

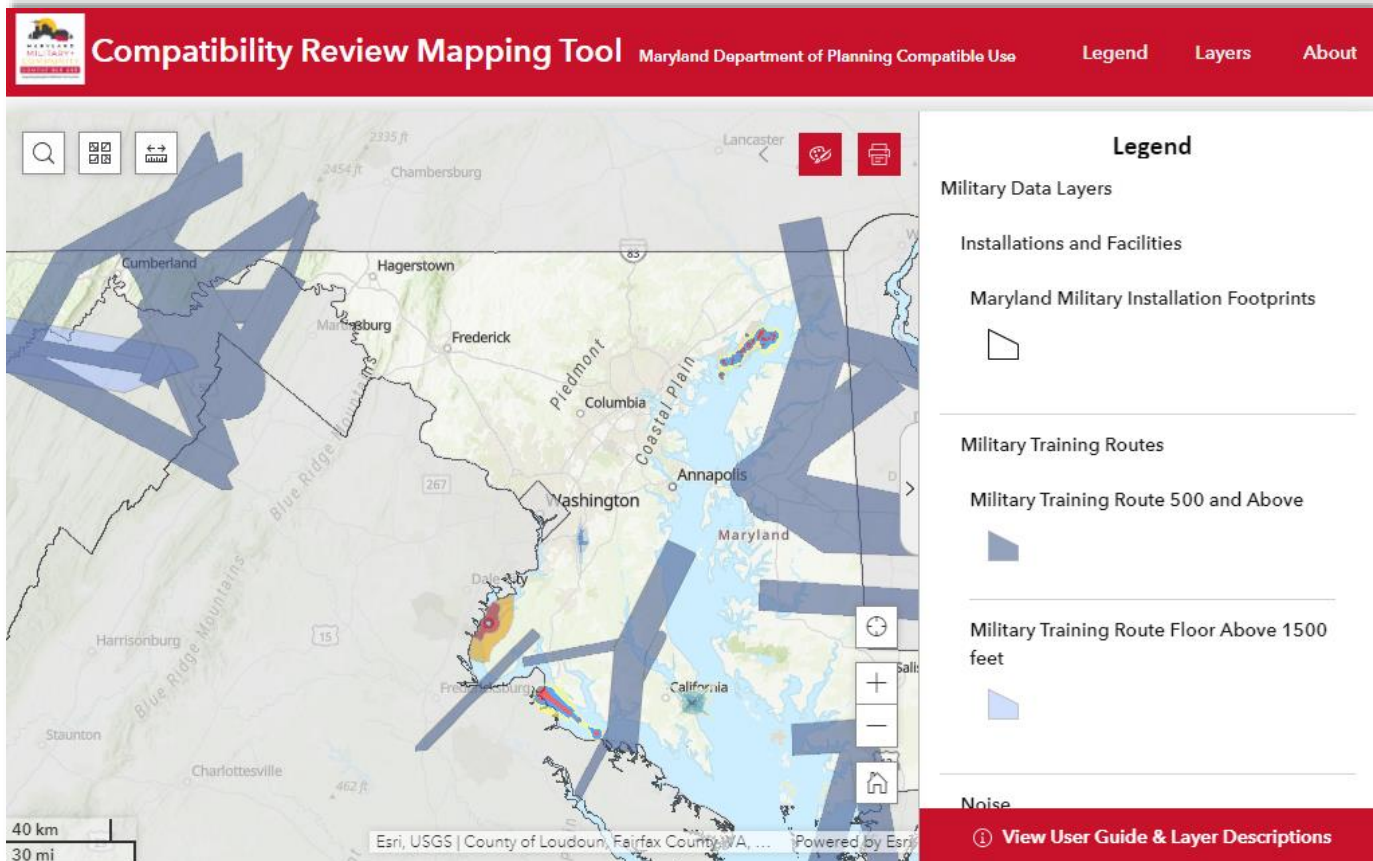
User Guide and Layer Descriptions

Compatibility Review Mapping Tool

Maryland Department of Planning
Compatible Use Website &
Handbook

Introduction

The Compatibility Review Mapping Tool is designed to provide military and other federal, state, and local stakeholders with spatial information to help further compatible use and development within their communities. The tool compiles a variety of GIS layers related to military operational areas and state and local programs to aid the user in understanding the proximity of military activities to communities and identify potential opportunities for increased communication and collaboration. When possible, contact information for the appropriate agency or office has been identified and included to facilitate coordination efforts.



How to use the Compatibility Review Mapping Tool

The Compatibility Review Mapping Tool starts with an initial map view, where the user can search for or identify their community. Once identifying an area of interest, the user can toggle through a variety of military data layers and begin to overlay an assortment of data that illustrates growth and incentive areas, infrastructure and land use considerations, and resilience and conservation components across Maryland.

Using the print icon, located in the upper right-hand corner of the map frame, users can generate a PDF for download. The popup menu allows the user to define features such as document size and map title. Using features found in the “Advanced” drop down menu, users can define map scale and extent, choose to include a legend, or set the print quality.

Map tool users are encouraged to explore the “About” tab located in the top right-hand corner of the tool to learn more and connect to other useful links, including the Maryland Department of Planning’s (MDP) [Compatible Use Website](#), the [Statewide Compatible Energy Siting Study](#), and additional technical assistance from the Department of Defense.

Using the Compatibility Review Mapping Tool Guide

An overview of each layer, information pertaining to how jurisdictions can use the data in their own compatible land use planning practices, and source information is contained below. To jump to a particular section or data layer, click on the corresponding section in the table of contents found on page 3. Adobe Acrobat users may also open the document outline or bookmark functionality of the program to access a scrolling table of contents.

Users interested in additional information concerning compatible use should consult the best practices and resources on the [Maryland Department of Planning's Compatible Use website](#).

DISCLAIMER: The military and statewide data layers contained in this mapping tool are intended to provide geographic information to assist state agencies, defense communities, military installations, and other interested parties in undertaking effective compatible use land planning practices and understanding the relationship between Maryland's military facilities and surrounding communities. This information and other key points of contact are provided to facilitate early communication and coordination between local, regional, state, and federal stakeholders and military installations within Maryland.

The military and statewide data layers are for preliminary information and coordination purposes only. They are not intended for project-specific analysis. Users are encouraged to coordinate with the appropriate stakeholder contacts and local communities when pursuing development projects around a military installation. The Maryland Department of Planning assumes no responsibility for the use, implementation, or derivation of information from the mapping tool.

Use of the military data in this tool does not constitute an informal or formal review by the Department of Defense (DoD) per Title 32 Code of Federal Regulations (CFR) Part 211, Mission Compatibility Evaluation Process or review through the Maryland Certificate of Public Convenience and Necessity (CPCN) process per Sections 7-207 and 7-208 of the Maryland Code.

The point of contact for this map tool is Sarah Diehl (sarah.diehl@maryland.gov), MDP's Southern Maryland Regional Planner.



Compatibility Review Mapping Tool Data Layer List

Click on a data layer to learn more.

Military Data Layers

Installations and Facilities

- Maryland Military Installation Footprints
- Maryland State Military Facilities
- Maryland Federal Military Facilities

Coordination

- Installation Coordination Buffers
- Military Influence Areas (JLUS) – Layers for Maryland & Virginia

Joint Land Use Studies (Compatible Use Studies)

- Joint Land Use Study Locations

Military Training Routes

- Military Training Routes: 500 feet and Above
- Military Training Routes: Floor Above 1,500 feet

Special Use Airspace

- Prohibited Area
- Restricted Area
- Atlantic Warning Area

Noise

- Aberdeen Proving Ground Noise Zones
- Aberdeen Proving Ground – Neutral Weather Conditions Noise Audibility
- Aberdeen Proving Ground – Unfavorable Weather Conditions Noise Audibility
- Joint Base Andrews Noise Intensity Zones
- NAS Patuxent River Noise Contours
- NSF Indian Head – Navy Noise Complaint Risk
- NSA South Potomac Noise Zones

Land Preservation Activities

- Middle Chesapeake Bay Sentinel Landscape
- Virginia Security Corridor Sentinel Landscape

Aberdeen Proving Ground: Army Compatible Use Buffer (ACUB) Program Encroachment Priority Areas

REPI Projects

Imaginary Surfaces

Imaginary Surfaces

Local Military Ordinances

Prince George's County Military Installation Overlay

St. Mary's County Air Installations Compatible Use Zone (AICUZ)

Safety

Joint Base Andrews Air Installation Compatible Use Zones

Aberdeen Proving Ground Air Installation Compatible Use Zones

NAS Patuxent River Air Installation Compatible Use Zones

Special Operations Areas

Potomac River Test Range

Helicopter Operations

Aerial Firing Weapons Separation Testing Area

Other Military Considerations

Aberdeen Proving Ground: Marine Restriction Area
Chesapeake Science and Security Corridor (CSSC)

Statewide Data Layers

Growth and Incentive Areas

- Base Realignment and Closure (BRAC) Zones
- Sustainable Communities
- Opportunity Zones
- Priority Funding Areas

Resilience and Conservation

- Rural Legacy Areas
- Maryland Environmental Trust Easements
- Private Conservation Lands
- DNR Owned Properties and Conservation Easements
- Forest Conservation Act Easements
- Green Infrastructure Hubs and Corridors
- Targeted Ecological Areas
- DNR Owned Properties and Conservation Easements
- Sea Level Rise Vulnerability

Infrastructure and Land Use

- Airports
- Community Anchor Institutions
- State Facilities
- Federal Facilities
- Municipal Boundaries
- Land Use Land Cover (2010)
- Maryland Road Centerlines – Maryland Routes
- U.S. Routes – Centerlines

Military Data Layers

Installations and Facilities

Use this series of layers to learn more about Maryland's federal and state military facilities located across the state. MDP recommends users to review these layers first to acquaint themselves with the geographic military footprint in their communities.

