

NAS CORPUS CHRISTI JOINT LAND USE STUDY



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Acknowledgements

POLICY COMMITTEE

The Policy Committee (PC) served an active and important role in providing policy direction during the development of the NAS Corpus Christi Joint Land Use Study (JLUS). The PC was comprised of the following individuals:

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TECHNICAL ADVISORY GROUP

The Technical Advisory Group (TAG) served a key role in the development of the NAS Corpus Christi JLUS. They provided the overall technical support, review, and guidance of the study. The TAG was comprised of the following individuals:

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This study was prepared under contract with the City of Corpus Christi, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the City of Corpus Christi and the jurisdictions, agencies and organizations participating in the JLUS program, and does not necessarily reflect the views of the Office of Economic Adjustment.

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Introduction

Military installations are critical to local economies, generating thousands of jobs and millions of dollars in economic activity and tax revenue annually. In past instances, incompatible development has been a factor in the curtailment of military training operations and restructuring of mission critical components to other installations. In order to protect the missions of military installations and the health of the economies and industries that rely on them, collaboration and joint planning between installations and local communities must occur to address encroachment. This study attempts to promote compatible development by mitigating current issues and addressing future issues and to improve coordination between the City of Corpus Christi, Nueces County, and Naval Air Station Corpus Christi (NASCC).

JLUS Project Overview

The NASCC Joint Land Use Study (JLUS) is a collaborative planning effort led by the City of Corpus Christi, and in partnership with NASCC and Nueces County. The JLUS was undertaken in an effort to guide planning and development in the areas surrounding NASCC's Truax Field, Cabaniss Field, Waldron Field, and Corpus Christi International Airport (CCIA).

The compatibility factors considered in this assessment are described in the Compatibility Assessment. Upon review and prioritization of these factors and identification of issues with the city, committees, and the public, a set of strategies to address compatibility concerns were developed.

The recommended strategies are based on a toolbox of methods used to address compatibility issues and address the use of policy, planning and zoning, coordination and communication, and outreach methods.

What Is a JLUS?

A JLUS is a collaborative planning effort conducted by the community as a joint venture among active military installations, surrounding cities and counties, state and federal agencies, and other affected stakeholders. The overarching purpose of the JLUS planning process is to identify compatible land uses and growth management guidelines within, and proximate to, active military installations.

The intent of the process is to establish and foster a working relationship among military installations and their neighboring communities to act as a team to prevent and / or curtail civilian encroachment issues associated with continued military operations, potential future mission changes, and local growth. The term encroachment refers to incompatible uses of land, air, water, and other resources that may individually or cumulatively impact the military's ability to carry out its testing and training mission.



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JLUS PROJECT OVERVIEW

The end result of a JLUS is to provide a set of recommendations or potential guidelines that can be implemented by identified stakeholders to promote compatible development and relationships between the military and neighboring communities for the present and future. As such, a JLUS may become an adopted plan for establishing compatible land use regulations.

The JLUS program is administered by the DOD Office of Economic Adjustment (OEA). This JLUS is funded through a federal grant provided to the City of Corpus Christi by OEA with a local funding match provided by the city.

As the JLUS sponsor, the City of Corpus Christi is charged with the management of the project and federal grant and is responsible for the preparation of the JLUS in coordination with the Navy and other interested agencies and organizations in the region. The content of this JLUS is directed by the city, with input from Nueces County, NASCC, CCIA and other key local stakeholders.

Why Do a JLUS?

In addition to the many positive interactions among the city, NASCC, and the region, the activities or actions of one entity can potentially negatively impact the other(s) and result in conflicts. As the community develops and expands in response to growth and market demands, development continues to expand toward military installations and operational areas. The result can include land use and other compatibility issues, often referred to as encroachment, which can have negative impacts on community safety, economic development, and sustainment of military activities and readiness. This threat to military readiness activities is currently one of the Department of Defense's (DOD) greatest concerns.

A JLUS is necessary to ensure the future compatibility between land uses necessary to support the continuation of the military mission at NASCC and the increasing civilian development occurring near the installation. The results of the JLUS will provide all stakeholders with:

- A detailed land use assessment for surrounding high growth areas;
- A baseline of existing incompatible land uses around the installation and outlying fields;
- Assessments of regional growth trends along designated transportation corridors;
- A plan to assist surrounding communities with development decision-making; and
- Recommendations and strategies to promote compatible land use planning around NASCC's main base (Truax Field), its Naval Auxiliary Landing Fields (NALFs) (Waldron and Cabaniss Fields), CCIA, and surrounding communities.

Support and Sustain Military Mission

Although military installations and nearby communities may be separated by a fence line they often share natural and manmade resources such as land, airspace, water, and infrastructure. Though there are many positive interactions among local jurisdictions, agencies, and the military, competition for shared resources and activities or actions of one entity can pose unintended negative impacts on another, which often results in conflict. As communities develop and expand in response to growth and market demands, land use approvals have the ability to locate potentially incompatible development closer to military installations and operational / training areas. The result can initiate or build upon new and existing land use and other compatibility issues, often referred to as encroachment, which can have negative impacts on community safety, economic development, and sustainment of military activities and readiness.



Collaboration and joint planning among military installations and local communities and agencies is needed to protect the long-term viability of existing and future military missions. Working together also enhances the health of economies and industries of the communities before incompatibility becomes an issue. Recognizing the close relationship that should exist between installations and adjacent communities, the OEA implemented the JLUS program in an effort to mitigate existing and future conflicts and enhance communication and coordination among all affected stakeholders. This program endeavors to preserve the sustainability of local communities within the JLUS study area while protecting current and future operational and training missions.

Economic Benefit to the City and Region

The economic welfare of Corpus Christi and its neighboring jurisdictions is largely a result of the military presence. The installation and its outlying fields serve as an important economic engine contributing to the regional economy through sustained direct employment, indirect spending, and construction.

Operations at NASCC employ federal and federally-reimbursed civilian employees. Through direct military members and supporting contracts, the installation supports 10,250 jobs and has an overall economic impact of approximately \$3.6 billion, equivalent to 21% of the area's \$17 billion economy.

Today the base is the major hub of military activity in South Texas, employing military from all branches of the service, civil service employees and contractors all supporting our national defense. Corpus Christi Army Depot, with 3,800 employees, is the largest industrial employer in the Corpus Christi region.

JLUS Objectives

The primary objectives of a JLUS are to reduce potential conflicts between military operations and surrounding areas while accommodating new growth and economic development, sustaining economic vitality, and protecting the general public's health and safety, without compromising the operational missions of the installation. There are three core objectives of the JLUS program:

- **Understanding.** Increase communication between military, local jurisdictions, and stakeholders to promote an understanding of the strong economic and physical relationship between the installation and its neighbors. This includes public awareness, education and input organized as part of a cohesive outreach program.
- **Collaboration.** Promote collaborative planning between the military, local jurisdictions, and stakeholders in order to safeguard the mission of the installation from future incompatible civilian development.
- **Actions.** Develop and implement strategies for reducing the impacts of incompatible activities on the community and military operations. This step provides a set of mutually supported tools, activities, and procedures from which local jurisdictions, agencies, and the military can select, prepare, and approve / adopt. These tools should ultimately be implemented by the stakeholder identified as responsible for a particular action once the JLUS planning process is complete.

JLUS Partners

Stakeholders

One of the first steps in any planning process is the identification of stakeholders. Informing or involving stakeholders early in the planning process is instrumental in the identification of the most pressing concerns to address and resolve through the development of integrated strategies and measures.

Stakeholders critical to the development of the NASCC JLUS include individuals, groups, organizations, and governmental entities interested in, affected by, or who have the potential to affect the outcome of the JLUS project. Stakeholders involved throughout this JLUS process included, but were not limited to:

- Local jurisdictions (Corpus Christi, Nueces County, San Patricio County)
- DOD officials (including OEA representatives) and military installation personnel
- Local, regional, and state planning, regulatory, and land management agencies
- Landholding and regulatory federal agencies
- The public (including residents and landowners)
- Education institutions
- Environmental advocacy organizations
- Nongovernmental organizations (NGOs)
- Other special interest groups

Public Participation

The public participation component of the JLUS consisted of several key techniques to ensure that stakeholders and the public were informed, educated and could offer input into the preparation of the JLUS findings and recommendations. In addition to the public outreach and meetings, the NASCC JLUS utilized a Policy Committee (PC) for project oversight, guidance, and decision-making, and a Technical Advisory Group (TAG) for identifying and studying compatible use issues, making recommendations to the PC, and developing the report.

These committees are comprised of city, county, military, and other stakeholders who have guided the development of the JLUS. Additionally, interviews with public stakeholders and representatives augmented the planning and decision-making process of both committees.

Policy Committee and Technical Advisory Group

The development of the NASCC JLUS was sponsored by the City of Corpus Christi in collaboration with Nueces County and was guided by the PC and the TAG. The PC was established at the beginning of the project to provide guidance and input on policy issues, provide overall direction to the process, and review study findings. The TAG was established to provide technical expertise to the PC and the project team. The TAG consisted of city and county planners, military planners and technical specialists, state agency representatives, and others with technical expertise critical to creating a plan that could be implemented. The committee identified issues to be addressed, provided feedback on report development, and evaluated implementation options for the PC. Table 1 summarizes the JLUS participants and responsibilities.



Table 1. JLUS Sponsor and Committees Responsibilities and Participants

Responsibilities	Participants
JLUS SPONSORS	
<ul style="list-style-type: none">■ Coordination■ Grant Management / Accountability■ Financial Contribution	<ul style="list-style-type: none">■ City of Corpus Christi
POLICY COMMITTEE (PC)	
<ul style="list-style-type: none">■ Policy Direction■ Study Oversight■ Monitoring■ JLUS Acceptance	<ul style="list-style-type: none">■ City of Corpus Christi■ Nueces County■ NAS Corpus Christi
TECHNICAL ADVISORY GROUP (TAG)	
<ul style="list-style-type: none">■ Identify Issues■ Provide Expertise to Address Technical Issues■ Evaluate and Recommend Implementation Options to the PC■ Provide Draft and Final Report Recommendations to the PC	<ul style="list-style-type: none">■ Nueces County■ TAMUCC■ Corpus Christi International Airport■ City of Corpus Christi■ Chamber of Commerce■ Port of Corpus Christi■ Corpus Christi Builder's Association■ Texas Department of Transportation■ San Patricio County■ Corpus Christi Board of Realtors■ NAS Corpus Christi

Community Input

As highlighted in the JLUS Objectives, the JLUS process was designed to create a locally relevant plan that builds consensus and obtains support from the various stakeholders involved. As such, the Corpus Christi JLUS process also utilized a public outreach program that included a variety of opportunities for interested parties to contribute to the development of this study.



Public Workshop #1

The general public was instrumental in the development of this JLUS and its strategies by providing their perspective and feedback, both in the public forums and through the use of the interactive project website (www.ccjlus.com). During the development of the JLUS, three public workshops were held to solicit public input on the direction and content of the JLUS.

A public website was also established, providing information on the planning process, meeting dates, and draft documents for public review. The website can be accessed at www.ccjlus.com.

The screenshot shows the homepage of the NAS Corpus Christi Joint Land Use Study website. The header features a colorful gradient background transitioning from blue to orange. The title "NAS CORPUS CHRISTI JOINT LAND USE STUDY" is prominently displayed in white. Below the title, there are navigation links: Home, Project Overview, Public Participation, Downloads, and Contact Us. The main content area includes sections for "PUBLIC WORKSHOPS", "OCTOBER 2012 PUBLIC WORKSHOP", "WHAT'S NEW", and "FOR MORE INFORMATION". The "PUBLIC WORKSHOPS" section contains links to download materials from the October 3rd workshop. The "OCTOBER 2012 PUBLIC WORKSHOP" section details the second workshop held on October 3, 2012. The "WHAT'S NEW" section lists recent updates like the October 2012 Public Workshop. The "FOR MORE INFORMATION" section provides contact details for Robert Payne, AICP. A "WELCOME" section at the bottom introduces the website and its purpose.

Project Study Area

Naval Air Station Corpus Christi (NASCC) is located along the southeast coast of Texas, within the city limits of Corpus Christi in Nueces County. Corpus Christi is located approximately 140 miles southeast of San Antonio, Texas and 170 miles north of the United States / Mexico border.

