



What is a Joint Land Use Study?

A Joint Land Use Study (JLUS) is a planning process accomplished through the collaborative efforts of a comprehensive list of stakeholders in a defined study area in order to identify compatible land uses and growth management practices in communities close to active military installations. These stakeholders include local community, state, and federal officials, residents, business owners, nongovernmental organizations, and the military.

The intent of this planning effort is to foster and enhance an ongoing working relationship between Naval Support Activity (NSA) Crane and its Lake Glendora Test Facility (LGTF), federal and state agencies, neighboring jurisdictions, and local organizations. The JLUS was developed following three main objectives:

Understanding. Convene community and military representatives to identify, confirm, and understand the compatibility issues in an open forum, taking into consideration both community and NSA Crane and its LGTF perspectives and needs. This includes public awareness, education, and input as part of a cohesive outreach program.

Collaboration. Encourage cooperative land use and resource planning by NSA Crane and surrounding communities so that future community growth and development are compatible with the operational missions at NSA Crane and its LGTF, while at the same time seeking ways to reduce operational impacts on adjacent lands.

Actions. Provide a set of mutually supported tools, activities, and procedures (strategies) that local jurisdictions, agencies, and NSA Crane and its tenant commands can implement in order to avoid and reduce compatibility issues. The strategies proposed include both operational measures to mitigate installation impacts on surrounding communities, and local government and agency approaches to reduce community impacts on military operations. These strategies will help decision makers resolve compatibility issues and prioritize projects within the annual budgeting process of their respective entity/jurisdiction.



Why Is it Important to Partner with NSA Crane?

It is important to partner with NSA Crane on relevant and long-range planning projects to protect the viability and sustainability of the installation economic impact and community benefit provided to the region. The JLUS process strives to deepen the understanding of the mutual benefit shared between NSA Crane and the surrounding region.

NSA Crane directly supports national defense through their research, development, testing, engineering, and munitions handling missions. NSA Crane is the region's largest employer contributing more than \$2 million daily to the Indiana economy, an additional \$1+ billion in procurements of products and services annually, and more than \$325 million in annual salaries and benefits. People working at NSA Crane invest in community outreach and support, participating in community causes and educational programs throughout surrounding areas.

Five communities and several organizations and agencies were active partners working with NSA Crane on the collaborative JLUS planning effort:

Daviess CountyGreene County

Lawrence County

Martin County

Sullivan County

 Indiana Office of Community and Rural Affairs

(OCRA)

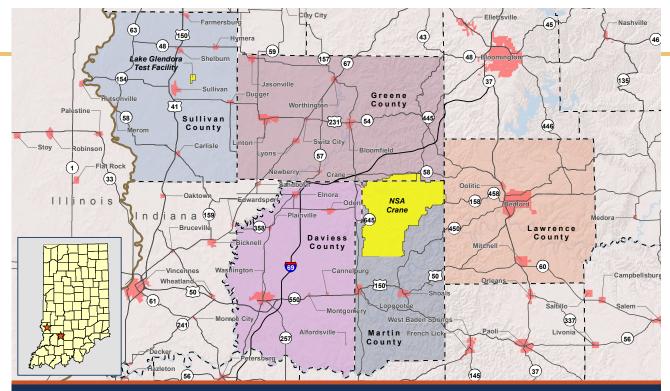
NSA Crane

- Radius Indiana
- Indiana Office of Defense Development (IODD)

Collaborative Planning

The JLUS planning process was designed to create a locally relevant study that builds consensus and obtains support from the stakeholders involved. The public was instrumental in the development of this JLUS by providing their perspective and feedback, both in the JLUS public forums and through the use of the project website: **www.cranejlus.com**.

The development of the project was also guided by three committees composed of community and military stakeholder representatives. These committees were the Policy Committee, which provided project oversight, guidance, and decisionmaking; the Technical Working Group, which assisted in the identification and assessment of compatibility issues, the creation of recommendations, and the overall report development; and the Sponsor Committee, which coordinated key elements of the project.