Maryland Military Installation Footprints

Source: [Defense Installations Spatial Data Infrastructure \(DISDI\) Program](#), Office of the Assistance Secretary of Defense for Sustainment

Layer Type: Polygon Layer

Overview of Layer: This layer contains boundaries of Department of Defense (DoD) sites: installations, ranges, training areas, etc. in Maryland. These boundaries are intended for planning purposes only and do not represent the legal or land-surveyed boundaries. Sites under 10 acres and valued at less than \$10 million are not included as stipulated by DoD standards. Last updated: Data available for prior fiscal year (FY). For example, FY 2018 data was available in calendar year 2019.

Potential Use in Compatibility Planning: Jurisdictions can use this information to familiarize themselves with the extent of an installation's boundary. Understanding an installation's fence line is important when considering development or conservation activities that may impact or be impacted by military operations.

Maryland State Military Facilities

Source: [Maryland Military Department](#)

Layer Type: Point Layer

Overview of Layer: The Maryland Military Department has identified military installations in Maryland. These installations are maintained by the Maryland National Guard (Guard). In addition, these installations are used in major emergency response and support of federal missions as directed by the President of the United States.

Potential Use in Compatibility Planning: Jurisdictions should be aware of and work with the National Guard facilities to promote and benefit from the Guard's array of community programs. The Guard offers family readiness programs, family assistance centers, youth programs, and other community programming in support of continued communication and collaboration between the Guard and the defense community.

Maryland Federal Military Facilities

Source: [Maryland Department of Information Technology](#)

Layer Type: Point Layer

Overview of Layer: This layer contains locations of federal military facilities located in Maryland. Locations identified as part of this dataset consist of active and reserve military components, including bases, stations, yards, annexes, and armories.

Potential Use in Compatibility Planning: Jurisdictions can use this information to familiarize themselves with the federal military installations in their communities. These facilities offer jobs for military and civilian personnel living in and around the installation and offer opportunities for public/private partnerships which benefit the state. Understanding the location of these facilities is crucial in promoting compatible use and development, particularly as a defense community plans to grow.

Coordination

Communication and coordination between military and stakeholder groups is crucial to successful compatible land use planning because it increases a mutual understanding of concerns, priorities, and planning processes. Without adequate and timely input from each party, it is difficult to assess the impacts of development, growth management, and land/air/resource use decisions on either side of the fence.

Maryland's Compatible Energy Siting Project and the Joint Land Use Study identified these geospatially illustrated coordination areas. Within these areas, coordination between the military and community is suggested to ensure compatibility with military operations and community growth. Read more about the importance of communication and coordination in the [Outreach and Communication for Planning Coordination](#) section of the compatible use website.

Installation Coordination Buffers

Source: Matrix Design Group

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates the installation coordination areas developed as part of the Department of Commerce's [Compatible Energy Siting Project](#). Installation Coordination Areas include the land surrounding the installation and facilities where certain types of development and activities have the potential to adversely impact military operations.

Potential Use in Compatibility Planning: Installation Coordination Areas were established in consultation with each of the state's military installations to address their compatibility concerns of specific missions and operations. As these areas are not excluded from development, communities and installations in the vicinity should coordinate future development with the military to ensure compatibility with military operations and to address any necessary mitigation measures. When possible, contact information for the installation's Public Affairs Office is included for coordination.

Military Influence Areas (JLUS) – Layers for Maryland & Virginia

Source: Matrix Design Group

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates the military influence areas (MIA) for the five installations in Maryland and installations in eastern Virginia that have completed a joint land use study. In Maryland, this includes Aberdeen Proving Ground, Joint Base Andrews, NSF Indian Head, Blossom Point, and NAS Patuxent River. In Virginia, installations include Marine Corps Base Quantico, NAS Oceana, Naval Station Norfolk, Joint Base Langley-Eustis Air Force Base, and NSF Dahlgren. A military influence area is defined as "a geographic planning or regulatory area where military operations impact local communities and conversely, where local activities may affect the military mission."¹ An MIA can vary in size and scope; for instance, an installation with a flying mission will have a much larger and regional MIA due to the airspace that is used for operations and training. MIAs are not confined by jurisdictional boundaries and can extend into other states.

Potential Use in Compatibility Planning: Military, local, and community planners should use knowledge of the installation's military influence area to implement successful compatibility planning strategies. As a tool to maintain operational capability and promote awareness of military activities to surrounding communities, it is important for planners to understand the influence that an installation may have beyond the fence line and strive to communicate and coordinate with other planners in the MIA regarding community and military compatibility planning. The MIA can also be used to establish planning areas, zoning regulations, or other restrictions on certain uses or types of development requirements.

An installation's MIA includes the installation-support military missions, the specific military operations and training activities conducted at and around the installation, and natural and/or environmental preservation surrounding the installation area. For more information on the MIA and mission footprint, refer to [Section 1.5 in the Statewide Joint Land Use Response Implementation Strategy](#).

¹ Military Influence Area/Mission Footprint: [Statewide Joint Land Use Response Implementation Strategy](#) (2019).

Joint Land Use Studies (Compatible Use Studies)

Use this layer to learn where Compatible Use Studies have been completed across the state. For more information on how jurisdictions can develop their own Compatible Use Study, refer to the [Compatible Use Study: Planning Process Guide](#). Note: Compatible Use Studies were once referred to as Joint Land Use Studies (JLUS) by the Office of Local Defense Community Cooperation (OLDCC).

Joint Land Use Study Locations

Source: Maryland Department of Planning

Layer Type: Point Layer

Overview of Layer: This layer identifies Maryland installations that have conducted a Compatible Use Study (originally called a Joint Land Use Study).

Potential Use in Compatibility Planning: Compatible Use Studies promote community development that is supportive of and compatible with military training, testing, and operational missions, seek ways to reduce impacts of the installations on the adjacent community, increase public awareness of the military mission and contribution to the regional economy, and protect and preserve military readiness while supporting simultaneous economic development in the community. Jurisdictions that have completed a Compatible Use Study should strive to implement the suggested recommendations and strategies in support of enhanced communication, coordination, and compatible development.

Military Training Routes

Military Training Routes (MTR) are pre-determined corridors of airspace with defined vertical and lateral dimensions used for military flight training, which often consists of low-altitude and high-speed tactical training exercises. MTRs are established as a joint venture of the [Federal Aviation Administration](#) (FAA) and [Department of Defense](#) (DoD). For the purposes of this mapping tool, MTRs are displayed based on the minimum altitude (or how low an aircraft can fly) at which each route operates. Within the layer's data table, find more information about the specific type of route segments, which are described below. It is important to note that some MTRs controlled by military installations in Maryland extend outside of the state and some MTRs within Maryland are controlled by military installations outside of the state. MTRs can be used by any branch of the U.S. Armed Forces.

Types of military training routes:²

- **Instrument Route (IR):** Aircraft operations conducted in accordance with Instrument Flight Rules at a maximum ceiling (altitude) of 1,000 feet Above Ground Level (AGL), and/or with visibility less than 3 miles.
- **Visual Route (VR):** Aircraft operations conducted in accordance with Visual Flight Rules where visibility must be ≥ 5 statute miles and with flight occurring above 3,000 feet AGL.
- **Slow Route (SR):** Operations conducted at speeds less than 250 knots and altitudes as low as 250 feet AGL.

Military Training Routes: 500 feet and Above

Source: [Military Aviation and Installation Assurance Siting Clearinghouse](#)

Layer Type: Polygon Layer

Overview of Layer: This dataset depicts the extents of Slow Routes and Visual Routes. Check each route selection to determine the route type and minimum/maximum altitudes.