The planning area for this JLUS encompasses NASCC's main base, including the main airfield Truax Field, its two auxiliary landing fields Cabaniss and Waldron, the Corpus Christi International Airport (CCIA), and the land areas extending approximately five nautical miles from the airfields. This primary planning area is depicted on Figure 1. Although this area is considered the primary planning area, the study area may be expanded or contracted by compatibility factor assessed. For example, wind turbines located in the vicinity of Corpus Christi have the potential to affect pilot navigation. Wind turbines may be located both in the primary study area and beyond, thus expanding the study area to a regional context.

NAS Corpus Christi

NASCC is a 2,340-acre military base with additional aviation and special use easements. NASCC is home to the Chief of Naval Air Training, Training Air Wing FOUR (TW-4), the Corpus Christi Army Depot (CCAD) (the primary aviation maintenance depot for DOD rotary wing aircraft), the aviation component of Coast Guard Sector Corpus Christi, and many other tenant organizations.

NASCC has supported pilot training and operations at its main airfield, Truax Field as well as its two landing fields since 1941. The station was initially used to train pilots, navigators, aerologists, gunners, and radio operators. In its first year, 800 instructors provided training for more than 300 cadets a month. While air training continued to be the primary mission for the base after World War II, the installation began gaining other critical missions. In 1961, the Army established what is now the largest helicopter repair depot in the world.

The Army Aeronautical Depot Maintenance Center, today known as CCAD, was established on base and is the largest tenant command at NASCC. In 1972, Naval Air Training Command Headquarters was relocated to NASCC from NAS Pensacola, Florida, and TW-4 was established. TW-4 squadrons conduct operations at Truax Field and Waldron and Cabaniss Fields, training approximately 400 newly qualified aviators each year.



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STUDY AREA PROFILE



Figure 1
Corpus Christi JLUS Planning Area



In August 6, 1986, the main airfield at NASCC was renamed Truax Field in honor of Navy Lieutenant Myron Milton Truax. Today, Navy, Marine Corps, and foreign student pilots earn their wings training in the four squadrons of TW-4, using Truax Field and outlying airfields.

NASCC is a major center for military activity in south Texas with over 40 tenant commands. These tenants include the Chief of Naval Air Training, CCAD, National Air Security Operations Center – Corpus Christi, U.S. Coast Guard, and many more. Approximately 10,250 employees from all parts of the country, military from all branches of the service, civil service employees and contractors now work at NASCC to support national defense.

Mission

NASCC is an aviation training facility with a mission to effectively support the training of U.S. Navy, Marine Corps, Coast Guard and international student pilots. NASCC is also tasked with efficiently providing high quality installation facilities and operational services to the U.S. Army, Department of Homeland Security and other government and private tenant organizations.

Current Air Operations

Pilot training requires the designation and assignment of specific flight tracks; however, aircraft can deviate from flight tracks. Flight tracks are largely based on the proximity of populated areas, the amount of airspace required for the specified training, as well as the weather, pilot, and number of other aircraft in the flight track. Flight tracks can deviate from their typical course due to the weather, type of maneuver, and the individual ability of the student pilot. A NASCC issue of concern is the ability of the student pilot to maintain their assigned track.

Truax Field. Operation types occurring at Truax Field include departures, straight-in arrivals, overhead-break arrivals, short-break arrivals, touch-and-go patterns, Practice Precautionary Emergency Landing (PPEL), Field Carrier Landing Practice (FCLP), and ground-controlled approach (GCA) operations. In 2008, a total of 138,044 annual operations were reported at Truax Field.

Waldron Field. Waldron Field supports the touch-and-go training practice for NASCC TW-4 training squadrons (VT-27 and VT-28) and is currently used primarily by T-34C aircraft. Operation types include departures, arrivals (90% are overhead break and 10% short-break arrivals), and touch-and-go patterns. Activities at Waldron Field currently occur only during daytime hours. In 2008, a total of 79,706 flight operations were reported at Waldron Field.

Cabaniss Field. Cabaniss Field supports touch-and-go training practice for NASCC TW-4 training squadrons (VT-31 and VT-35) and is primarily used by the T-44A and TC-12 aircraft. Flight operation types include departures, arrivals (90% are overhead break and 10% short-break arrivals), and touch-and-go patterns. In 2008, a total of 85,802 flight operations were reported at Cabaniss Field.

Corpus Christi International Airport. CCIA is utilized by NASCC for certain training operations as needed. The CCIA accommodates an average of 42 inbound and outbound commercial flights per day; however, more than half of all of the airport's aircraft operations are military. Historical FAA data indicates that CCIA has had over 50,000 military operations in almost every year since 1976, and this level of activity is anticipated to increase.

Future Installation Operations

The primary training operations have historically used the 30 year old T-34C Turbo Mentor, which is being replaced by the T-6B Texan II. The T-6B has twice the horsepower with resulting higher performance, ejection seats for increased safety, and a completely digital / glass cockpit with heads up display.

The future aircraft operations conditions at Truax Field, Waldron Field, and Cabaniss Field are based on projections identified by installation representatives as well as the assumptions used in the most recent NAS Corpus Christi Air Installation Compatible Use Zone (AICUZ) report (2009). These assumptions include:

- T-34C aircraft are replaced by T-6 aircraft;
- TC-12 aircraft are excluded from the analysis since NASCC personnel expect all multi-engine training to take place in the T-44 (Wyle Laboratories, Inc. 2008);
- Transient T-37 aircraft are replaced by T-6 aircraft; and
- Transient C-9 aircraft are replaced by C-40 aircraft.

Community Profile

City of Corpus Christi

The City of Corpus Christi is a coastal city seaport on the Gulf of Mexico in the crescent-shaped area of South Texas known as the Coastal Bend. Corpus Christi is the principal city of the tri-county Corpus Christi Metropolitan Statistical Area that includes Nueces, San Patricio, and Kleberg Counties, as well as the larger Corpus Christi-Kingsville Combined Statistical Area.

Corpus Christi began as a frontier trading post, founded in 1838-39 by Colonel Henry Lawrence Kinney. It remained an obscure settlement until July 1845, when U.S. troops under General Zachary Taylor set up camp at the settlement in preparation for war with Mexico. The city was officially incorporated on September 9, 1852. The city charter, which established the city's principles, functions, and organization of its government, was adopted in 1876.

The city is now the largest city on the Texas coast and contains the sixth largest port in the nation. Corpus Christi has experienced 14% growth in population since the year 2000, with a current (2013) population of 316,850. The city is expected to continue to grow with a population approaching 400,000 by the year 2030.

Nueces County

The City of Corpus Christi is the county seat of Nueces County. Nueces County is a political subdivision of the State of Texas and is part of the Corpus Christi Metropolitan Statistical Area. The county is bound on the north by the Nueces River and on the east by the Gulf of Mexico, Corpus Christi Bay, and Redfish Bay. Nueces County is considered an urban county with a 2010 census population of 340,226 people. This population estimate reflects a growth of approximately 8% from the year 2000 population (313,645 people). The county has a total area of 1,166 square miles, of which 836 square miles is land and 331 square miles is water. The leading industries in the county currently include tourism, agribusiness, general and heavy construction, oil and gas field services, meat packing, soft-drink bottling and canning, commercial printing, petroleum refining, ship building and repairing, and zinc refining.



San Patricio County

The lower portion of San Patricio County falls within the JLUS study area due to military operations conducted at CCIA. San Patricio County is bordered on the southeast by Nueces County and Corpus Christi Bay, and on the west by Jim Wells and Live Oak Counties. San Patricio County is also a predominantly rural unincorporated county. The county has recently experienced a slight decline in population (-3%) over the past decade, from 67,138 in 2000 to 64,804 in 2010. The target industries for economic growth in the county are a result of the county's location with a large industrial, chemical, and the petroleum / petrochemical industry.

Economic Development

The city's location on the Gulf of Mexico has made Corpus Christi a regional trade center and major industrial center of South Texas. The Port of Corpus Christi is the sixth largest port in the United States, measured by tonnage and provides access to three Class I railroads (Burlington Northern Santa Fe, Union Pacific, and Kansas City Southern). The location and extensive capabilities of the port include a 24,019-acre Foreign Trade Zone, which is the largest in the United States.

Corpus Christi is a center for petrochemical manufacturing, large-scale fabrication, aviation, marine research, maritime shipping, and tourism. It is also an emerging center for energy technologies and knowledge-based industries. According to the Corpus Christi Regional Economic Development Corporation, Corpus Christi area employment has become more diversified over the past decade; previously dependent on the energy sector (oil and gas), the military, and agriculture. The area has increased employment in the health care, teleservices (call centers), and tourism among other industries.

Please see the next page.

Study Area Identification and Data Collection

At the start of the JLUS process, the PC and TAG were engaged to assist in the identification of the JLUS study area and to assist in collecting data concerning compatibility issues. In terms of a JLUS, the study area defines the geographic area used for data collection in support of the study (the area of analysis) and the areas that are used for implementation strategies.

The study area for the NASCC JLUS was identified by working with committee members to identify areas that may impact current or future military operations, or may be impacted by military operations at NASCC's three airfields and CCIA.

From the local jurisdictions, information on planning processes, particularly as they relate to compatibility, was collected and assessed. This included comprehensive and area development plans, the unified development code, and other applicable ordinances / codes. Information was also collected relevant to current growth trends and current development applications.

Representatives from NASCC provided data and input on NASCC's current and planned facilities, training areas, and operations.

Compatibility Issues Identification

Compatibility, in relation to military readiness, is defined as the balance or compromise between community and military needs and interests. The goal of compatibility planning is to promote an environment where both entities communicate, coordinate, and implement mutually supportive actions that allow them to achieve their respective objectives.

Numerous factors influence whether community and military plans, programs, and activities are compatible or in conflict. For the compatibility assessment, a list of 24 standard compatibility factors was initially used to confirm the presence of, and establish priorities for, the key study area issues.

At the initial committee workshops and public meetings, these groups were asked to identify the location and type of compatibility issues they thought existed today, or could occur in the future. Of the 24 standard compatibility factors, a number of individual issues were identified under each of the factors.



3

COMPATIBILITY ASSESSMENT

Prioritization of Compatibility Concerns

For the compatibility factors and issues identified, the public and committees provided input on setting priorities. Three criteria were utilized to prioritize the compatibility factors:

- **Is It a Current Impact?** Each compatibility factor was considered based on its current impact to the compatibility between military and civilian activities. Each factor that had either current or potential issues related to it and were considered to pose the greatest risk to military mission and to public health and welfare constitute the highest priority.
 - **Location.** This criterion assesses the proximity of each issue in relation to activities occurring at NASCC Truax Field, Waldron Field, Cabaniss Field, and CCIA. Issues occurring near the installation or airfield are often more critical than those occurring remotely.
 - **Potential Impact.** Although a particular compatibility factor may not currently present a current threat to the installation or the community, the potential for issues to result in the future may exist. Should conditions change, adjacent or proximate development increase, or other issues become apparent, new conflicts with existing or future missions and operational activities at the four airfields in the study area could arise. Issues were considered based on their future potential using the same criteria that were established for current impact.
- With a complete list of issues to be addressed in the JLUS, the public and TAG were asked to identify the relative priority of each compatibility factor. Based on public and TAG inputs, the PC finalized the prioritization of the list, dividing the factors into four categories:
- **High-Priority.** Due to the nature of these compatibility factors and the issues identified, an immediate response is warranted. Those identified as High Priority are to be addressed during the next 1-2 years (2014 or 2015).
 - **Medium-Priority.** To be addressed 3-5 years after completion of the JLUS (complete by 2018).
 - **Low-Priority.** To be addressed within 10 years of completion of the JLUS (complete by 2023).
 - **Awareness Factors.** Awareness Factors include compatibility factors for which no issues have been identified as part of this JLUS process. Although no issues that pose a threat to NASCC's overall missions, CCIA, and the community have been identified at this time, these compatibility factors are documented in this JLUS for the purpose of maintaining awareness. These items do not require action to address at the current time, but should be monitored long-term.



HIGH PRIORITY

- Land Use
- Safety
- Interagency Coordination
- Alternative Energy Development
- Vertical Obstructions
- Frequency Spectrum Impedance and Interference

MEDIUM PRIORITY

- Noise
- Public Trespassing
- Infrastructure Expansions
- Light and Glare
- Legislative Initiatives

LOW PRIORITY

- Competition for Land and Air Space

AWARENESS PRIORITY

- Local Housing Availability
- Vibration
- Dust / Smoke / Steam
- Anti-Terrorism/Force Protection
- Air Quality
- Cultural Resources
- Water Quality / Quantity
- Threatened and Endangered Species
- Marine Environments
- Scarce Natural Resources
- Frequency Spectrum Capacity
- Ground Transportation Capacity

Evaluation of Existing Tools

Assessment of compatibility factors and identification of issues requires a baseline understanding of the existing tools that are in place to understand how they can aid in planning for compatibility, if they are currently in place and in use, and how they can be improved to address the issues identified. During this part of the JLUS development, existing tools such as plans and programs were reviewed for their applicability to the issues identified.