NSA Crane JLUS and Lake Glendora Test Facility JLUS Study Area

Compatibility Assessment

Compatibility, in relation to military readiness, can be defined as the balance or compromise between community needs and interests and military needs and interests. The goal of compatibility planning is to promote an environment where both community and military entities communicate, coordinate, and implement mutually supportive actions that allow both to achieve their respective objectives. A number of factors assist in determining whether community and military plans, programs, and activities are compatibility factors were used to identify, determine, and establish a set of key JLUS compatibility issues. These compatibility factors included topics such as coordination / communication, frequency spectrum impedance / interference, land use, legislative initiatives, noise, and safety zones.

LAS Land / Air / Sea Spaces AQ Air Quality LU Land Use AT Anti-Terrorism / Force Protection BIO LEG **Biological Resources** Legislative Initiatives CA LG Light and Glare **Climate Adaptation** сом MAR Coordination / Communication Marine Environments NOI CR **Cultural Resources** Noise DSS Dust / Smoke / Steam ΡΤ Public Trespassing ED **Energy Development** RC **Roadway Capacity** SA FSC Safety Zones Frequency Spectrum Capacity FSI SNR Frequency Spectrum Impedance / Scarce Natural Resources Interference VO Vertical Obstructions LHA Local Housing Availability V Vibration IE WQQ Infrastructure Extensions Water Quality / Quantity

NSA Crane JLUS Study Area

The NSA Crane JLUS Study Area addresses all land near NSA Crane that may impact current or future military operations or be impacted by operations. The NSA Crane JLUS Study Area includes Daviess County, Greene County, Lawrence County, Martin County, the Town of Crane, and other towns within the counties including Bedford, Loogootee, and Shoals.

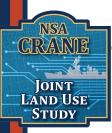
The primary characteristics evaluated in determining the NSA Crane JLUS Study Area were general compatibility factors associated with land use and development, particularly from completion of the Interstate 69 corridor, as well as noise from military operations and the 3-mile military notification buffer extending from the installation perimeter as established by state statute.

Lake Glendora Test Facility JLUS Study Area

The LGTF JLUS Study Area addresses all land near the LGTF that may impact current or future military operations or be impacted by operations. The LGTF JLUS Study Area includes Sullivan County and the City of Sullivan.

The primary characteristics evaluated in determining the LGTF JLUS Study Area were general compatibility factors associated with noise from military operations and the 3-mile military notification buffer extending from the LGTF perimeter as established by state statute.

COMPATIBILITY FACTORS



JLUS Recommended Strategies

The heart of the NSA Crane JLUS is a set of 87 recommended strategies that address compatibility issues for the two study areas of this JLUS. Since the 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 strategies developed are uniquely tailored for this JLUS and respect the local context, including the value of personal property rights recognized throughout the region.

The key to the implementation of the strategies is the establishment of a JLUS Implementation Coordination Committee to oversee the JLUS execution. Through this Committee, local jurisdictions, NSA Crane, federal and state agencies, and other stakeholders can continue their initial work together to establish procedures, recommend or refine specific actions, and make adjustments to strategies over time to ensure the JLUS continues to resolve key compatibility issues into the future. Concurrent with the efforts of the JLUS Implementation Coordination Committee, each project partner is responsible for establishing their own course of action to implement the strategies unique to them through collaboration of their leadership, planners, and the public. Since the Implementation Plan is intended to be a living document, each partner jurisdiction has the flexibility to revise and refine the Plan for their unique circumstances and use for tracking implementation actions and progress.

The strategies developed during the JLUS process are described in detail in Chapter 6 of the JLUS Report.

NAVAL SUPPORT ACTIVITY CRANE JLUS STUDY AREA STRATEGIES

The following list highlights key recommended strategies for the NSA Crane JLUS Study Area that were developed and agreed upon by the JLUS partners.