Potential Use in Compatibility Planning: Military training routes in this category can be considered low-level military airspace, depending on the altitude flown. Low-level airspace can be particularly susceptible to impacts from tall structures. Project developers considering construction of a wind energy project or other tall structure are strongly encouraged to consult the Military Aviation and Installation Assurance Siting Clearinghouse informal review process to analyze potential impacts to the Department of Defense. Awareness of MTR locations is not only important for

² Maryland Military Assets and Considerations for Renewable Energy Development Report

development purposes but could also be of interest to homeowners or community members who might be impacted by flyover noises. Additionally, integration of MTRs in local development regulations could be a best practice that preserves flight safety and provides clarity for planning or development projects.

Military Training Routes: Floor Above 1,500 feet

Source: [Military Aviation and Installation Assurance Siting Clearinghouse](#)

Layer Type: Polygon Layer

Overview of Layer: This dataset depicts the extents of Instrument Routes, which are routes developed for flight under Instrument Flight Rules. Check each route selection for more information on minimum/maximum altitudes.

Potential Use in Compatibility Planning: Awareness of these high-altitude MTR locations is not only important for development purposes but could also be of interest to homeowners or community members who might be impacted by fly over noises.

Special Use Airspace

Special Use Airspace (SUA) represents locations where activities must be confined due to their nature, where limitations are imposed upon aircraft operations that are not included in those activities, or both. Designation as SUA alerts nonparticipating civilian or military aircraft to the possible presence of these aviation activities. It is important for the aviation community to be aware of these areas, as entering an SUA without authorization from the controlling agency can be extremely hazardous.

Prohibited Area

Source: [Military Aviation and Installation Assurance Siting Clearinghouse](#)

Layer Type: Polygon Layer

Overview of Layer: A prohibited area is airspace designated for hazardous military activities, such as live weapons training. All aircraft not associated with these activities are restricted from entry.

Potential Use in Compatibility Planning: It is imperative that the aviation community is aware of these areas, as access is prohibited typically due to security reasons. As illustrated on the map, there are two prohibited areas within Maryland – P40 in Thurmont (over Camp David in Frederick County) and P73 Mount Vernon, VA, which extends over the Potomac River in southern Maryland.

Restricted Area

Source: [Military Aviation and Installation Assurance Siting Clearinghouse](#)

Layer Type: Polygon Layer

Overview of Layer: A restricted area is airspace where the operation of aircraft is subject to restriction. These areas are established to separate (often invisible) activities considered to be hazardous to other aircraft, such as artillery firing, aerial gunnery, or guided missiles.

Potential Use in Compatibility Planning: Entry into these areas without prior authorization from the controlling agency can be extremely hazardous to the aircraft and occupants. More information on each of the restricted areas in Maryland can be found in the layer's data table.

Atlantic Warning Area

Source: [Naval Air Station Patuxent River](#)

Layer Type: Polygon Layer

Overview of Layer: Warning areas generally begin three miles offshore and contain the same kind of hazardous flight activities as restricted areas but have a different name since they are located over domestic and international waters. The Atlantic Warning Area covers over 35,000 square miles across the Atlantic Ocean, including both the air and sea space. This vast area supports a wide variety of DoD training requirements, as well as other research, development, testing, and evaluation, including munitions deployment and flight-testing.

Potential Use in Compatibility Planning: Awareness of offshore military operational areas such as the Atlantic Warning Area is important when considering offshore renewable energy development. Although most of these operational areas lie within federally controlled waters (begins three miles off the coast) and are subject to federal regulations and permitting processes under the authority of the [Bureau of Ocean Energy Management \(BOEM\)](#), a small portion of these areas extends approximately one mile into Maryland territorial waters.

Noise

The impacts and illustrations of noise at Maryland’s military installations are represented in different ways for the purposes of this mapping tool based on the information received from county and installation data sources. Each layer below provides information on the type of data and how it can be used in support of military-community compatibility.

To help increase general understanding, a few key terms are defined below:

General Terms

- **Decibel (dB):** a unit of measurement used to describe the intensity or loudness of sound.
- **Day-Night Average Sound Levels (DNL):** noise metric used to reflect a person’s cumulative exposure to sound over a 24-hour period, expressed as the noise level for the average day of the year based on annual aircraft operations.³
- **Noise Contour:** connecting points of equal noise exposure, typically expressed in five dBA increments (i.e., 60, 65, 70, etc.).
- **Noise Zones:** any area of land or water that lies between two noise contour lines, further broken down into the following categories:
 - Zone I: less than 65 dB DNL; considered an area of low or no noise impact. This zone is considered to have minimal noise exposure but may have a noise nuisance to certain types of land uses and activities.⁴
 - Zone II: DNL is between 65 dB and 75 dB; considered an area of moderate impact and is normally unacceptable for noise-sensitive land uses. Some land use controls are typically required within this zone.⁵
 - Zone III: noise levels greater than 75 dB; considered an area of severe noise exposure and is deemed unacceptable for noise sensitive land uses, requiring the greatest degree of land-use control.⁶
 - Land Use Planning Zone (LUPZ): a subdivision of Zone I; DNL is between 60 dB and 65 dB. Within this area, noise sensitive land uses are generally acceptable. Some communities may choose to implement land use planning measures in a LUPZ, which can develop a buffer to avert the possibility of future noise conflicts.⁷
- **Peak Level:** a single-event sound level without weighting.

Refer to the Department of Defense’s [Community and Environmental Noise: A Guide for Military Installations and Communities](#) primer to learn more about military noise and the basic noise management activities that the DoD uses to engage and inform the public.

Potential Use of Noise Data in Compatibility Planning

Military installation impacts on a community span beyond its geographic footprint. Noise generated by military operations and the long-term exposure on surrounding communities are two of the most persistent and costly

³ Fundamentals of Noise and Sound. [Federal Aviation Administration](#).

⁴ Aircraft Noise Contours. [Naval Air Station Patuxent River Joint Land Use Study Background Report \(2015\)](#).

⁵ Ibid.

⁶ Ibid.

⁷ [A Citizen’s Guide to Noise Management](#). Aberdeen Proving Ground (2016).

encroachment challenges for the DoD. Noise contours help a community and the military understand how changes in community development and military operations can impact exposure to noise.

The DoD conducts noise studies to assess a community's exposure to installation and range noise from current and future activities. These studies typically produce maps that depict noise exposure levels or noise zones (described above) that align with a common set of land use compatibility guidelines adopted by federal, state, and local governments. As part of these studies, land uses for surrounding areas are recommended based on current and future military activities.

Sharing noise contours is one of the types of information sharing strategies that the DoD uses to engage and inform the public. Communities can use this information to inform their own planning practices and make decisions for compatible land use in the areas surrounding military installations and ranges. The military incorporates results of noise studies into other compatible land use planning efforts such as OLDCC's [Installation Resilience program](#), the [Air Installations Compatible Use Zones \(AICUZ\) program](#), and the Navy Range Air Installations Compatible Use Zones (RAICUZ) program. Noise study results are also used to identify potential [Readiness and Environmental Protection Integration \(REPI\)](#) projects and support funding decisions related to encroachment prevention around installations and ranges. It is important to note that the noise contours and zones depicted on the compatibility review mapping tool are intended as a planning tool and do not represent a clear change in noise threshold at each contour or zone change. Changes in noise levels can vary with humidity, temperature, wind, and other environmental factors.

Effective communication, education, and cooperation are key activities that the DoD and defense communities should continue to engage in to help support quality of life while managing noise exposure and protecting the installation's mission. An installation's community involvement strategy influenced by stakeholder input helps build lasting relationships and provides information the military can use to influence training activities to minimize noise impacts.

Learn more about the types of installation-provided noise data provided below.

Aberdeen Proving Ground Noise Zones

Source: Aberdeen Proving Ground

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates the three medium/large caliber noise zone categories that are associated with testing activity at APG between FY13-FY15: Zone II, Zone III, and the LUPZ (Land Use Planning Zone). Large arms include weapons 20mm or greater and weapons that include explosive charges. Testing of this nature is conducted on a routine basis at APG with a multitude of weapons and explosive charges. As illustrated, all medium/large caliber noise zones remain with APG boundaries or extend into surrounding bodies of water.

Potential Use in Compatibility Planning: According to Army guidelines, the noise from demolition and medium/large arms weapons operations at APG is currently compatible with the surrounding community.⁸ The reduction of large caliber (artillery/tank) testing and explosive activity at APG over the recent years has led to smaller noise zones than years prior. However, the surrounding community should keep mission changes in mind that could lead to an expansion of noise contours. Additionally, APG conducts testing with small arms (weapons of .50 caliber or less) and vehicles at various locations across the installation in which noise zones expand into the surrounding community. This data was not available for this study. Refer to [A Citizen's Guide to Noise Management](#) to learn more. This guide was produced by APG with the intention of helping installation neighbors better understand the noise impacts from the installation and encourage ways to work together to share information to better manage impacts in that way also ensures military readiness.

⁸ [A Citizen's Guide to Noise Management](#). Aberdeen Proving Ground (2016).