The purpose of this evaluation is to determine:

- **Is the issue already covered in part or all of the study area?** If adequately covered throughout the study area, no further action is needed. If a strategy is found to currently address the issue but only in a portion of the study area, can it be modified to be adopted by other stakeholders?
- **Is a strategy currently in place that only partially addresses an issue identified?** If so, how can that strategy be modified? As an alternate approach, does the strategy need to be replaced with a more effective approach?
- **Is an appropriate strategy missing currently?** In this case, what new strategies will fit in with the capabilities of the stakeholders in the study area?

High Priority Compatibility Factors and Issues

Land Use

The basis of land use planning relates to the government's role in protecting the public's health, safety, and welfare. County and local jurisdictions' growth policy / comprehensive plans and zoning ordinances can be the most effective tools for avoiding or resolving land use compatibility issues.

The NASCC JLUS assesses various components of land uses to determine compatibility between military missions and the economic goals and vitality of the region. This assessment is conducted to attain mutual goals and benefits and enable the military to continue to train its personnel to achieve optimal readiness, while still allowing for economic development in the region.

Issues

- ✓ Incompatible Future Land Use designations are within safety zones and noise contours.
- ✓ Incompatible zoning districts are located within safety zones and noise contours.
- ✓ Current regulations allow wind turbines to be located in incompatible areas, specifically unincorporated areas where land use authority does not exist near military and civilian airfields.
- ✓ Lack of land use authority to manage land uses on state owned land has the potential to present compatibility concerns.

Safety Zones

Safety Zones are areas in which development should be more restrictive, in terms of use and concentrations of people, due to the higher risks to public safety. Issues to consider include aircraft accident potential zones.

Military installations and civilian airports often engage in activities or contain facilities that, due to public safety concerns, require special consideration by local jurisdictions when evaluating compatibility. It is important to regulate land use near military and civilian airfields in order to minimize damage from potential aircraft accidents and to reduce air navigation hazards.

Issues

- ✓ There is a general lack of awareness of safety zones. The current codified process allows for incompatible development in safety zones.
- ✓ Due to geography and location of habitat, NASCC encounters increased incidences of bird strikes causing equipment destruction and unnecessary loss of wildlife.



Interagency Coordination

Interagency coordination relates to the level of interaction on compatibility issues among military installations, jurisdictions, land and resource management agencies, and conservation authorities.

Current local land use and development plans that exist for the city, such as the Comprehensive Plan and Unified Development Code, do not specifically address development issues related to the four airfields within the study area. In order to create and implement a successful JLUS, it is important that neighboring jurisdictions, as well as other local and state agencies work together with the military to discuss issues that could negatively impact one another.

Issues

- ✓ Effective regional planning would benefit from formalized inter-agency communication and coordination agreements that are inclusive of all relevant stakeholders and agencies, including the military.

Alternative Energy Development

Alternative energy refers to sources, such as wind turbines, that can be used to replace or supplement traditional fossil-fuel sources, such as coal, oil, and natural gas.

Wind turbines have two potential compatibility issues: frequency impedance and vertical obstruction. In addition to the planned and proposed developments in the vicinity of Corpus Christi, the wind industry is expected to continue to expand in the region. Wind farms are currently located around Corpus Christi and in both small and large scales. Wind farms are prohibited from locating inside Corpus Christi's city limits through its zoning authority; however, there is no zoning authority to allow for appropriate locations of wind farms outside city limits in the adjacent unincorporated areas.

Issues

- ✓ The development of wind farms in the areas proximate to Truax Field, Cabaniss Field, Waldron Field, and Corpus Christi International Airport pose frequency issues and an electromagnetic field that interfere with flight navigational systems.
- ✓ In the absence of State law to govern alternative energy development, wind farms may continue to expand and develop without local regulatory control or permitting.
- ✓ Corpus Christi has an alternative energy program that may allow residents to install small scale wind turbines on their property.

Vertical Obstructions

Vertical obstructions are created by buildings, trees, structures, or other features that may encroach into the navigable airspace used for aircraft operations (aircraft approach, transitional, inner horizontal, outer horizontal, and conical areas, as well as military training routes). These can present a safety hazard to both the public and military personnel and potentially impact military readiness.

As the areas within the JLUS study area and in the region continue to grow, new project proposals will need to be reviewed thoroughly to limit encroachment and to ensure compliance with FAR Part 77. It is important to note that Part 77 compliance is not limited to buildings and includes structures such as communication towers.

Issues

- ✓ The current cell tower policy allows potential vertical obstructions to occur.
- ✓ Temporary advertising balloons used by local businesses are permitted to extend into navigable airspace that can create an obstacle for both military and civilian air operations.

Frequency Spectrum Impedance and Interference

Frequency spectrum impedance and interference refers to the interruption of electronic signals by a structure (impedance) or the inability to distribute / receive a particular frequency because of similar frequency competition (interference).

NASCC relies on a range of frequencies for communications and support systems to perform its mission and operations. Similarly, public and private uses rely on a range of frequencies to support daily life.

Frequency spectrum impedance and interference currently occurs as a result of the extensive wind farms in the region, which can be complicated further by the continued development of wireless telecommunication facilities and growth in electronic devices.

Issues

- ✓ Radar returns of wind turbines create interference and can diminish communication and flight navigation abilities.
- ✓ Increased awareness and education of how electronic devices can interfere with military communication devices is needed.
- ✓ Corpus Christi does not have a frequency spectrum ordinance.



Medium Priority Compatibility Factors and Issues

Noise

From a technical perspective, sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. More simply stated, sound is what we hear. As sounds reach unwanted levels, this is referred to as noise. Exposure to high noise levels can have a significant impact on human activity, health, and safety.

The impact of aircraft noise is a critical factor in the planning of future land use near air facilities. Noise from aircraft operations can significantly impact areas surrounding an installation and its airfields.

Issues

- ✓ The current Future Land Use Plan allows for the development of sensitive land uses within noise contours.

Public Trespassing

This factor addresses public trespassing, either purposeful or unintentional, onto a military installation or civilian airfield. The potential for trespassing increases when public use areas are in close proximity to the installation.

Public trespassing can be a concern for both public safety and security purposes.

Issues

- ✓ Public trespassing and illegal dumping occurs along the southern perimeter of NASCC Main Base.

Transportation and Infrastructure Extensions

Infrastructure plays an interesting role in compatibility. On the positive side, infrastructure can enhance the operations of the installation by providing needed services, such as sanitary sewer treatment capacity and transportation systems. However, if enhanced or expanded, infrastructure could encourage growth into areas near the installation that might not be compatible with current or future missions.

An issue that has been raised concerning the transportation infrastructure in the city is the vertical obstructions that can result from positioning of light posts on the highway overpasses. The city does not have authority to regulate Texas Department of Transportation light standards; therefore, the city's current lighting ordinance does not address either the height or light sources of light posts on transportation routes. Elevated light poles may become hazardous to flight safety that should be avoided in the vicinity of an airfield both as a result of the light and glare they produce and the height of the structure.

Issues

- ✓ Infrastructure extensions and improvements need to be planned strategically to allow growth outside the boundaries of Naval Air Station Corpus Christi while protecting and enhancing the military mission.

Light and Glare

Light and Glare refers to manmade lighting (street lights, airfield lighting, building lights) and glare (direct or reflected light that disrupts normal vision). Light sources from commercial, industrial, and residential uses at night can cause excessive glare and illumination, which can impact the use of military night vision devices and air operations, including pilot and air traffic control vision.

Outside the installation, light and glare impacts will increase as urbanized uses move closer to NASCC, its outlying fields, and CCIA.

Issues

- ✓ Future development of sports fields/complexes, commercial uses, and industrial uses may cause light and glare issues near airfields and along flight tracks.
- ✓ Light and glare standards are codified in a way that makes it difficult for Corpus Christi to enforce and for builders and developers to follow.



Legislative Initiatives

Legislative initiatives are federal, state, or local laws and regulations that may have a direct or indirect effect on a military installation to conduct its current or future mission. They can also constrain development potential in areas surrounding the installation.

Current Texas State statute prevents counties from regulating land uses in unincorporated areas. One exception to this lack of land use control can be found in Local Government Code 241, which allows cities and counties to regulate compatible land use near airports. This is a critical issue around Cabaniss Field because the lands to the south of Cabaniss Field do not have zoning standards that apply to them. Although Corpus Christi has an extra-territorial jurisdictional area, land use regulation through zoning within this area is prohibited.

Issues

- ✓ Counties do not have the necessary authority to address incompatible land use in unincorporated areas.
- ✓ The Texas Military Preparedness Commission does not currently have a representative from the Coastal Bend/Corpus Christi.

Low Priority Compatibility Factors and Issues

Land, Air, and Sea Space

Competition for Land, Air, and Sea Spaces is defined as multiple users of both land and air spaces.

Airspace in the Corpus Christi region is a high-demand resource due to the presence of three military airfields and one civilian airport in the JLUS study area as well as the proximity of nearby military installations and airfields such as Goliad Field and NAS Kingsville.

Issues

- ✓ There is a need to maximize the use of airspace in and around Corpus Christi.

Awareness Priority Compatibility Factors and Issues**Local Housing Availability**

Local housing availability addresses the supply and demand for housing in the region, the competition for housing that may result from changes in the number of military personnel, and the supply of military family housing provided by the installation.

Vibration

Vibration is an oscillation or motion that alternates in opposite directions and may occur as a result of an impact, explosion, noise, mechanical operation, or other change in the environment. Vibration may be caused by military and / or civilian activities.

Dust / Smoke / Steam

Dust is the common term used to describe the suspension of particulate matter in the air. Dust (and smoke) can be created by fire (controlled burns, agricultural burning), ground disturbance (agricultural operations, grading), industrial activities, or other similar processes. Dust, smoke, and steam become a compatibility issue if sufficient in quantity to impact flight operations (such as reduced visibility or equipment damage). Additionally, these can be created by military activity and impact civilian areas.

Anti-Terrorism / Force Protection

Anti-Terrorism/Force Protection (AT / FP) relates to the safety of personnel, facilities, and information on an installation from outside threats. Methods to protect the installation and its supportive facilities can impact off-installation uses.



Air Quality

Air quality is defined by a number of components that are regulated at the federal and state level. For compatibility, the primary concerns are pollutants that limit visibility, such as particulates, ozone, and potential non-attainment of air quality standards that may limit future changes in operations at the installation.

Cultural Resources

Cultural resources may prevent development, apply development constraints, or require special access by Native American tribes, other groups, or governmental regulatory authorities.

Water Quality / Quantity

Water quality / quantity concerns include the assurance that adequate water supplies of good quality are available for use by the installation and surrounding communities as the area develops.

Threatened and Endangered Species

A threatened species is one that may become extinct if measures are not taken to protect it. An endangered species is one that has a very small population and is at greater risk of becoming extinct. The presence of threatened and endangered species may require special habitat development considerations and should be included early in planning processes to ensure compatibility with military missions and economic development.

Marine Environments

Regulatory or permit requirements protecting marine and ocean resources can cumulatively affect the military's ability to conduct operations, training exercises, or testing in a water-based environment.

Scarce Natural Resources

Pressure to gain access to valuable natural resources (such as oil, natural gas, minerals, and water resources) located on military installations, within military training areas, or on public lands historically used for military operations, can impact land utilization and military operations.

Frequency Spectrum Capacity

In a defined area, the frequency spectrum is limited. Frequency spectrum capacity is critical for maintaining existing and future missions and communications on installations. This is also addressed from the standpoint of consumer electronics.

Ground Transportation Capacity

Ground transportation capacity relates to the ability of existing freeways, highways, arterials, and other local roads to provide adequate mobility and access between military installations and their surrounding communities.

This section identifies and organizes the recommended actions (strategies) that have been developed through a collaborative effort between representatives of the City of Corpus Christi, Nueces County, NASCC, state and federal agencies, local organizations, the general public, and other stakeholders in the region. Because the NASCC JLUS is the result of a collaborative planning process, the recommendations in this section represent a true consensus plan; a realistic and coordinated approach to compatibility planning developed with the support of stakeholders involved throughout the process.

