. Mary’s, Somerset, Talbot, Westmoreland, and Wicomico Counties; the cities of Cambridge and Crisfield; and the Town of Leonardtown
- Summary of the factors and encroachment issues identified during the JLUS process; and
- Set of recommended strategies to mitigate or prevent encroachment and proactively achieve land use compatibility.

JLUS Background Report

The NAS PAX JLUS Background Report provides the technical background and detailed compatibility assessment that was used to identify issues and develop JLUS recommendations.

JLUS Executive Summary Brochure

The JLUS Executive Summary Brochure serves as a quick reference describing the purpose of a JLUS and providing an overview of the key JLUS recommendations and Military Compatibility Areas.



FOR ADDITIONAL INFORMATION CONTACT:

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OEA Disclaimer

This study was prepared under contract with the Tri-County Council for Southern Maryland, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the key JLUS partners involved in the development of this study and does not necessarily reflect the views of the Office of Economic Adjustment.