Aberdeen Proving Ground – Neutral Weather Conditions Noise Audibility

Source: Aberdeen Proving Ground

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates where, under neutral weather conditions, noise from demolition activity, medium, and large caliber weapons may be noticeable or very loud. The Army uses Peak level (unweighted) assessments to forecast where sound may focus under different weather conditions.

Potential Use in Compatibility Planning: Communities can use this information to help understand why they still may hear installation activities even though they are not directly adjacent to APG. Neutral or favorable weather conditions do not carry sound the way unfavorable weather conditions can.

Aberdeen Proving Ground – Unfavorable Weather Conditions Noise Audibility

Source: Aberdeen Proving Ground

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates where under unfavorable weather conditions, noise from demolition activity, medium, and large caliber weapons may be noticeable or very loud and objectionable. The Army uses Peak level (unweighted) assessments to forecast where sound may focus under adverse weather conditions.

Potential Use in Compatibility Planning: Communities can use this information to help understand why they still may hear installation activities even though they are not directly adjacent to APG. Unfavorable weather conditions enhance sound propagation and therefore lead to sound traveling much further than it would during neutral conditions.

Joint Base Andrews Noise Intensity Zones

Source: Prince George’s County Planning Department

Layer Type: Polygon Layer

Overview of Layer: This layer was created based on the digitized noise contours found in the 2007 Air Installation Compatible Use Zone (AICUZ) Study for Joint Base Andrews Naval Air Facility Washington. Information from the study was used to identify the noise impacts associated with development proposed in the vicinity of Joint Base Andrews Naval Air Facility Washington. On November 15, 2016, the Prince George’s County District Council approved the **Military Installation Overlay Zone** (CR-97-2016), which created the Noise Intensity Zone and High Noise Intensity Zone. The two zones were based on the AICUZ noise contours.

- **Noise Intensity Zone:** contains the areas affected by noise in the 60 dB to 74 dB range in the area surrounding Joint Base Andrews.
- **High Noise Intensity Zone:** contains the areas effected by noise 75 dB or higher surrounding Joint Base Andrews.

NAS Patuxent River Noise Contours

Source: St. Mary’s County Geographic Information Systems

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates the aircraft noise contours for aircraft operations at NAS Patuxent River and Webster Field. Noise contours were developed using the NAS Pax Air Installation Compatible Use Zone (AICUZ) Study (2009) and the Webster Field AICUZ Study (2006).

Potential Use in Compatibility Planning: Flight operations at NAS Pax and Webster Field are conducted by rotary-wing (helicopter), fixed-wing, tilt-rotor, and unmanned aerial system (UAS) aircraft and can impact the surrounding communities. While noise is heard outside of these contours, this layer was developed to provide the general location of average noise levels. In addition to noise contours, the AICUZ studies provide compatibility guidelines for the surrounding areas to use to determine what types of land uses and development are compatible within each noise contour; for example, noise sensitive uses such as residential, schools, and churches are not recommended within the loudest noise contours. Additionally, the St. Mary’s County Comprehensive Zoning Ordinance contains an **AICUZ Overlay district** that includes a prescriptive set of compatible land uses within zoning districts and noise contours. Users are encouraged to consult the zoning ordinance and **NAS Pax River Joint Land Use Study: Background Report** to learn more about noise considerations as it pertains to compatible development around the military installation.

NSF Indian Head – Navy Noise Complaint Risk

Source: Charles County Planning and Growth Management

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates areas of noise complaint risk identified in the 2009 Operational Noise Consultation. The study identified areas of complaint risk and noise zones, as described below. Areas of noise complaint risk are intended to identify where loud but infrequent noise may occur due to individual testing events at the installation. These activities may generate complaints from the surrounding community during detonations when weather conditions favor sound propagation. The NSF Indian Head JLUS notes that beyond the following areas, the risk of complaint is considered low, and incompatibility is minimal.

- **Moderate Risk of Complaint** (peaks from 115 to 130 dB): areas should be carefully considered during land use planning. The Town of Indian Head is encompassed within this area and peak noises can be comparable to noises expected at a rock concert.
- **High Risk of Complaint Area** (peaks > 130 dB): noise sensitive land uses in this area should be minimized. This area extends around the Stump Neck Annex and is most at risk for compatibility issues. It is also recommended that these areas not be zoned to allow high-density residential land use to further protect the sustainability of the mission.

NSA South Potomac Noise Zones

Source: Naval District Washington

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates noise contours that were identified in the 2009 Operational Noise Consultation for NSF Indian Head and NSF Dahlgren (VA) – the two components that make up Naval Support Activity South Potomac. Information from NSF Dahlgren was included in this mapping tool because of the potential for noise from military operations to travel over the Potomac River and into Southern Maryland.

Potential Use in Compatibility Planning: Communities can use this information to help understand why they still may hear installation activities even though they are not directly adjacent to NSF Indian Head or NSF Dahlgren. Each contour category has a corresponding decibel range that influences planning and land use development characteristics. As noted in the 2016 Naval Support Facility Indian Head Joint Land Use Study, NSF Indian Head uses the Sound Intensity Prediction System to assess atmospheric conditions and predict the likelihood of excessive noise. If noise is predicted to be too loud, testing is postponed until conditions are more favorable.⁹ Use this layer in conjunction with the Navy Noise Complaint Risk to learn more about the areas that have the highest and lowest chances for of noise disruption.

Land Preservation Activities

The federal government utilizes several programs to combat encroachment while supporting land preservation and conservation activities. Learn more about the preservation of land around military installations in Maryland through the REPI and Sentinel Landscape programs.

Middle Chesapeake Bay Sentinel Landscape

Source: Maryland Department of Planning/Sentinel Landscape Program

Layer Type: Polygon Layer

Overview of Layer: This layer depicts the boundary of the **Middle Chesapeake Sentinel Landscape**. The Middle Chesapeake Sentinel Landscape is one of twelve **Sentinel Landscapes** across the country (as of FY23). Sentinel Landscapes are areas in which natural and working lands are well suited to protect defense facilities from land use that is incompatible with the military's mission. Sentinel Landscape designation connects private landowners with voluntary state and federal assistance programs that offer loans, educational opportunities, financial and technical assistance, and funding for conservation easements.

⁹ Naval Support Facility Indian Head Joint Land Use Study (2016).

Potential Use in Compatibility Planning: The Middle Chesapeake Sentinel Landscape spans across a large portion of Southern Maryland and the eastern shore. The Middle Chesapeake Sentinel Landscape is anchored by Naval Air Station Patuxent River and encompasses the historically significant Nanticoke River. Jurisdictions in these areas should be aware of the actions that Sentinel Landscape partners have taken to maintain working lands, undertake conservation practices that benefit wildlife, and continue land use practices that are compatible with the military mission. Landowners in areas designated as a Sentinel Landscape are eligible to work with partners to advance sustainable land management practices through a variety of assistance programs, such as tax reductions, agricultural loans, disaster relief, technical aid, and conservation funding.

Virginia Security Corridor Sentinel Landscape

Source: Maryland Department of Planning/Sentinel Landscape Program

Layer Type: Polygon Layer

Overview of Layer: This layer depicts the boundary of the **Virginia Security Corridor Sentinel Landscape**. The Virginia Security Corridor is comprised of two sentinel landscapes: Potomac and Tidewater. The Virginia Security Corridor Sentinel Landscape is one of twelve **Sentinel Landscapes** across the country (as of FY23). Sentinel Landscapes are areas in which natural and working lands are well suited to protect defense facilities from land use that is incompatible with the military's mission. Sentinel Landscape designation connects private landowners with voluntary state and federal assistance programs that offer loans, educational opportunities, financial and technical assistance, and funding for conservation easements.

Potential Use in Compatibility Planning: The Virginia Security Corridor Sentinel Landscape spans over 2.9 million acres of land and water in Virginia's "Golden Crescent," an area of high military concentration, urban sprawl, population growth, and a growing technology industry. Jurisdictions in these areas should be aware of the actions that Sentinel Landscape partners have taken to maintain working lands, undertake conservation practices that benefit wildlife, and continue land use practices that are compatible with the military mission. Landowners in areas designated as a Sentinel Landscape are eligible to work with partners to advance sustainable land management practices through a variety of assistance programs, such as tax reductions, agricultural loans, disaster relief, technical aid, and conservation funding.

Aberdeen Proving Ground: Army Compatible Use Buffer (ACUB) Program Encroachment Priority Areas

Source: Aberdeen Proving Ground

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates prioritized targeted easements identified by the APG ACUB program for limiting development to address mission, encroachment, and wildlife habitat related concerns. The **ACUB Program** allows installations to work with community partners and landowners to identify off-post lands to be used as buffers and habitat protection. Through the ACUB program, the Army does not acquire new lands for ownership or gain additional testing space; any lands or conservation easements acquired are vested and held by the ACUB partner. APG has prioritized these lands based on their relation to noise zones, proximity to the installation, existing wildlife habitat, and degree in which the area has already been preserved or developed.