Upon implementation, existing and potential compatibility issues arising from the civilian / military interface can be removed or significantly mitigated. As such, the recommended strategies function as the heart of the JLUS document and are the culmination of the planning process.

The key to the implementation of the strategies presented in this JLUS is the establishment of the JLUS Coordinating Committee that oversees the execution of the JLUS. Through this Committee, local jurisdictions, NASCC, and their partners will be able to continue and strengthen their work together to establish procedures, recommend or refine specific actions for member agencies, and make adjustments to strategies over time to ensure the JLUS continues to resolve key compatibility issues through realistic strategies and implementation.

Military Compatibility Overlay District

In compatibility planning, the term Military Compatibility Area (MCA) is used to formally designate a geographic area where military operations may impact local communities, and conversely, where local activities may affect the military's ability to carry out its mission. The MCAs are geographic areas where certain recommended strategies apply.

The MCA for Corpus Christi consists of four distinct geographic areas that comprise the Overlay District where the JLUS strategies are to be applied. This technique ensures the strategies are applied to the appropriate areas, and that locations deemed to not be subject to a specific compatibility issue are not adversely impacted by regulations that are not appropriate for their location or circumstance. The four geographic areas were determined on each of the airfields within the JLUS study area and their associated aircraft activity: NASCC's Truax Field, Waldron Field, and Cabaniss Field, and for CCIA.

The MCAs are proposed as geographic overlay districts within which zoning tools can be applied to address the primary areas of concern and incorporates four proposed MCA Subzones: Safety Subzones, Noise Subzones, Vertical Obstruction Subzones, and Light Subzones. An MCA Overlay is proposed to accomplish the following purposes:



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- Promote an orderly transition between community and military land uses so that land uses remain compatible.
- Protect public health, safety, and welfare.
- Maintain operational capabilities of military installations and areas.
- Promote the awareness of the size and scope of military training areas to protect areas separate from the actual military installation (i.e., critical air space) used for training purposes.
- Establish compatibility requirements within the designated area, such as requirements for sound attenuation, real estate disclosure, and aviation easements.

Implementation of this Overlay would require the city to amend City of Corpus Christi Unified Development Code Article 6 by replacing Article 6.5 AICUZ with Military Compatibility (MCA) Overlay. The MCA Overlay (illustrated on Figure 2) would be comprised of subzones that will have specific regulations associated with each subzone.

There are four recommended subzones for each of the airfield MCAs. These subzones (described in the following paragraphs) are:

- Safety Subzone
- Noise Subzone
- Vertical Obstruction Subzone
- Light Subzone

Figure 2 shows the four MCA overlays (areas) and Figures 3 – 6 provide a zoomed in look at the subzones in each MCA overlay.

Safety Subzone

The proposed Safety Subzone would regulate compatible land use types and densities / intensities within the CZ and APZs 1 and 2 of NASCC Truax Field, Waldron Field, Cabaniss Field, and CCIA. The current location of each of these safety subzones is based on

the airfield layout and air operations identified in NASCC's 2009 AICUZ and the CCIA's 2012 Airport Layout Plan (ALP). The boundaries of each subzone may need to be amended when the AICUZ and ALP are updated.

The extent of the safety subzone is based upon flight patterns at NASCC's Truax, Cabaniss, and Waldron Fields and that of CCIA. A safety subzone is needed in order to prevent the development of incompatible land uses in areas with the greatest potential for an accident to occur. These safety zones were identified as a result of the Navy's guidance that defines APZs as areas where an aircraft accident is most likely to occur (if one was to occur). APZs follow departure, arrival, and pattern flight tracks and are based upon analysis of historical data.

Compatibility guidelines preclude land uses that concentrate large numbers of people (such as apartments, churches, and schools) from being constructed within the APZs. While the likelihood of a mishap is remote, the Navy recommends land uses within APZs be minimal or low density to ensure the maximum protection of public health and property.

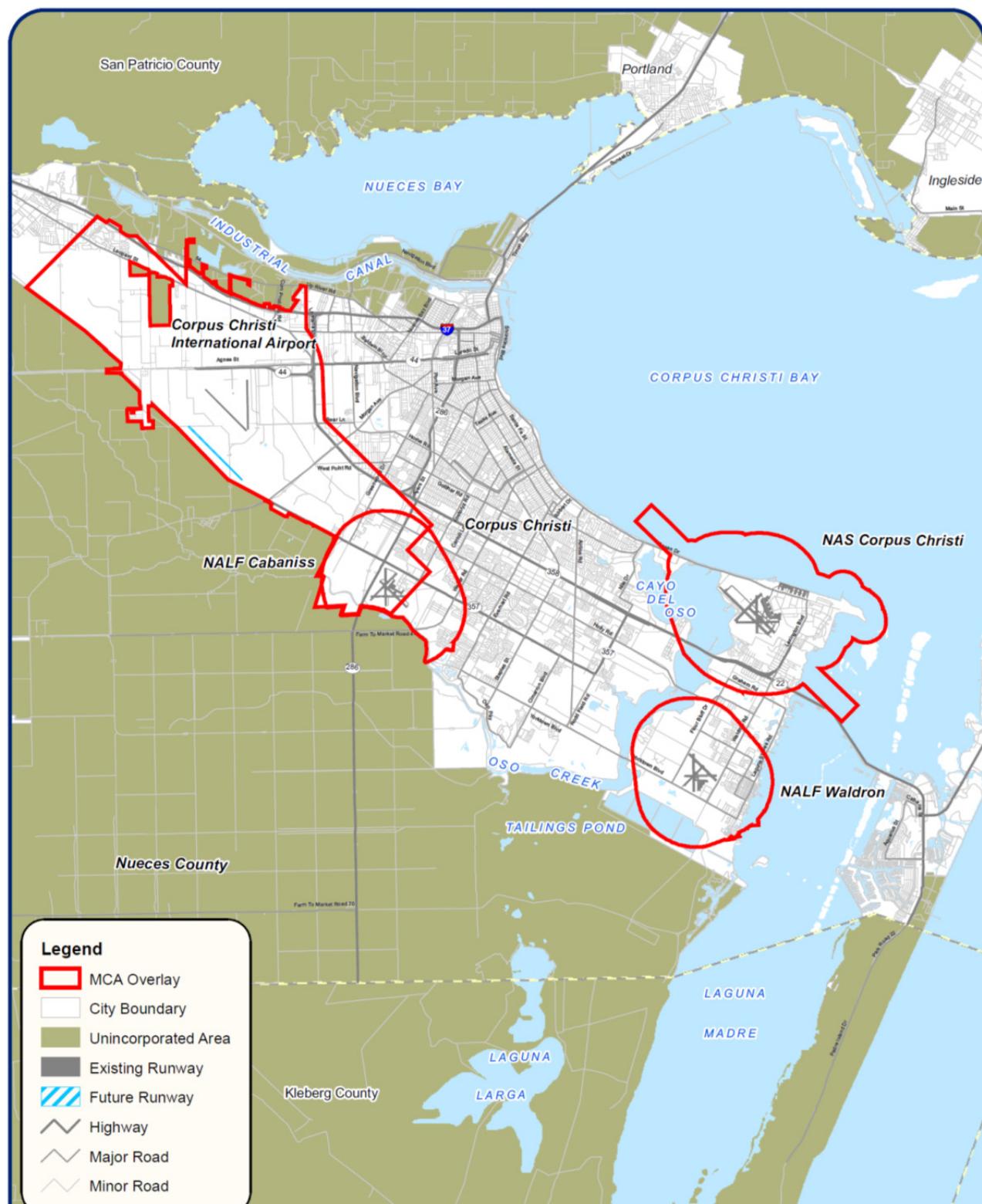
Within the Clear Zone, most land uses are incompatible with aircraft operations. It is recommended that no development be located within clear zones. Within APZ I and APZ II, a variety of land uses are considered compatible; however, uses that gather large groups of people in one area (schools, apartments, etc.) should be restricted because of the greater accident risk in these areas.

Certain single family residential uses at a low density (1 to 2 units per acre) can be compatible when located within APZs. Other compatible uses include agricultural uses, limited intensity office / retail, agricultural, light industrial, and outdoor parks and recreation.



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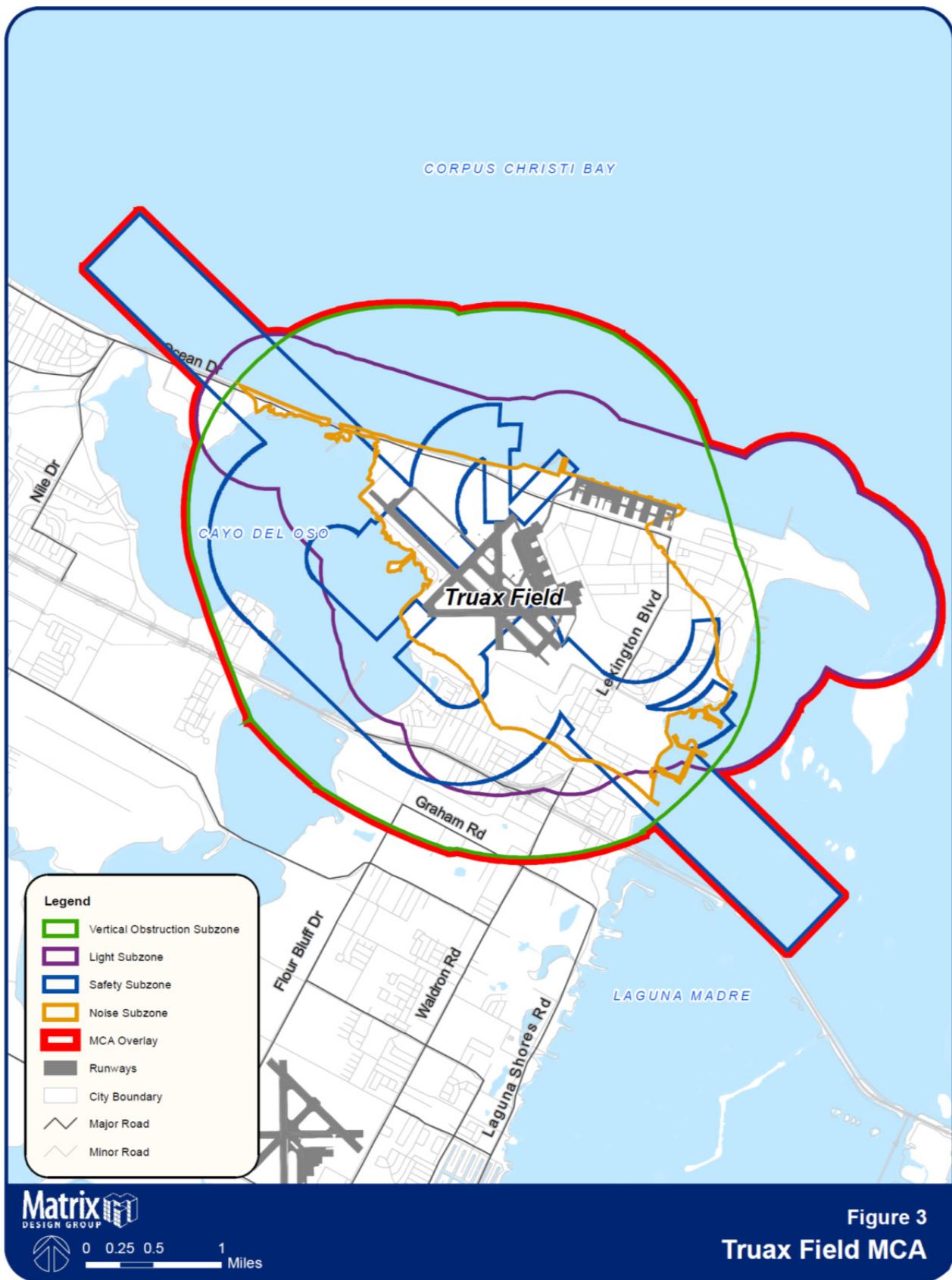