Coordination / Communication

- Establish a JLUS Implementation Coordination Committee to oversee the implementation of the JLUS recommendations for the NSA Crane JLUS Study Area
- JLUS Study Area governments should formalize coordination with NSA Crane in planning documents
- NSA Crane should improve upon the existing Installation Noise Complaint Management Program
- JLUS Study Area governments should acknowledge the military notification requirement by passing a resolution
- JLUS Study Area governments should work with NSA Crane to develop, adopt and implement a development notification checklist to assist with identifying development types that could potentially be incompatible with the NSA Crane mission
- JLUS Study Area governments should adopt military notification procedures for development projects through the tax abatement process

Dust / Smoke / Steam

 Monitor and employ adaptive management practices to control fugitive dust from demolition range activities at NSA Crane



TTT

Housing Availability

 JLUS Study Area governments should update planning documents to include housing goals and objectives to provide a range of housing options that accommodate transient and permanent parties who work at NSA Crane

Land Use

- Amend local government planning documents to include integration of military compatibility planning and Military Compatibility Area maps from the JLUS
- JLUS Study Area governments without land use planning should consider adopting land use controls specific to military compatibility within the 3-mile military notification area
- Adopt a master plan for WestGate@Crane Technology Park
- Continue to pursue the development of a truck travel center near Interstate 69 interchanges

Legislative Initiatives

- Amend Indiana Code to improve upon existing legislation for military compatibility
- Designate the three-mile military notification area around military installations as "state areas of interest" where planning guidance specific to military compatibility can be implemented

Noise

- NSA Crane should document noise complaints through an annual noise summary
- Require real estate disclosures during property transfers or changes in tenancy to notify future owners and tenants that they may be subject to noise impacts generated by military operations



Roadway Capacity

NSA Crane should conduct a feasibility study to determine if additional vehicle queuing is needed at the Bloomington Gate and budget for needed improvements as identified in the study

Safety Zones

 JLUS Study Area counties should designate Primary Materials Transport Corridors to reduce heavy wear and tear on roads and ease road maintenance from trucks at NSA Crane



 Greene County should consider adopting land use controls for low intensity agricultural and residential land uses within the limited area of the Lake Greenwood Watershed

Military Compatibility Area Overlay District / Military Compatibility Areas

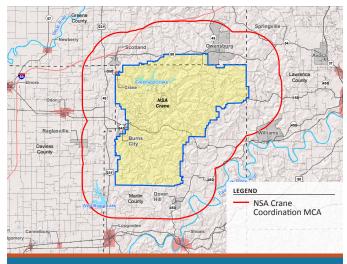
A key strategy to guide compatible development and activities, without overregulation, is the establishment of five Military Compatibility Areas (MCAs) and a Military Compatibility Area Overlay District (MCAOD). The MCAs are used to define the geographic areas where specific JLUS strategies are to be applied.

This technique ensures the strategies are applied to the appropriate areas, and that locations deemed not subject to a specific compatibility issue are not adversely impacted by actions inappropriate for their location or circumstance.

For the purpose of this JLUS, there are two MCAODs, one for NSA Crane and one for the LGTF.

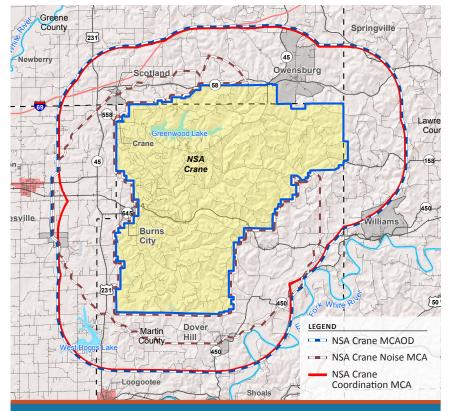
The MCAs were designated to accomplish the following:

- Promote an orderly transition between community and military land uses to maximize compatibility
- Promote and protect public health, safety, and welfare
- Maintain the operational capabilities of military installations
- Promote an awareness of the size and scope of military operating areas
- Establish compatibility requirements within the designated area, such as requirements for notification of development to the military