Potential Use in Compatibility Planning: The ACUB program gives the Army greater training flexibility while providing numerous benefits for community partners and landowners. For installations, these easements provide a way to manage development adjacent to and near the fence line, protect testing space, help to avoid operation restrictions, and mitigate potential noise complaints. For community partners, ACUB easements help protect the installation's mission while not removing lands from the tax base and maintain agricultural lands. Finally, landowners benefit by retaining rights to ownership and management of land while receiving cash in hand.

REPI Projects

Source: Maryland Department of Planning

Layer Type: Point Layer

Overview of Layer: This layer depicts locations of all **Readiness and Environmental Protection Integration** (REPI) projects in the state. The REPI program protects military readiness by preventing incompatible development along the installation's borders and protects sensitive environmental natural resources. Find more information about each project in the linked fact sheets.

Potential Use in Compatibility Planning: The REPI Program is a key tool for combating encroachment. REPI projects are the result of an array of partnerships between the Military Services, private conservation groups, and state and local governments. Interested jurisdictions are encouraged to use lessons learned from these projects in advancement of their own REPI projects.

Imaginary Surfaces

Imaginary Surfaces

Source: Department of Defense, Matrix Design Group

Layer Type: Polygon Layer

Overview of Layer: **Title 14 CFR § 77.21** establishes imaginary surfaces surrounding military installations or heliports. Section 77.19 established imaginary surfaces for civilian airfields, such as Martin State Airport where the Maryland Air National Guard operates. These areas must be kept clear of objects that might pose a safety threat to aviation activities. Imaginary surfaces build upon one another and are designed to eliminate obstructions to air navigation and operations, both natural and man-made. The size of an imaginary surface is based on the category of each runway according to the type of instrument approach available or planned for that runway. Imaginary surfaces that relate specifically to runways include the primary surface, clear zone surface, approach clearance surface, and transitional surface. Other imaginary surfaces include the inner horizontal surface, conical surface, and outer horizontal surface. Refer to **14 CFR 77.21** of the Code of Federal Regulations for a detailed explanation of the different types of imaginary surfaces.

Potential Use in Compatibility Planning: Imaginary surfaces protect the airspace around military installations and landing areas from obstructions and play a role in determining future land use and development in the surrounding area. It is important for local governments to be aware of these areas to minimize incompatible land uses, foster awareness of potential issues, and support recommendations to mitigate existing incompatibilities and limit the development of new ones.

Local Military Ordinances

The Department of Defense established the Air Installations Compatible Use Zones (AICUZ) program to balance the need for aircraft operations and community concerns. An AICUZ Study provides guidelines that define zones of high noise and accident potential and provides recommended land uses that are compatible within these zones. Defense communities can promote compatible land use planning practices by using AICUZ findings to influence local legislation.

Land development regulations established through local ordinances are an important tool for ensuring compatibility of local communities with the operation of nearby military installations. Two counties in Maryland, Prince George's County and St. Mary's County, have codified ordinances that provides use restrictions, development regulations, and permitting requirements in the vicinity of their military installations. Visit the **Guide to Local Ordinance Development** on the compatible use website for more information on how to develop local ordinances in support of military compatibility.

Potential Use in Compatibility Planning: The AICUZ program promotes public health and safety through the local adoption of compatible land use controls and protects the operational capability of the air installation.¹⁰ Noise zones and accident potential zones developed as part of an AICUZ Study are valuable planning tools for local governments

¹⁰ **AICUZ Program Frequently Asked Questions.** Air Force Civil Engineer Center.

because they can help guide and encourage compatible growth, development, and land use in a community in a way that does not affect the defense mission. The AICUZ is only advisory, and it is up to the local government to control development beyond installation boundaries; however, as demonstrated in the two examples below, local governments have introduced overlays into their zoning codes as a mutually beneficial opportunity to achieve compatible development.

Prince George's County Military Installation Overlay

Source: Prince George's County

Layer Type: Polygon Layer

Link to Additional Information

Overview of Layer: Prince George's County Military Installation Overlay (MIO) Zone Map Amendment was adopted on November 15, 2016 with [CR-97-2016](#). This overlay regulates land use and development in three overlapping geographic areas based on the 2017 AICUZ imaginary surfaces associated with safe air navigation, noise contours, and accident potential and clear zones. There are three layers, described below, that make up the MIO on the compatibility review mapping tool: height, noise, and safety overlays. Read more on the background and adoption process for the MIO in the [Prince George's County Military Installation Overlay Zone case study](#), developed by MDP.

Sublayers:

Military Installation Overlay – Height: The MIO designated five areas of the AICUZ Runway Airspace Imaginary Surfaces as the MIO Height Limit Areas: A - Primary Surface for both runways; B - Approach/Departure Clearance (50:1) north and south ends; D - Inner Horizontal Surface for both runways; E - Conical Surface (20:1) for both runways; G - Transitional Surface (7:1) for both runways. The definition/description of Runway Airspace Imaginary Surfaces is from the Air Installation Compatible Use Zone Study, Andrews Air Force Base, Maryland, December 2007, p.4-1 to 4-4. Runway airspace imaginary surfaces, in graphical form, are the result of the application of obstruction height criteria to Andrews AFB. Imaginary surfaces constitute space around airfields in relation to runways. The surfaces are designed to define the obstacle-free airspace at and around the airfield. Refer to [Unified Facilities Criteria \(UFC\) 3-260-01, Airfield and Heliport Planning and Design](#) for a more complete description of runway airspace imaginary surfaces for Class B runways.

Military Installation Overlay – Noise: This layer was based on the digitized noise contours as found in the 2007 (rather than 2017) Air Installation Compatible Use Zone (AICUZ) Study for Joint Base Andrews. The associated attributes were entered, and the zones used to identify the noise impacts associated with development proposed in the vicinity of Joint Base Andrews Naval Air Facility Washington. The MIO created the Noise Intensity Zone and High Noise Intensity Zone, based on the AICUZ noise contours. The Noise Intensity Zone contains the areas effected by noise in the 60 dB to 74 dB range. The High Noise Intensity Zone contains the areas effected by noise 75 dB or higher surrounding Joint Base Andrews.

Military Installation Overlay – Safety: This layer was created based on a description of the accident potential zone in the 1993 Air Installation Compatible Use Zone (AICUZ) Study for Joint Base Andrews. The boundaries of each zone were entered using ARC/INFO COGO. The associated attributes were added, and the zones used to identify the potential for accidents as a guide for the intensity of development permitted based on the AICUZ Study. The geographies for the accident potential zones did not change when the MIO Zone was approved in 2016.

St. Mary's County Air Installations Compatible Use Zone (AICUZ)

Source: St. Mary's County

Layer Type: Polygon Layer

Link to Ordinance

Overview of Layer: St. Mary's County Comprehensive Zoning Ordinance recognizes a Clear Zone, Accident Potential Zone 1 (APZ-1), and Accident Potential Zone 2 (APZ-2), described below, around airport environs (AE) as well as noise level contour lines. The 2009 NAS Patuxent River AICUZ study established these aircraft safety zones for the installation's runways, based on historical data of aircraft collisions, geography, and runway information.

Per [Section 43.1.2 of the St. Mary's County Comprehensive Zoning Ordinance](#), the above sub-districts are defined as the following:

Clear Zone (CZ): Within the CZ, aircraft can be expected to operate at an altitude close to ground level, and therefore this area is the area of greatest aircraft accident potential and threat to human life and real property improvements.

Accident Potential Zone 1 (APZ 1): This is the glide zone, and area in which aircraft are transitioning to commit to touchdown or takeoff with high power settings in a descending or climbing attitude. It is an area of high concentration of air traffic and noise and represents the second greatest accident and risk potential.

Accident Potential Zone 2 (APZ 2): This is the rendezvous dispersion zone, the area over which aircraft are normally in a vulnerable flight attitude with variable power settings on landing and high-power settings on takeoff and represents the least potential for aircraft accidents and risks within the AICUZ.

Refer to the zoning code for a detailed description of zones and permitted uses within each category.

Safety

These sets of layers specifically illustrate safety information pertaining to airfield operations at Joint Base Andrews, Aberdeen Proving Ground, and NAS Patuxent River. As part of an installation's Air Installation Compatible Use Zones (AICUZ) Program, an installation identifies Accident Potential Zones (APZs) as areas where an aircraft accident is most likely to occur in the vicinity of airfields. It is important to note that APZs are not a prediction of accidents or accident frequency; the zones are developed based upon analysis of historical data and generally follow the extended runway centerline. More information on the AICUZ Program can be found in AICUZ guidebooks developed by the [Naval Facilities Engineering Command](#) or the [United States Air Force](#).