Matrix
DESIGN GROUP



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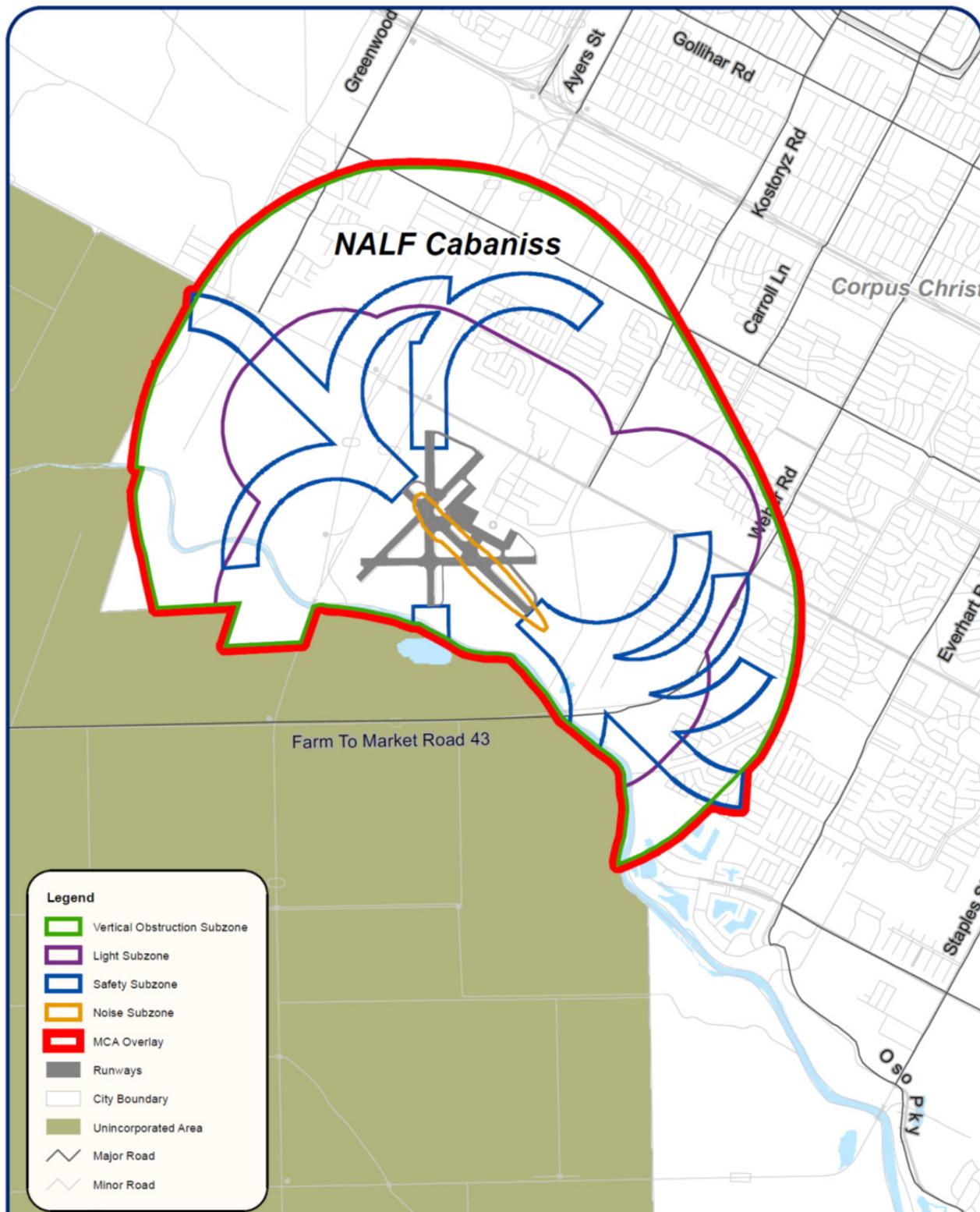
Figure 2
MCA Overlay





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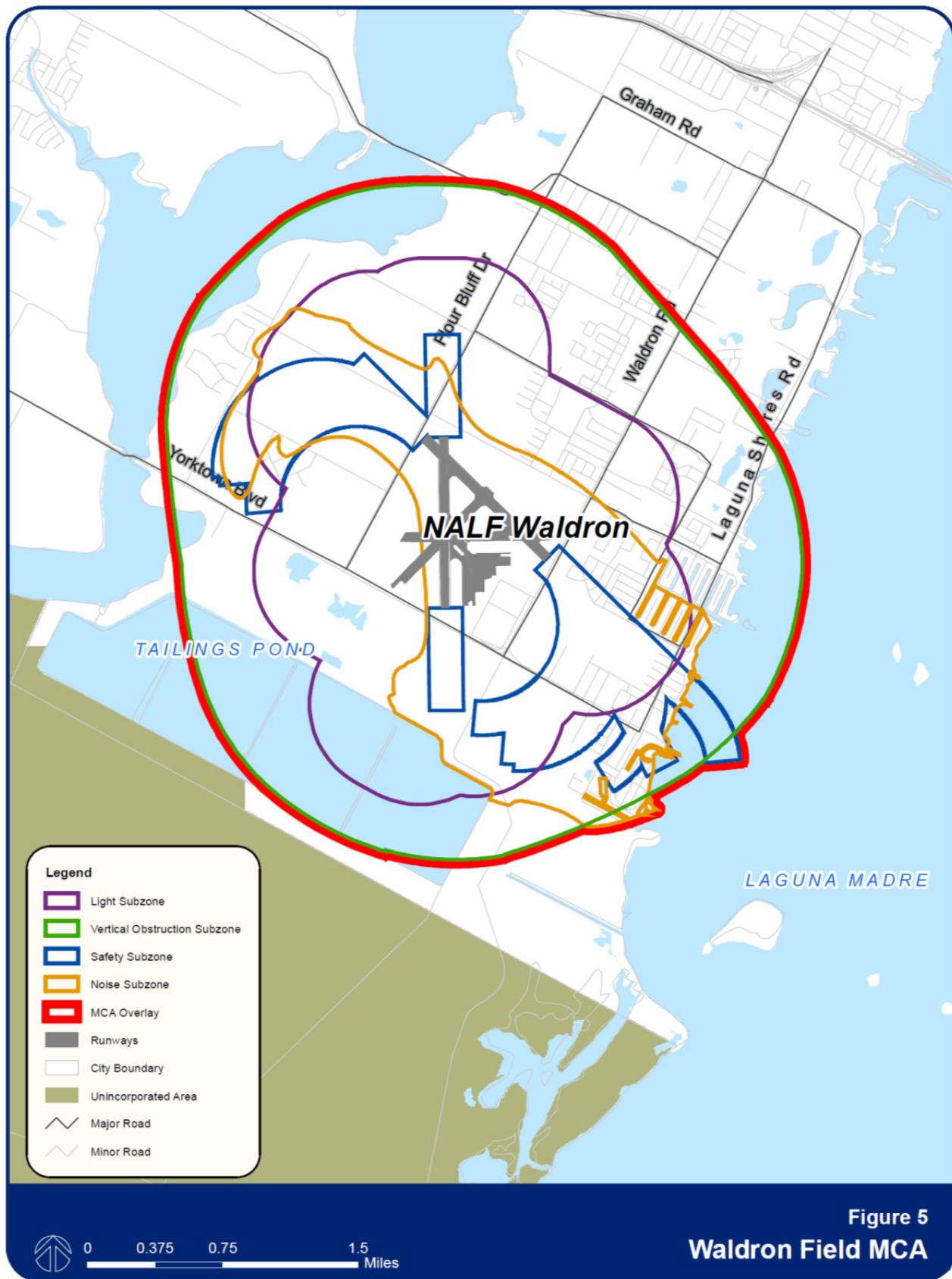


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Figure 4
Cabaniss Field MCA





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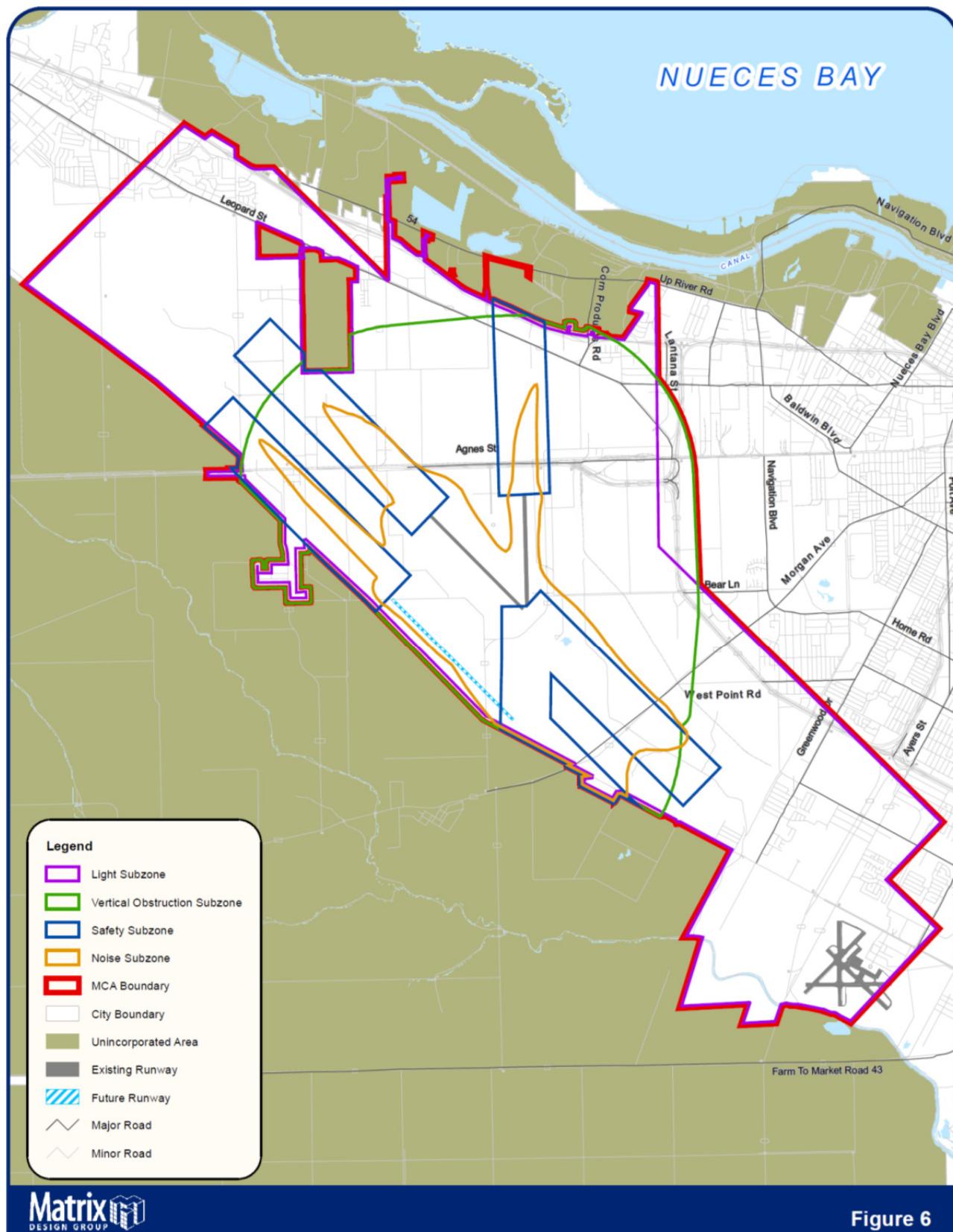


Figure 6
Corpus Christi International Airport MCA



Noise Subzone

Noise is typically a concern to the public surrounding most military installations. The Noise Subzone includes all lands located off-installation that fall within the noise contours greater than 65 dB DNL noise levels associated with military and civilian aircraft activities. Residential developments and other noise sensitive land uses within this MCA subzone may be subject to sound attenuation measures to reduce interior noise impacts to achieve a maximum interior noise level of 45 DNL.

Without a requirement for sound attenuation via building code requirements, certain uses such as residential uses, uses that congregate large groups, schools, healthcare facilities, and outdoor parks and recreation are not compatible within areas that experience noise levels of 65 DNL or greater. Uses that are compatible within airport noise contours are office / retail and manufacturing / industrial when interior noise levels experienced are less than 70 DNL. The local building code can be used to ensure that noise-attenuation measures are implemented for all new development within the Noise Subzone. Although this tool will not prevent incompatible development, building codes can ensure compatibility to the greatest extent possible.

Vertical Obstruction Subzone

The purpose of the Vertical Obstruction Subzone is to regulate height of all structures and buildings within the area defined by FAA guidance and Navy AICUZ instructions known as imaginary surfaces. The imaginary surfaces are a 3-D geographic area comprised of approach and departure airspace corridors and safety buffers. Vertical obstructions height issues are a major concern to flight operations and training due to the potential for the building or structure to extend into navigable airspace, which would impede safe flight operations putting both the pilots and the citizens at risk of an aircraft crash. Vertical obstructions that can affect flight safety include, but are not limited to, cell towers, power lines, wind turbines, and buildings.