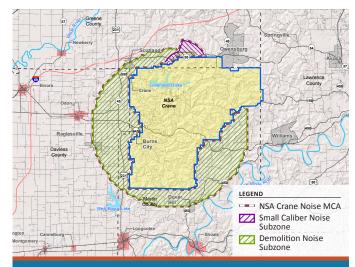


NSA Crane Coordination MCA

The proposed Coordination MCA addresses the areas directly surrounding NSA Crane that could potentially impact military operations. The Coordination MCA is a 3-mile buffer surrounding the NSA Crane perimeter where there is a state-mandated notification requirement to the military by a government prior to approving planning actions. The government is required to notify the commander of the military installation prior to taking action to plan or regulate the use, improvement, and maintenance of real property, or the location, condition, and maintenance of structures and other improvements property, or regulate the platting or subdivision of land within the 3-mile area.



Naval Support Activity Crane MCAOD



NSA Crane Noise MCA

The Noise MCA includes all land located off-installation within noise contours greater than 115 peak decibels associated with military range activities, as well as within noise contours greater than 87 peak decibels associated with small caliber arms activity. NSA Crane typically conducts these activities under neutral weather conditions to minimize noise outside the installation; however, under unfavorable weather conditions the noise can travel and impact surrounding areas. Because this is when people may experience the greatest exposure in the surrounding community, the Noise MCA is based on unfavorable weather conditions with the goal of minimizing military noise on future development.



LAKE GLENDORA TEST FACILITY JLUS STUDY AREA STRATEGIES

The following list highlights the key recommended strategies for the LGTF JLUS Study Area that were developed and agreed upon by the JLUS partners.

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Anti-Terrorism / Force Protection

- NSA Crane should plan and budget for landscaping features at the LGTF to minimize observation opportunities into the property
- NSA Crane should plan and budget for a new controlled perimeter around the LGTF property

Coordination / Communication

- Establish a JLUS Implementation Coordination Committee to oversee the implementation of the JLUS recommendations for the LGTF JLUS Study Area
- Amend State legislation to allow a non-resident representative from the military to serve as non-voting member on county and local government Plan Commissions
- Provide mutual briefings to perpetually enhance support and cooperation, and reinforce the partnership between the military installation and Study Area governments
- The LGTF should establish an official and routine public notification protocol to inform residents in advance of detonation activities at the LGTF and consider an audible early warning system to alert the surrounding residents two to five minutes prior to a detonation event
- The City of Sullivan should adopt development notification procedures through the building permit process

Frequency Spectrum Capacity

- NSA Crane should conduct a Frequency Study to identify the sources and extent of spectrum interference issues experienced in the surrounding community and the extent of correlation with the LGTF activities
- NSA Crane should update the Comprehensive Frequency Management Program at the LGTF to ensure a spectrum planning process that considers the current and future availability and procedures for deconflicting future spectrum needs
- NSA Crane should coordinate with Sullivan County for their review of projects with frequency requirements to avoid frequency conflicts outside the LGTF
- Convene a coalition of spectrum stakeholders to identify notification procedures for mitigating and troubleshooting possible service interruptions

Land / Air / Sea Spaces

The property owner of the proposed seaplane base should coordinate with the LGTF in the planning and development of the base, and coordinate consistently when operational to ensure that the military mission is considered

Land Use

 Sullivan County and the Indiana Department of Transportation should notify and coordinate infrastructure expansion plans with the LGTF such as water and sewer extensions and transportation improvements



- NSA Crane should update the Operational Noise Consultation for the LGTF to use actual noise levels and consider conducting a pre-blast seismograph survey to determine a precise measure of affected geography
- NSA Crane should consider the acquisition of property surrounding the LGTF from willing sellers at fair market value



 NSA Crane should plan and budget for signage at the LGTF that identifies the property boundary at the right-of-way with E County Road 300 N and the outfall from Little Glendora Lake