NOTE: The information displayed in these Joint Base Andrews and NAS Patuxent River layers is part of larger legislative actions taken by Prince George's and St. Mary's counties as noted in the Local Military Ordinances section above. Refer to the Local Military Ordinances section of the mapping tool to view the full ordinance.

Potential Use in Compatibility Planning

It is important for local governments to have an awareness of these zones, particularly in instances where they extend beyond the installation boundaries, to guide land use and development activities in a safe manner. An AICUZ Study provides recommended land uses that discourage incompatible land development adjacent to an air installation and promote development that is compatible with the mission. Generally, the AICUZ Program recommends that land uses that promote high concentrations of people be avoided in the APZs. The DoD's definitions of the three types of APZs illustrated on the mapping tool are as follows:

- **Clear Zone:** Extends beyond the runway and has the highest potential for accidents. Clear Zones are the areas with the greatest potential for the occurrence of aircraft accidents and should remain undeveloped.

- **APZ I:** Extends beyond the Clear Zone. Some land uses are compatible but may recommend density restrictions.
- **APZ II:** Extends beyond APZ I. More land uses are compatible within APZ II than APZ I but may recommend density restrictions.¹¹

Joint Base Andrews Air Installation Compatible Use Zones

Source: Prince George’s County

Layer Type: Polygon Layer

Link to Additional Information

Overview of Layer: This layer was created based on a description of the accident potential zone in the 1993 Air Installation Compatible Use Zone (AICUZ) Study for Joint Base Andrews (JBA). The associated attributes were added, and the zones used to identify the potential for accidents as a guide for the intensity of development permitted based on the AICUZ Study.¹² The applicable regulations for Safety may be found in [Section 27-4402\(c\) Overlay Zones of the Zoning Ordinance](#). These areas represent approximately 0.86 percent of the total land area of Prince George’s County outside of JBA.¹³

Aberdeen Proving Ground Air Installation Compatible Use Zones

Source: Aberdeen Proving Ground

Layer Type: Polygon Layer

Overview of Layer: Aberdeen Proving Ground (APG) is home to two airfields, Phillips Army Airfield (PAAF) and Weide Army Heliport (WAH). PAAF is located south of the Maryland Boulevard Gate and is owned by APG but operated by the Aberdeen Test Center. WAH is located in the Edgewood Area and is home to the Maryland Army National Guard. As illustrated, the Clear Zones at PAAF and WAH do not extend outside of APG, although portions of Accident Potential Zones II extend into Harford County and the City of Aberdeen.

NAS Patuxent River Air Installation Compatible Use Zones

Source: St. Mary’s County

Layer Type: Polygon Layer

Link to Ordinance

Overview of Layer: This layer illustrates the safety zones for the main airfield at NAS Patuxent River and the Webster Field Annex that have been identified throughout the completion of an AICUZ Study. These safety layers are integrated into the St. Mary’s County Comprehensive Zoning Ordinance, Article 4 – Overlay and Floating Areas, Chapter 43: Air Installations Compatible Use Zone and Airport Environs Overlay. Additional information on the specifics of the safety zones can be found in [Section 5, Compatibility Assessment: Safety Zones](#) in the NAS Patuxent River Joint Land Use Study Background Report.

¹¹ [A Guide to the Air Installations Compatible Use Zones Program](#). Department of the Air Force.

¹² [Layer Details](#). PGAtlas.

¹³ [Military Installation Overlay Zone Technical Report - Part 1 \(PDF\)](#). Prince George’s County. 2016.

Special Operations Areas

Learn more about these unique testing and operations areas and the considerations local governments should consider regarding compatible use and development.

Potomac River Test Range

Source: Naval Support Facility Dahlgren, US Navy, 2020

Layer Type: Polygon Layer

Overview of Layer: Military testing areas include firing and bombing ranges where the DoD tests weapons systems and equipment, which include releasing ordnance and other projectiles from aircraft, watercraft, as well as from land-based artillery. These areas can be particularly hazardous for development as some weapons systems and ordnance testing can contain live ammunition and explosives.

Potential Use in Compatibility Planning: The Potomac River Test Range is the nation's largest fully instrumented over-water gun-firing range. In this area the Navy fires every type of gun in use and developed for Navy ships. Consequently, the sound and shock waves can travel up and down the Potomac River and impact residents of both Maryland and Virginia.

Helicopter Operations

Source: Joint Base Andrews, NAS Patuxent River

Layer Type: Polygon Layer

Overview of Layer: Joint Base Andrews and NAS Patuxent River conduct low-level helicopter training operations across the state. These operational areas are primarily used for low-level helicopter and low performance fixed-wing aircraft operations.

Potential Use in Compatibility Planning: Due to the low altitudes and speeds of the aircraft, training missions are conducted within these designated low-level areas to avoid collisions with civilian aircraft. Jurisdictions should be aware of these areas as the development of tall structures can interfere with and create hazards for aircraft conducting low-level flight training.

Aerial Firing Weapons Separation Testing Area

Source: Naval Air Station Patuxent River

Layer Type: Polygon Layer

Overview of Layer: The Aerial Firing/Weapons Separation Testing Area is within the Atlantic Test Range – Inner Range and over the Chesapeake Bay in which the DoD evaluates discharge characteristics from weapons and other equipment off aircraft.

Potential Use in Compatibility Planning: Military testing areas include firing and bombing ranges where the DoD tests weapons systems and equipment, which include releasing ordnance and other projectiles from aircraft, watercraft, and from land-based artillery. These areas can be particularly hazardous for development as some weapons systems and ordnance being tested can contain live ammunition and explosives.

Other Military Considerations

Learn more about other military considerations in and around Aberdeen Proving Ground.

Aberdeen Proving Ground: Marine Restriction Area

Source: Aberdeen Proving Ground

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates the APG restricted water zones in the areas immediately surrounding the installation. There are four types of area restrictions in which:

- Entry is prohibited at all times.

- Entry is restricted during times of testing; range boats will be posted during restricted times.
- Fishing is prohibited at all times; entry is restricted during times of testing and range boats will be posted during restricted times; and
- No entry onto APG shoreline by the public.

Potential Use in Compatibility Planning: According to the [APG Boater’s Guide](#), “the surrounding waters fall within the “Exclusive Federal Jurisdiction” of the United States government and the U.S. Army. Because these waters, shorelines, and islands adjoining the installation are used in weapons and ammunition testing and training, and because of the inherent dangers associated with such missions, use of the waters surrounding APG is restricted and, at times, closed when in use by the U.S. Army in accordance with Title 33 of the Code of Federal Regulations.” It is important for boaters in the area to be aware of these areas and familiarize themselves with the regulations that govern the restricted waters at different times. Refer to the APG Boater’s Guide to learn more about permitted/prohibited activities when boating in these areas.

Chesapeake Science and Security Corridor (CSSC)

Source: Harford County Planning

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates the areas and communities that have been designated as part of the Chesapeake Science and Security Corridor. The CSSC is the regional designation for the communities in northeast Maryland that surround and support Aberdeen Proving Ground (APG). The CSSC was established during the 2005 Base Realignment and Closure (BRAC) to support transportation, infrastructure, and workforce development readiness in the area.

Potential Use in Compatibility Planning: These areas are vital to the Aberdeen community, both on and off the installation. As areas immediately surrounding APG, communities should continue to consider investing and redevelopment activities in the corridor to meet the current and future needs of the military community. The CSSC was designated by the Association of Defense Communities as a “Great American Defense Community” in 2018, being recognized as a region that effectively improves the quality of life for service members and military families. Communities are chosen based on community-building and integration, support and collaboration, educational and employment opportunities, and family support.

Statewide Data Layers

Growth and Incentive Areas

Base Realignment and Closure (BRAC) Zones

Source: Maryland Department of Commerce

Layer Type: Polygon Layer

Overview of Layer: The Maryland Department of Commerce identifies and maintains boundaries to identify designated areas of growth; provide local governments with financial assistance for public infrastructure in these well-defined areas and align other state resources and programs to local governments and businesses for a coordinated State effort on making the zones the focus of Base **Realignment and Closure** (BRAC) growth.

Potential Use in Compatibility Planning: BRAC Zone designation provides funding to assist local jurisdictions in making necessary improvements to existing infrastructure and creates opportunities for other investment in the area. Installations and communities should collaborate on potential BRAC program-supported incentives in these areas to attract and retain highly skilled workers for the installation and defense communities.

Sustainable Communities

Source: Maryland Department of Housing and Community Development (DHCD)

Layer Type: Polygon Layer

Overview of Layer: The Maryland Department of Housing and Community Development chairs an interagency panel that reviews applications for **Sustainable Communities** (SC) designation. New and significantly expanded renewal SC areas are approved by the Governor's Smart Growth Subcabinet, while most renewals are approved by the Smart Growth Coordinating Committee, which represents the Subcabinet at the staff level. Sustainable communities retain their designation for a period of five years, after which the jurisdiction within which an SC is designated must submit an application and action plan for renewal. Sustainable Communities include designated **Transit Oriented Development Zones** (TODs) and Base Realignment and Closure (BRAC) Zones. Eligible locations for Sustainable Community designation must be located within a locally designated **Priority Funding Area**.