The flight operations approach and departure areas are regulated by stringent height restrictions defined by FAA and military regulations. This Vertical Obstruction Subzone is based on the FAA imaginary surfaces map horizontal area which restricts development of buildings and structures from 0 feet to 150 feet above mean sea level. The Vertical Obstruction Subzone is intended to denote the importance of following the FAA Imaginary Surfaces with regard to structure height and is not intended to reduce or change FAA guidance with regard to maximum height of structures.

Light Subzone

The Light Subzone addresses areas that may generate ambient light and the direction of light that have the potential to affect night training missions, operations, and controller vision at Truax Field, Waldron Field, and Cabaniss Field, and the CCIA. The Light Subzone around Truax Field, Waldron Field, and Cabaniss Field is comprised of a one mile buffer around the perimeter of each airfield. The Light Subzone around CCIA is based on the controlled compatible area guidance provided in section 241.014 of the Texas State Local Government Code, which allows jurisdictions “to whose benefit an airport is used in the interest of the public or in which an airport owned or operated by a defense agency of the federal government or state is located” to create a “joint airport zoning board”. This area encompasses a rectangle bounded by lines located no farther than 1.5 statute miles from the centerline of an instrument or primary runway and lines located no farther than five statute miles from each end of the paved surface of an instrument or primary runway.

Although lighting standards are provided in Article 7.6 of Corpus Christi’s Unified Development Code, the standards do not address lighting regulations that achieves compatibility with the military missions and flight operations. A detailed evaluation and update to lighting standard regulations, with a focus on areas near airports is recommended.



The direction of ground lighting should not interfere with an aviator's vision, with night vision instrumentation or equipment, or with the sight of any air traffic controllers in traffic control towers. Outdoor lighting should also not cause pilot confusion with landing approach flight patterns. The Light Subzone will apply to new development proposed to be constructed within the Light Subzone of each airfield. This requirement would subject new development to regulations that include fully-shielded and / or full-cutoff light fixtures. The revised ordinance will incorporate distinctive light and glare regulations to protect the operational environment within the Lighting Subzone. These controls should be designed to reduce the amount of light that spills into surrounding areas and impacts regional ambient illumination.

Joint Airport Zoning Board: Controlled Compatible Area

Texas Local Government Code Chapter 241 allows jurisdictions to create a zoning board to regulate land uses within a specific geographic area identified as the Controlled Compatible Land Use Area within unincorporated areas. Although the NASCC JLUS study area is controlled by a Joint Airport Zoning Board (JAZB) and associated ordinances, the ordinances only regulate height and not land use. Section 241.014 of the Texas State Local Government Code allows jurisdictions "to whose benefit an airport is used in the interest of the public or in which an airport owned or operated by a defense agency of the federal government or state is located" to create a "joint airport zoning board". As an entity, the board has the power to adopt, administer, and enforce compatible land use regulations within a statutorily defined area. As per statute, the area of authority can extend no farther than a rectangle bounded by lines located no farther than 1.5 statute miles from the centerline of an instrument or primary runway and lines located no

farther than five statute miles from each end of the paved surface of an instrument or primary runway.

Per Texas Local Government Code Chapter 241, the City of Corpus Christi and the counties of Nueces and San Patricio could reconstitute the JAZB to regulate through zoning the type of land use, building requirements, and height restrictions within the Controlled Compatible Land Use Areas (Controlled Area) for CCIA. In addition, the JAZB could also address land use, building requirements, and height restrictions for Waldron Field and Cabaniss Field. The areas for which the JAZBs would have regulatory authority per state statutes, is illustrated in Figure 7: JAZB Boundaries.

Per the Local Government Code 241, each jurisdiction participating in the JAZB shall have two voting members on the JAZB. NASCC may have two members on the JAZB and CCIA may have one ex-officio member. In order to implement this recommendation, each participating jurisdiction (Corpus Christi, Nueces County, and San Patricio County) must act by resolution in creating the JAZB, appoint members to the JAZB, and state that the action to establish the JAZB is in collaboration with the other jurisdictions.

Implementation of the JAZB will require development and adoption of a controlled compatible land use area boundary and adoption of an airport zoning map and airport zoning ordinance for the area within the JAZB boundaries. The JAZB would then have the authority to adopt, administer, and enforce the JAZB Airport Zoning Ordinance and accompanying zoning map within the JAZB limits.

An Airport Zoning Ordinance for the Controlled Compatible Land Use Areas regulates the type of land uses, density and intensity of uses, types of buildings and structures, building requirements and the heights of buildings and structures. This new JAZB Airport Zoning Ordinance would replace the existing Airport and Military Zoning Ordinance.

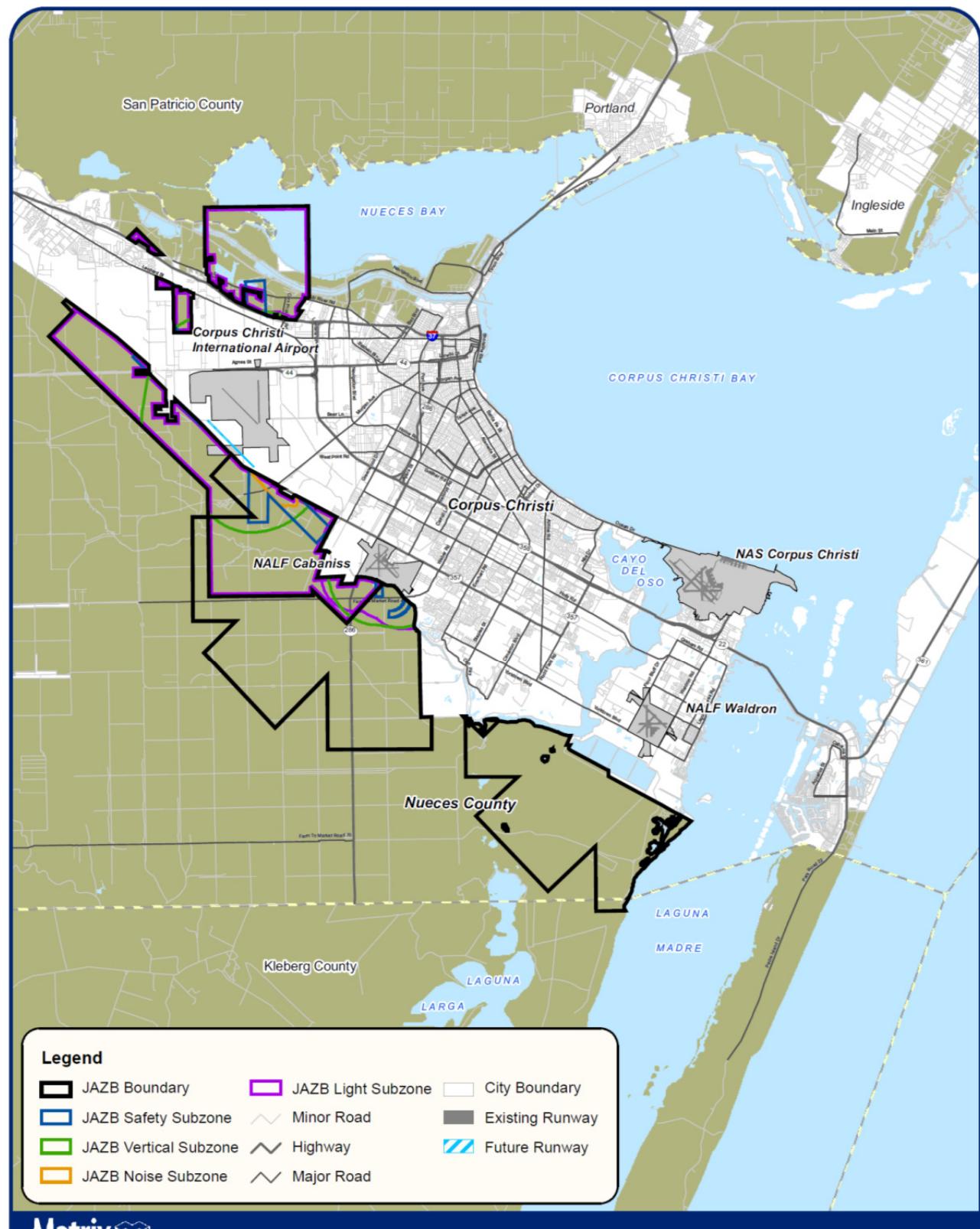


Figure 7
JAZB Boundaries



In addition to creating the Airport Zoning Ordinance and Zoning Map, the JAZB is required to develop a rezoning application process, structure, and fee structure. The process of administering rezoning and development applications could be a resource burden since the board is not supported by paid administration and planning assistance.

In order to maximize efficiencies among the affected jurisdictions, it is recommended that the JAZB consider having Corpus Christi be the development application administrator and adopt the city's development application processes and fee structure. With this scenario, the city would be responsible for processing the JAZB development applications and creating the JAZB Public Hearing agenda's and agenda packets for the JAZB members.

As an alternative, Chapter 241.013 of the Local Government Code allows the city's Planning Commission to take responsibility to regulate through zoning the land uses within the Controlled Area outside city limits. While not required by state statute, it would be desirable if both counties requested the city to take this approach to compatible land use in the Controlled Area.

JAZB Controlled Area Subzones

The recommended subzones within the JAZB Controlled Area are the areas corresponding to the safety zones, noise contours, vertical obstruction hazards areas, and light protection areas, referred to as the MCA Subzones for the areas within city limits, that extend into the county within the jurisdictional area of the JAZB. These areas are depicted on Figures 8 through 10 for each of the airfields.

- Safety Subzone
- Noise Subzone
- Vertical Obstruction Subzone
- Light Subzone

JAZB Safety Subzone

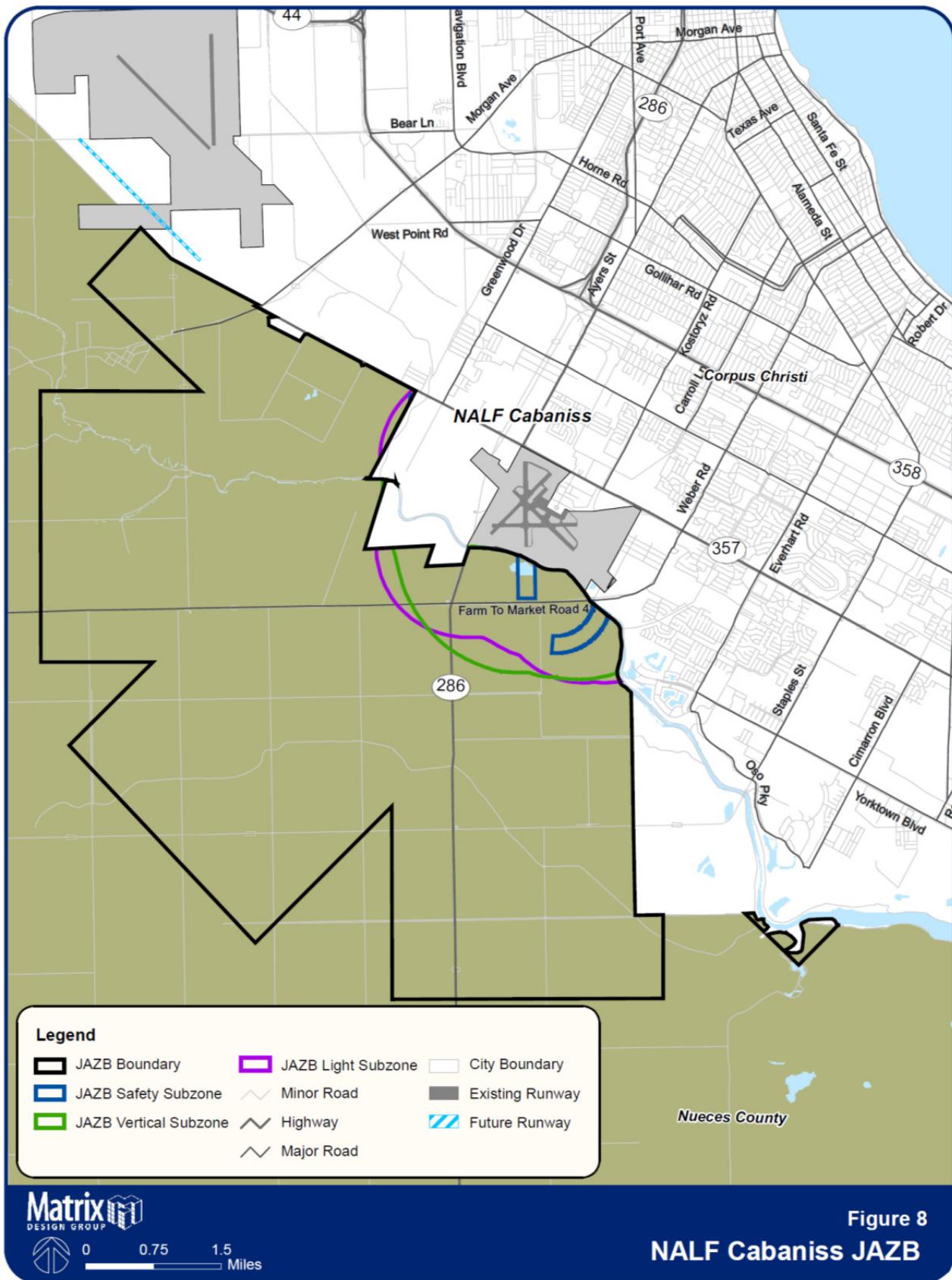
The proposed JAZB Safety Subzone would regulate compatible land use types and densities / intensities within the accident potential zone that extends into

the county within the JAZB limits. Based on current conditions, this JAZB Safety Subzone would apply to Cabaniss Field and CCIA. The safety zones of Waldron do not extend past city limits and thus there is no need for Waldron to have a JAZB Safety Subzone. The current location of each of these safety subzones is based on the airfield layout and air operations identified in NASCC's 2009 AICUZ and the CCIA's 2012 Airport Layout Plan (ALP). The boundaries of each subzone may need to be amended when the AICUZ and ALP are updated.