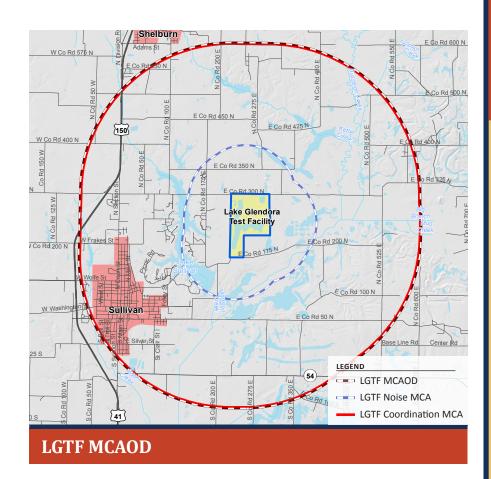
Safety Zones

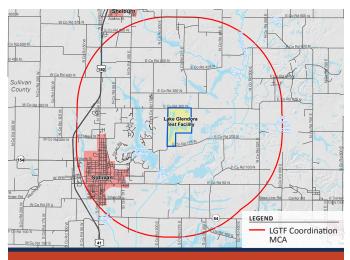
 Sullivan County should develop a composite map of methane well, high-pressure pipeline, and active and abandoned coal mine locations, and incorporate the map into hazard mitigation planning documents

Military Compatibility Area Overlay District / Military Compatibility Areas

Operations at the Lake Glendora Test Facility

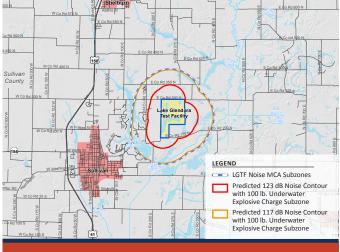
The LGTF contains three different ranges on the lake for a variety of testing purposes. The facility is used for hydro-acoustic testing, underwater explosives testing, and surface burns, and provides a unique testing environment with environmental, Federal Aviation Administration, Electronic Warfare, and Laser Testing approvals or capabilities at one site. Unmanned aerial vehicles (UAVs) are also tested at LGTF. These operations were analyzed to develop an MCAOD for the LGTF JLUS Study Area which is illustrated on the map to the right. The MCAOD comprises the outer extent of two MCAs described below.





LGTF Coordination MCA

The proposed Coordination MCA for the LGTF JLUS Study Area is a 3-mile military notification area surrounding the LGTF perimeter wherein planning actions by governments could potentially impact military operations, and where governments are required by state law to notify the military prior to approving planning actions. The government is required to notify the commander of the military installation prior to planning or regulating the use, improvement, and maintenance of real property; planning or regulating the location, condition, and maintenance of structures and other property improvements; and regulating the platting or subdivision of land, within the 3-mile area.



LGTF Noise MCA

The Noise MCA for the LGTF JLUS Study Area shows the areas off installation that can be impacted by noise events conducted at the LGTF. Because noise contours have not been modeled at the LGTF due to the frequency of noise generating events, they have been predicted only for underwater detonations based on accepted metrics at intervals of 0.5 miles and 1 mile from the LGTF.



JLUS Documents

Three JLUS documents providing different levels of information are available to the public, elected and appointed officials, and the military. These documents provide an overview of the JLUS process, detailed information on NSA Crane, the LGTF and the overall study area, an assessment of existing compatibility issues, and the recommended strategies in the Implementation Plan. These resource documents are as follows:

Joint Land Use Study

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 NSA Crane and LGTF mission overview;
- Population profile and economic overview of the communities in the JLUS Study Area;
- 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

Background Report

The NSA Crane JLUS Background Report provides the technical background and detailed compatibility assessment identified as part of the JLUS project and basis for development of the JLUS recommendations.

Executive Summary

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

This study was prepared under contract with the Indiana Office of Community and Rural Affairs (OCRA), with financial support from the Office of Economic Adjustment Department of Defense and the following Indiana jurisdictions: Daviess County, Greene County, Lawrence County, Martin County, and Sullivan County. 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.



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