Potential Use in Compatibility Planning: Projects located in SC areas are eligible for DHCD's Neighborhood Revitalization capital grant funding. Projects in these areas are also preferred for multiple Maryland Department of Transportation funding programs. The DHCD **Low Income Housing Tax Credit Program** awards extra points for projects in a SC, while the Maryland Department of Commerce's **Job Creation Tax Credit** is available to employers that create new jobs in SC areas. Jurisdictions should coordinate SC designation with military installations that may be impacted by growth or development within SC areas. SC designation communicates areas to the state and other stakeholders which a jurisdiction wishes to channel growth and capital investment. An area which a military installation would like to limit growth is not suited for SC designation, while an area which a military installation would like to see supportive development, such as housing or community amenities, should be considered for SC designation.

Opportunity Zones

Source: Maryland Department of Housing and Community Development (DHCD)

Layer Type: Polygon Layer

Overview of Layer: The **Opportunity Zone program** is a nationwide initiative administered by the U.S. Treasury created under the 2017 Tax Cuts and Jobs Act. The program provides federal tax incentives for investment in distressed communities through the year 2027. The state was entitled to nominate 149 low-income census tracts to be Opportunity Zones. The Maryland Department of Housing and Community Development administers the program with support from the Maryland Department of Commerce.

Potential Use in Compatibility Planning: Review of the locations of the Maryland opportunity zones can inform planners of neighborhoods and communities that may have additional federal funds available to help with new economic and/or housing development, preservation of open spaces, or other enhancing capital expenditures as intended by the 2017

legislation. This additional federal money could be valuable to military, local, and community planners as an additional funding stream to pay for proposed long-term compatibility improvements.

Priority Funding Areas

Source: Maryland Department of Planning

Layer Type: Polygon Layer

Overview of Layer: In partnership with Maryland's funding and regulatory agencies, Planning oversees **Priority Funding Areas** (PFAs) and their designation. Maryland established PFAs to ensure that the state's growth-related spending (e.g., roads, water and sewer infrastructure) goes to areas and communities locally designated as growth areas, thus ensuring a more efficient use of funding and limiting growth induced by the extension of infrastructure into areas better suited for preservation and limited growth.

Potential Use in Compatibility Planning: Jurisdictions and military installations should consider PFAs in their compatibility planning efforts. In many instances, areas in which an installation would like to avoid incompatible uses (such as dense residential development) should not be designated as a PFA, as PFAs indicate where a community wishes growth to occur. However, if land uses, infrastructure, and amenities supportive of an installation's mission would benefit from state funding, then jurisdictions, in coordination with the installation, should consider designating those areas as PFAs to give them priority for various types of funding.

Resilience and Conservation

Rural Legacy Areas

Source: Maryland Department of Natural Resources (DNR)

Layer Type: Polygon Layer

Overview of Layer: Maryland's Rural Legacy Program provides funding to preserve large, contiguous tracts of land and to enhance natural resource, agricultural, forestry and environmental protection while supporting a sustainable land base for natural resource-based industries. Land conservation investments are targeted to protect the most ecologically valuable properties that most directly impact Chesapeake Bay and local waterway health. The Rural Legacy Areas digital layer consists of polygons showing Maryland's designated Rural Legacy areas.

Potential Use in Compatibility Planning: Military, local, and community planners can review this layer to determine if there are designated rural legacy areas within or adjacent to the boundaries of their respective planning jurisdictions. Rural Legacy areas can serve as open space buffers for military installations and the surrounding community. Rural Legacy sponsors can also apply for Rural Legacy grants for land or conservation easements within the Rural Legacy boundaries, which could then contribute valuably to long-term compatibility efforts.

Maryland Environmental Trust Easements

Source: Maryland Department of Natural Resources (DNR)

Layer Type: Polygon Layer

Overview of Layer: The Maryland Environmental Trust (MET) is a statewide local land trust governed by a citizen Board of Trustees. The goal of the MET is the preservation of open land, such as farmland, forest land, and significant natural resources, often through conservation easements. Conservation easements are a voluntary and perpetual legal agreement between a landowner (grantor) and the Trust (grantee) to ensure that a property shall not be developed beyond a limit agreed upon by both parties. MET often works with land trust partners in the easement process. This layer illustrates lands across the state that are in a conservation easement with MET.

Potential Use in Compatibility Planning: Conservation easements are a helpful tool that landowners and the military can use to protect the military mission while preserving quality of life for neighboring communities by buffering potential conflicts with airspace, safety, noise, and smoke. The process to establish a conservation easement on buffer lands varies with each military service, partnership, and local real estate condition; learn about different federal programs that communities and states can partner with in the **Federal Agencies** section of the compatible use website.

Private Conservation Lands

Source: [Maryland Department of Natural Resources \(DNR\)](#)

Layer Type: Polygon Layer

Overview of Layer: The Private Conservation data layer is a collection of properties that are protected from development by a Private Conservation group or society either through ownership or conservation easement. Find more information about each protected area, including the owner external links, by selecting this layer on the compatibility review mapping tool.

Potential Use in Compatibility Planning: Conservation easements are a helpful tool that landowners and the military can use to protect the military mission while preserving quality of life for neighboring communities by buffering potential conflicts with airspace, safety, noise, and smoke. The process to establish a conservation easement on buffer lands varies with each military service, partnership, and local real estate condition. Learn about different federal programs that communities and states can partner with in the [Federal Agencies](#) section of the compatible use website.

DNR Owned Properties and Conservation Easements

Source: [Maryland Department of Natural Resources \(DNR\)](#)

Layer Type: Polygon Layer

Overview of Layer: This layer shows all Maryland Department of Natural Resources (DNR) managed properties, which totals approximately 446,000 acres. The properties include lands that are in the Forest Legacy Program, Maryland's Conservation Reserve Enhancement Program (CREP), and Conservation Reserve Program (CRP). DNR leads these and other programs in partnership with private landowners, the U.S. Department of Agriculture, and other local government and non-government organization sponsors that provide supplemental funding and other support services.

Potential Use in Compatibility Planning: This layer provides information on properties that are protected due to the sensitive and/or critical natural features, flora and fauna, or other reasons. They serve critical functions such as protecting the Chesapeake Bay watershed from pollutant runoff or soil erosion/sedimentation entering the water. By knowing the locations of these easements, community and military planners can incorporate them into their long-term compatibility planning efforts. Planners can also identify the stakeholders of the given property(ies) and include them in the planning process.

Forest Conservation Act Easements

Source: [Maryland Department of Natural Resources \(DNR\)](#)

Layer Type: Polygon Layer

Overview of Layer: The Maryland Forest Conservation Act (Natural Resources Article Section 5-1601 through 5-1613) was enacted in 1991 to minimize the loss of Maryland's forest resources during land development by making the identification and protection of forests and other sensitive areas an integral part of the site planning process. Of primary interest are areas adjacent to streams or wetlands, those on steep or erodible soils, or those within or adjacent to large contiguous blocks of forest or wildlife corridors. As part of the Act, local governments with planning and zoning authority must establish and implement local forest conservation programs and the MD Department of Natural Resources (DNR) administers the forest conservation requirements. This dataset represents the location of all conserved and planted forest areas submitted to DNR per reporting requirements; GIS data from local governmental entities with planning and zoning authority was collected to create this layer.

Potential Use in Compatibility Planning: Conservation easements are a helpful tool that landowners and the military can use to protect the military mission while preserving quality of life for neighboring communities by buffering potential conflicts with airspace, safety, noise, and smoke. The process to establish a conservation easement on buffer lands varies with each military service, partnership, and local real estate condition. Learn about different federal programs that communities and states can partner with in the [Federal Agencies](#) section of the compatible use website.

Green Infrastructure Hubs and Corridors

Source: Maryland Department of Natural Resources (DNR)

Layer Type: Polygon Layer

Overview of Layer: The State of Maryland designated these green infrastructure hubs and corridors as critical to preserving principles of landscape ecology and conservation biology. The mapping of these areas assists with consistent decision making and evaluation for land conservation, planning, and other programmatic needs. Maryland's Green Infrastructure Network specifically attempts to recognize a variety of natural resource values (as opposed to a single species of wildlife, for example), how a given place fits into a larger system, the ecological importance of natural open space in rural and developed areas, the need for coordinating local, state, and even interstate planning, and the need for a regional or landscape-level view for wildlife conservation.