A safety subzone is needed in order to prevent the development of incompatible land uses in areas with the greatest potential for an accident to occur. Compatibility guidelines preclude land uses that concentrate large numbers of people (such as apartments, churches, and schools) from being constructed within the APZs. While the likelihood of a mishap is remote, the Navy recommends land uses within APZs be minimal or low density to ensure the maximum protection of public health and property. These safety zones were identified as a result of the Navy's guidance that defines APZs as areas where an aircraft accident is most likely to occur (if one was to occur). APZs follow departure, arrival, and pattern flight tracks.

JAZB Noise Subzone

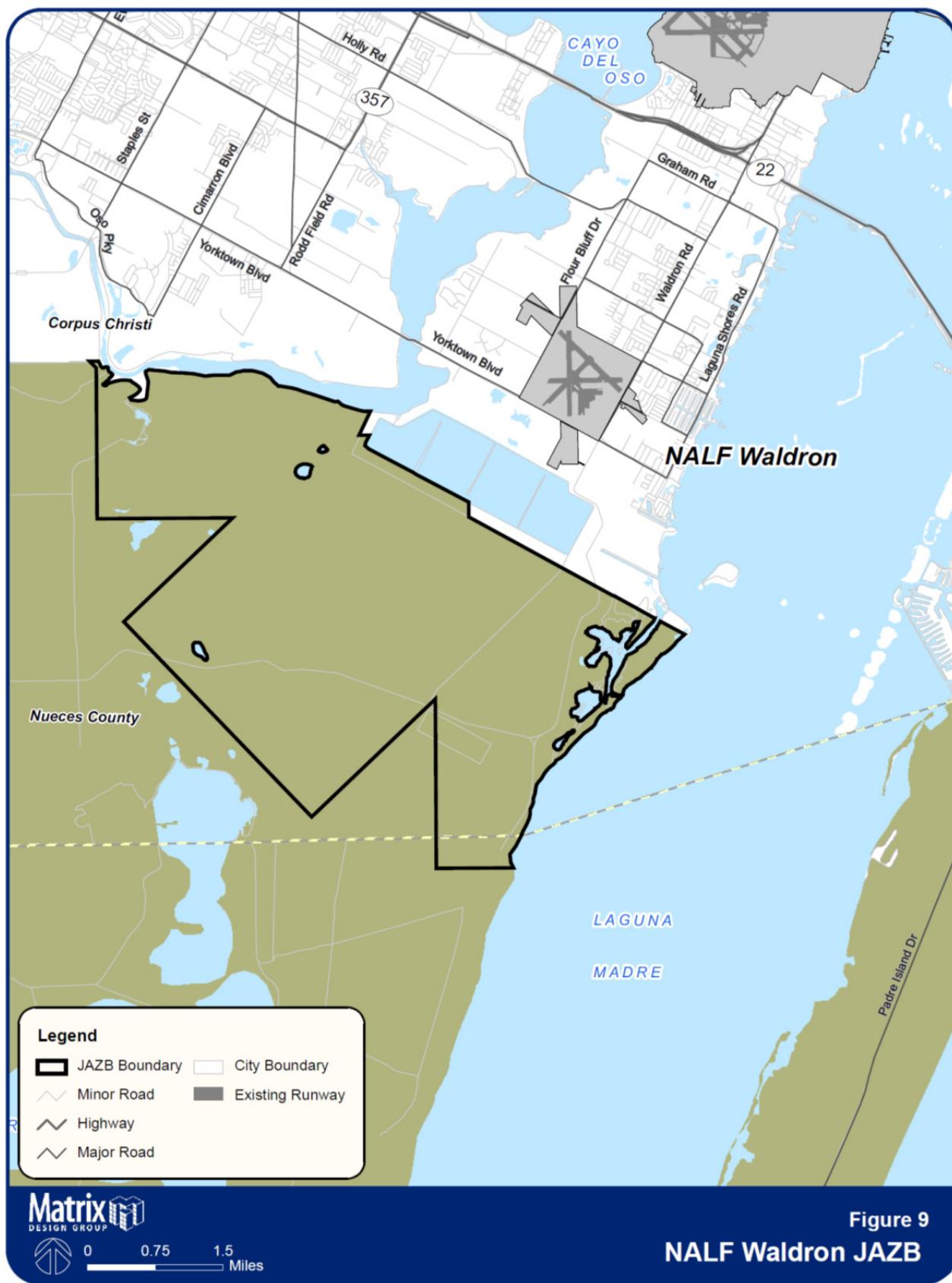
Noise is typically a concern to the public surrounding most military and civilian airfields. The JAZB Noise Subzone includes all lands located off-installation that extend beyond city limits and are contained within the JAZB Controlled Area, and which fall within the noise contours greater than 65 dB DNL noise levels associated with military and civilian aircraft activities. Based on current conditions, the JAZB Noise Subzone would apply to Cabaniss Field and CCIA as the noise contours associated with Waldron do not extend past city limits into the Controlled Area. Residential developments and other noise sensitive land uses within this JAZB Noise Subzone may be subject to sound attenuation measures to reduce interior noise impacts to achieve a maximum interior noise level of 45 dB.

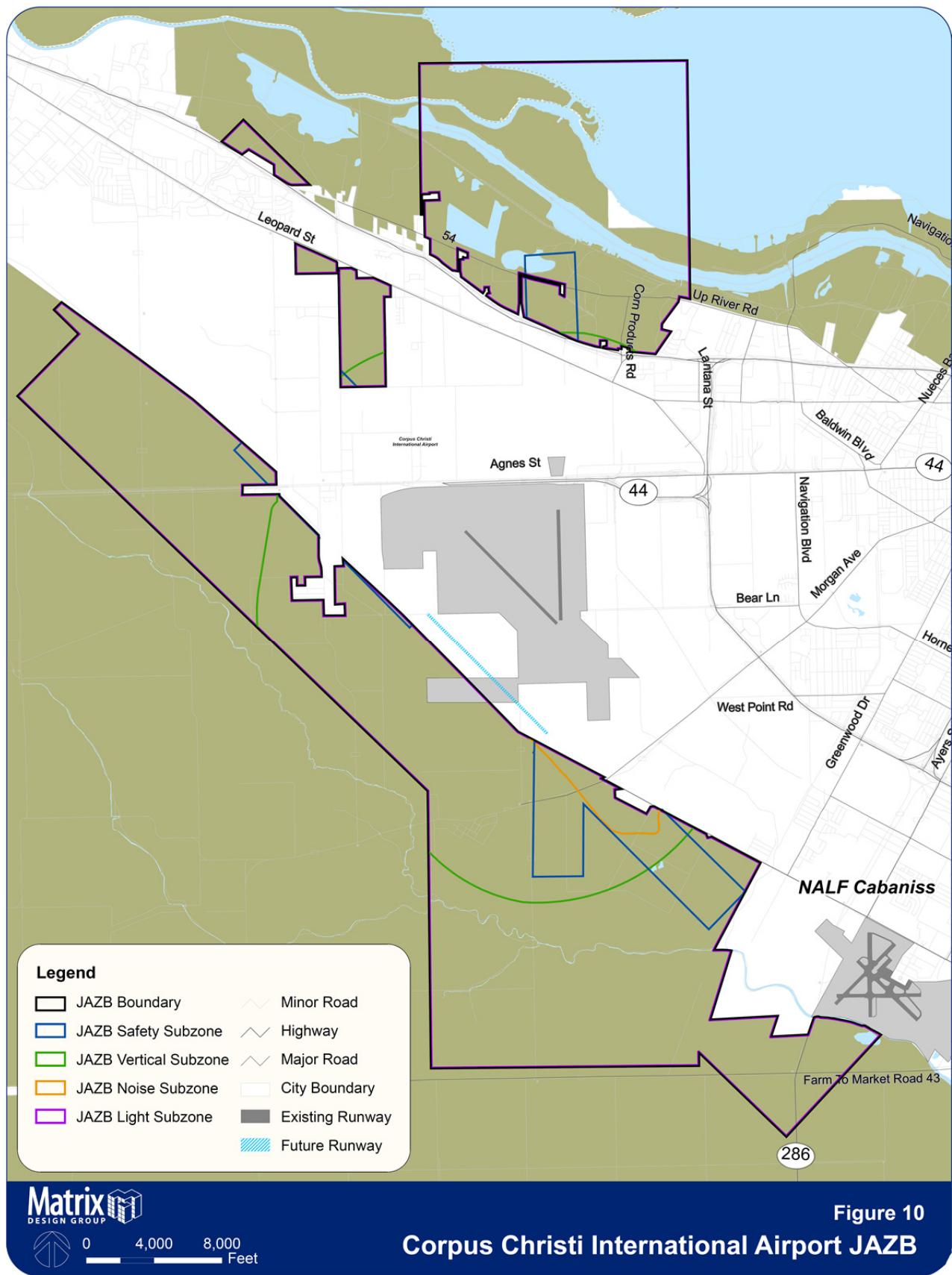




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Without a requirement for sound attenuation via building code requirements, certain uses such as residential uses, uses that congregate large groups (assembly areas, churches, auditoriums), schools, and healthcare facilities, are not compatible within areas that experience noise levels of 65 DNL or greater. Uses that are compatible within airport noise contours are office / retail and manufacturing / industrial when noise levels experienced are less than 70 DNL.

The JAZB may elect to utilize the city's existing building code to ensure that noise-attenuation measures are implemented for all new development within the JAZB Noise Subzone.

JAZB Vertical Obstruction Subzone

The purpose of the Vertical Obstruction Subzone is to regulate height of all structures and buildings that obstruct navigable airspace as defined by FAA guidance and Navy AICUZ instructions known as imaginary surfaces. The imaginary surfaces are a 3-D geographic area comprised of approach and departure airspace corridors and safety buffers. Vertical obstructions height issues are a major concern to military flight operations and training due to the potential for the building or structure to extend into navigable airspace, which would impede safe flight operations putting both the pilots and the citizens at risk of an aircraft crash. Vertical obstructions that can affect flight safety include, but are not limited to, cell towers, power lines, wind turbines, and building heights.

The flight operations approach and departure areas are regulated by stringent height restrictions defined by FAA and military regulations, thus this subzone restricts new development of buildings and structures from 0 feet to 150 feet above mean sea level.

Based on current conditions, this JAZB Subzone would apply to Cabaniss Field and CCIA.

JAZB Light Subzone

The JAZB Light Subzone addresses areas that may generate ambient light and the direction of light that

have the potential to affect night training missions and flying operations at Cabaniss Field and the CCIA and put both the pilots and the citizens on the ground in danger of an aircraft mishap. The Light Subzone is comprised of a one-mile buffer around the perimeter of Cabaniss Field and extends to the boundary of the Controlled Area for CCIA to assist in protecting the community's health, safety, and welfare.