Potential Use in Compatibility Planning: This layer can help military, local, and community planners in Maryland identify lands in their area that are designated as green infrastructure and are therefore not suitable for further development, not a first choice for development, or suitable only for development that mitigates impact to the green infrastructure. By comparing the Green Infrastructure Network to areas an installation determines are not compatible with the on-going mission, local, state, and military stakeholders can determine land areas in which shared interests may align. As a collaborative planning exercise, local and military representatives should discuss green infrastructure areas and seek consensus on appropriate development and preservation strategies. Where these two areas align, the installation can be reasonably assured that development will not take place and/or any development will require thorough review that will give them an opportunity to comment. For local/community planners, understanding the locations and resources of hubs and corridors will assist in developing future growth plans that avoid or mitigate impacts to these areas as much as possible. These areas may also present additional opportunities for outdoor experiences and recreation, which are less likely to encroach on military operations. Local/community planners can leverage services provided by these areas (e.g., cleaning the air, filtering stormwater and rainwater, fixing carbon, etc.) to enhance the livability and quality of life of their community. This can be accomplished by designating adjacent land for low impact development to increase the services as offsets, which can then be used to facilitate more dense development for economic growth on other properties.

Targeted Ecological Areas

Source: Maryland Department of Natural Resources (DNR)

Layer Type: Polygon Layer

Overview of Layer: Targeted Ecological Areas (TEAs) are lands and watersheds of high ecological value that are prioritized for protection through various Maryland conservation programs. These areas represent the most ecologically valuable areas in the state.

Potential Use in Compatibility Planning: This layer provides information on properties that are ecologically important due to their sensitive and/or critical natural features, flora and fauna, and their ability to provide enhanced water quality protection, air quality improvements, or other environmental and human health benefits. These areas may or may not be protected and under the management of one of Maryland's conservation programs (e.g., Rural Legacy Program, Forest Legacy Program, CREP, CRP, etc.). By knowing the location of these properties, community and military planners can incorporate them into their long-term compatibility planning efforts. Planners can also identify stakeholders associated with the given property(ies) and include them early in the compatibility planning process.

DNR Owned Properties and Conservation Easements

Source: Maryland Department of Natural Resources (DNR)

Layer Type: Polygon Layer

Overview of Layer: This layer shows all Maryland Department of Natural Resources (DNR) managed properties, which totals approximately 446,000 acres. The properties include lands that are in the Forest Legacy Program, Maryland's Conservation Reserve Enhancement Program (CREP), and Conservation Reserve Program (CRP). DNR leads these and other programs in partnership with private landowners, the U.S. Department of Agriculture, and other local government and non-government organization sponsors that provide supplemental funding and other support services.

Potential Use in Compatibility Planning: This layer provides information on properties that are protected due to the sensitive and/or critical natural features, flora and fauna, or other reasons. They serve critical functions such as protecting the Chesapeake Bay watershed from pollutant runoff or soil erosion/sedimentation entering the water. By knowing the location of these properties, community and military planners can incorporate them into their long-term compatibility planning efforts. Planners can also identify the stakeholders of the given property(ies) and include them in the planning process.

Sea Level Rise Vulnerability

Source: Maryland Department of Natural Resources (DNR)

Layer Type: Polygon Layer

Overview of Layer: The purpose of this layer is to show inundation areas of Maryland's coastal counties in the event of sea level rise. The data was derived from high-resolution topographic data (LiDAR) for use in identifying areas vulnerable to inundation and flooding. The dataset includes 0-to-2-foot inundation, 2-to-5-foot inundation, and 5-to-10-foot inundation.

Potential Use in Compatibility Planning: This data can help military and community planners determine areas that are less suitable for development and perhaps better used for conservation to offset the development of other parcels on the military installation and/or in the jurisdiction. Military installations and neighboring communities should also consider partnering on resiliency efforts for those areas at risk of inundation due to sea level rise.

Infrastructure and Land Use

Airports

Source: U.S. Department of Transportation, Federal Aviation Administration

Layer Type: Point Layer

Overview of Layer: Provides the location of all airports in Maryland. Also provides information on the landing facility, current usage including enplanements and aircraft operations, congestion levels and usage categories as derived from the FAA's national database.

Potential Use in Compatibility Planning: Community and military planners can use this information to determine if an airport is within or adjacent to their jurisdictional planning area and the features associated with it, such as types of aircraft and frequency of take-offs/landings, etc. This information can assist in long-term compatibility planning by accounting for these existing activities and by inviting airport stakeholders to participate in the planning process.

Community Anchor Institutions

Source: Maryland Broadband Cooperative

Layer Type: Point Layer

Overview of Layer: Provides the locations of community anchor institutions in Maryland. Community Anchor institutions are institutions of higher education (above K-12), hospitals/medical centers, and other enduring organizations that play a vital role in local communities and economies. The layer also contains the status of broadband connectivity to the institutions.

Potential Use in Compatibility Planning: Community and military planners should include anchor institutions as stakeholders early in the compatibility planning process as they can provide valuable information regarding the history of the local area and can also potentially provide in-kind services, funding, or other valuable support of both the planning process and implementing actions.

State Facilities

Source: Maryland Department of Information Technology

Layer Type: Point Layer

Overview of Layer: Provides the location of facilities owned and operated across Maryland.

Potential Use in Compatibility Planning: Community planners can use this data to determine which state facilities are located within or adjacent to their jurisdiction and therefore should be included in their long-term planning efforts such as preparation and update of comprehensive plans.

Federal Facilities

Source: Maryland Department of Commerce

Layer Type: Point Layer

Overview of Layer: Provides the location of federal agencies with facilities in Maryland. These facilities provide opportunities for public/private partnerships and support jobs and growth throughout the communities in which they are located. NOTE: this does not include the state's federal military installations.

Potential Use in Compatibility Planning: Community planners can use this data to determine which federal facilities are located within or adjacent to their jurisdiction and therefore should be included in their long-term planning efforts such as the preparation and update of comprehensive plans, the development of growth-related infrastructure, and comprehensive rezonings.

Municipal Boundaries

Source: Maryland Department of Planning (MDP)

Layer Type: Polygon Layer

Overview of Layer: This layer illustrates the borders of all incorporated municipalities in Maryland. Note: these are not counties.

Potential Use in Compatibility Planning: Military, local, and community planners can use this layer to determine if there is a formally established government entity below the county level with whom they may need to coordinate. Those municipalities with planning and zoning authority will have their own comprehensive or master plans for advancing their economic and quality of life objectives and therefore should be included as a stakeholder in any future planning efforts that could potentially impact them -- either positively or negatively.

Land Use Land Cover (2010)

Source: Maryland Department of Planning (MDP)

Layer Type: Polygon Layer

Overview of Layer: Provides a generalized view of how developed land has changed throughout Maryland, primarily capturing the conversion of resource land to development and characterizing the type of development (e.g., very low density, low density, medium density or high-density residential development, commercial, industrial, institutional). The Maryland Department of Planning is currently updating this layer.

Potential Use in Compatibility Planning: Community and military planners can use this data to determine the types and densities of existing developed land that surrounds the given installation and needs to be considered when undertaking new or updated compatibility planning efforts. For example, military planners can use the data to help determine where new missions are best placed to minimize "over the fence" impacts that negatively affect both the mission and existing surrounding communities.

Maryland Road Centerlines – Maryland Routes

Source: Maryland Department of Transportation, State Highway Administration

Layer Type: Polyline Layer

Overview of Layer: This data layer consists of linear geometric features which represent the street centerline for all public roadways in Maryland. The centerline represents the geographic location on the roadway between both shoulders (physical center), which usually coincides with the center painted line dividing bi-directional travel lanes.

Potential Use in Compatibility Planning: Maryland Roadway Centerline data assists with planning aspects such as emergency response and management, school bus and mass transit bus routing, planning for land use and transportation needs, continuity of roadway data and display at county boundaries leading to the same "look and feel" across jurisdictions, tracking assets on and along the roadway network, producing maps at various scales, and numerous other applications. The data can also help determine if there is adequate road capacity in and around military installations to minimize congestion due to required security checks and high volume of traffic at the standard beginning and ending times of the civilian and military workdays.

U.S. Routes – Centerlines

Source: Maryland Department of Transportation, State Highway Administration

Layer Type: Polyline Layer

Overview of Layer: This data layer consists of linear geometric features which represent the street centerline for all public roadways in Maryland. The centerline represents the geographic location on the roadway between both shoulders (physical center), which usually coincides with the center painted line dividing bi-directional travel lanes.

Potential Use in Compatibility Planning: Maryland Roadway Centerline data aids planning aspects such as emergency response and management, school bus and mass transit bus routing, planning for land use and transportation needs, continuity of roadway data and display at county boundaries leading to the same "look and feel" across jurisdictions, tracking assets on and along the roadway network, producing maps at various scales, and numerous other applications. The data can also help determine if there is adequate road capacity in and around military installations to minimize congestion due to required security checks and high volume of traffic at the standard beginning and ending times of the civilian and military workdays.