The direction of ground lighting should not interfere with an aviator's vision, with night vision instrumentation or equipment, or with the sight of any air traffic control towers in operation. Outdoor lighting should also not cause pilot confusion with landing approach flight patterns. The JAZB Light Subzone requirements would apply to new development as well as any future street light poles that are proposed to be constructed within the areas outside of city limits that are contained within the Controlled Area. This requirement would subject new development to regulations that include fully-shielded and / or full-cutoff light fixtures.

JLUS Implementation Plan

The JLUS Implementation Plan provides a detailed road map of the JLUS recommended strategies and actions. The Naval Air Station (NAS) Corpus Christi JLUS Implementation Plan recommends strategies that assist in resolving and/or minimizing the compatibility issues identified in the previous sections of this JLUS.

The Implementation Plan consists of the recommended strategies identified on the following pages. These strategies are organized by stakeholder who would be responsible for taking the lead on implementation of these items as well as by the Compatibility Factors and Issues.

Table 2	<i>High Priority Strategies (see page 42)</i>
Table 3	<i>Medium Priority Strategies (see page 53)</i>
Table 4	<i>Low Priority Strategies (see page 56)</i>

How to Read the JLUS Implementation Plan

In an effort to list and describe the strategies in an efficient manner, they have been arranged in a series of tables to correspond with their priority grouping, as presented above. The issue within each factor topic is presented first to provide a linkage between the strategy and the condition it is to resolve or minimize. Each table is organized in the following manner with the column headings identified and described below:

Issue

The issue # is an alpha-numeric number that provides a unique reference for each specific issue and strategy.

Type of Strategy

This column identifies the type of strategy being recommended per the type of strategy tool. The column contains one word from the following tool types:

Acq	Acquisition
AP	Airport Master Plan/Airspace Study
BP	Base Planning
Bldg	Building Codes/Construction Hazards
CIP	Capital Improvement Program
Comm	Communications

Plans	Comprehensive/ General/Master Plans
Hab	Habitat Conservation Tools
Leg	Legislative Tools
MOU	Memorandum of Understanding
Disc	Real Estate Disclosures
Zon	Zoning Ordinance/Building Codes
MOA	Memorandum of Agreement

Geographic Area

This column indicates the applicable location where the strategy would apply. A specific Military Compatibility Area (MCA) is identified as the strategy relates to an area surrounding Truax Field, Cabaniss Field, Waldron Field, CCIA, or the area extending beyond the ETJ within the area that would be subject to the authority of the Joint Airport Zoning Board (JAZB), identified as the controlled compatible area (CCA). The MCAs designations are:

MCA	MCA is used when a strategy applies to all four airfields within the areas depicted on Figure 2.
Truax	This includes areas proximate to Truax Field (NASCC main base) as depicted on Figure 3.



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	Cabaniss Waldrone CCIA CCA Strategy	Timeframe This column indicates the projected timeframe of each strategy. The symbols are described below: <ul style="list-style-type: none"> ● 1 to 2 Years ○ 3 to 5 Years ◆ 6 to 10 Years ❖ Continuous Compatibility Issue Responsible Party This column lists the entity primarily responsible for implementing the strategy and the partner entities to enhance its successful achievement. The symbols are described below: <ul style="list-style-type: none"> ■ Primary Entity □ Partner Agency <p>The Responsible Partners are identified by acronym in the heading at the top of each page. They are identified below in the order they appear.</p> <table border="0"> <tr> <td>Corpus Christi</td><td>City of Corpus Christi</td></tr> <tr> <td>Nueces County</td><td>Nueces County</td></tr> <tr> <td>NASCC</td><td>Naval Air Station Corpus Christi</td></tr> <tr> <td>CCIA</td><td>Corpus Christi International Airport</td></tr> <tr> <td>DOD</td><td>Department of Defense</td></tr> <tr> <td>DOD ESC</td><td>Department of Defense Energy Siting Clearinghouse</td></tr> </table>	Corpus Christi	City of Corpus Christi	Nueces County	Nueces County	NASCC	Naval Air Station Corpus Christi	CCIA	Corpus Christi International Airport	DOD	Department of Defense	DOD ESC	Department of Defense Energy Siting Clearinghouse	TXMPC TXDOT OGA TAMUCC ISDs Legislature AEDC Realtors FAA SECO San Patricio County	Texas Military Preparedness Commission Texas Department of Transportation Office of Government Affairs Texas A&M University – Corpus Christi Independent School Districts Texas State Legislature Alternative Energy Development Community Realtor Associations and Organizations Federal Aviation Authority State Energy Coordinating Office San Patricio County
Corpus Christi	City of Corpus Christi															
Nueces County	Nueces County															
NASCC	Naval Air Station Corpus Christi															
CCIA	Corpus Christi International Airport															
DOD	Department of Defense															
DOD ESC	Department of Defense Energy Siting Clearinghouse															
	<p>This includes areas proximate to Cabaniss Field as depicted on the Figure 4.</p> <p>This includes areas proximate to Waldron Field as depicted on Figure 5.</p> <p>This focus area includes the Corpus Christi International Airport and its immediate surroundings as depicted on Figure 6.</p> <p>The Controlled Compatible Area (CCA) is the area that is located outside of the city's ETJ and would be controlled by the adoption of a Joint Airport Zoning Board Ordinance as shown on Figures 7 through 10.</p> <p>This column contains a brief summary of each strategy and a statement(s) that provide a description as appropriate.</p>															

Table 2. High Priority Strategies

Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DODESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
LAND USE																					
LU-1	Issue:		Incompatible Future Land Use designations are within AICUZ areas for all airfields, including Clear Zones, Accident Potential Zones 1 and 2, and noise contours.																		
LU-1A	Plans	CCA/ ETJ	Update the Corpus Christi Comprehensive Plan Future Land Use Element to address land use compatibility near military and civilian airports.	●	■																
LU-1B	Plans	MCA	Update the Corpus Christi Comprehensive Plan Policy Statements element by adding policies on the need for the Military Compatibility Overlay (MCA) including appropriate compatibility land uses within the MCA.	●	■		□														
LU-1C	Plans	MCA	Update the Corpus Christi Comprehensive Plan to include a Military Sustainability Master Plan Element that includes military sustainability policies addressing land use, economic development, transportation, and infrastructure.	●	■																
LU-2	Issue:		Several parcels located within AICUZ areas for all airfields, including Clear Zone, Accident Potential Zones 1 and 2, and noise contours, are designated with incompatible zoning districts.																		
LU-2A	Zon	MCA	Establish a Land Use Military Compatibility Area (MCA) Overlay District within the Corpus Christi Unified Development Code. The regulations would address compatible land uses, noise mitigation, lighting hazards, vertical obstructions, and electromagnetic hazards.	●	■		□														



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Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
LU-2B	Zon	CCA	<p>Update and or replace the Airport Zoning Ordinance and the Military Airport Zoning Ordinance as appropriate using the authority in Local Government Code 241. The revised regulations should address all military and civilian airport facilities to achieve compatible land use.</p> <p>Objectives shall be to create a Joint Airport Zoning Board and or provide the Corpus Christi Planning Commission with authority for regulating compatible land use development inside and outside city limits to protect airports; establish a Controlled Compatible Area and subzones or districts to regulated uses. Permitted uses in each subzone or district will be based on Air Installation Compatible Use, FAA and TxDOT guidelines.</p>	●	■	□	□													□	
LU-2C	Zon	MCA	Update and amend the Corpus Christi Unified Development Code to include two new zoning districts proposed for use under airport flight zones, or next to refineries or any other area that could pose potential hazards to adjacent uses. The Commercial Compatible and Industrial Compatible Districts should not permit any residential uses or uses that are likely to congregate large groups of people.	●	■			□													
LU-2D	Zon	MCA	Update the Corpus Christi UDC Article 6.5: Special Zoning Districts. The update will include a land use compatibility table identifying which land uses are allowed, conditionally allowed, or not allowed. Height limitations will be included for each type of use.	●	■			□													
LU-2E	Plans	MCA	Collaborate with each of the five school districts that encompass military or civilian airports to modify and develop School District Master Plans that address compatible under airport flight patterns. The central focus of these plans will be to propose the location of new schools in areas that will minimize the effects of aircraft activity (i.e., noise, and location within a safety zone) on schools. A component of these plans will be the relocation of Elliot Middle School out of the Accident Potential Zone when funding and a new site are available and procured.	○	■									□							

Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
LU-3	Issue:	Cabaniss	There is a risk for additional incompatible development around Cabaniss Field, with the primary areas of concern being within APZs to the south of Runway 35 and the areas zoned as residential to the southeast of Runway 31.																		
LU-3A	Plans	Cabaniss	Modify the Corpus Christi Future Land Use Plan/Map. The Plan and Map should allow for compatible light industrial or commercial development, agricultural uses, parks, and rural residential for areas around Cabaniss airfield. Schools or other uses that are likely to congregate large groups of people will be excluded as allowable uses within MCAs.	●	■																
LU-3B	Zon	Cabaniss	Rezone undeveloped property around Cabaniss Field to ensure compatibility of new development. Consider rezoning undeveloped lands around Cabaniss Field with compatible uses per 2009 AICUZ guidelines and the updated UDC Article 6.5 compatible land uses, such as light industrial and commercial that are complementary with the military mission of NASCC, promote the health and safety of the community, and provide an overall economic benefit to region.	●	■	□															
LU-3C	Zon	Cabaniss	Create a new Industrial District that would exclude incompatible land uses within this zoning district, consistent with the updated UDC Article 6.5 as it applies to MCA Subzones. Update the Corpus Christi UDC with a new Industrial Compatible District that provides for a wide range of industrial uses in appropriate locations, which can provide a buffer between residential uses and intensive public facilities, private businesses and manufacturing uses that have the potential to present a threat to public safety and welfare. Uses that would not be permitted include uses that congregate large groups of people, unscreened outdoor storage, or uses that create nuisance factors of dust, odor and noise associated with certain business and manufacturing uses.	●	■																
LU-3D	Acq	Cabaniss	Develop a plan for annexation of lands near Cabaniss Field. Pursue annexation of land south of Cabaniss Field to assure compatibility. The city should prioritize this land in its annexation plan to promote safety through the use of the city land use controls.	○	■	□															



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Issue	Type of Strategy	Geographic Area	JLUS Strategy										Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMICC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
LU-4	Issue:		There is a risk for additional incompatible development around NAS CC Truax Field, primarily in four identified areas: North Flour Bluff (Marina Village Mobile Home Park), South Bay, Flour Bluff & Encinal Farm and Garden Tracts, and Ward Island (Texas A&M University housing area).																											
LU-4A	Plans	MCA	Update the Corpus Christi Comprehensive Plan to exclude further development of incompatible land uses within the MCAs. Medium and high density uses will be eliminated from the Future Land Use Map in areas located within the MCA Land Use Safety Subzones.	●	■																									
LU-4B	Zon	MCA	Rezone currently undeveloped parcels to ensure compatibility based on AICUZ guidance and the updated UDC Article 6.5 containing a land use compatibility table identifying which land uses are allowed, conditionally allowed, or not allowed. Height limitations will be included for each type of use.	●	■		□																							
LU-5	Issue:		There is a risk for additional incompatible development around NALF Waldron, with the three primary areas of concern being Flour Bluff & Encinal Farm and Garden Tracts, Summer Breeze Estates and Golden Oaks Estates, the Southeast Neighborhoods of Yorktown Heights and Bayside Acres, and Caribbean Place.																											
LU-5A	Plans	MCA/ Waldron	Update the Corpus Christi Comprehensive Plan to include the MCA as an overlay area and revise the Future Land Use Plan to include appropriate compatibility land uses within the MCA.	●	■																									
LU-5B	Zon	MCA/ Waldron	Eliminate the potential for incompatible development to occur through the use of a rezoning to the area, including a restriction of density and consistent with the updated UDC Article 6.5 guidelines.	●	■																									
LU-6	Issue:		Current regulations allow wind turbines to be located in incompatible areas, specifically unincorporated areas where land use authority does not exist near military and civilian airfields.																											
LU-6A	Plans	MCA	Develop a plan to identify preferable locations for the siting of alternative energy development. This plan would be a proactive and comprehensive approach working with developers of alternative energy projects, the city, the county, NASCC and FAA to conduct field research and locate preferred alternative locations within the regional area that would have minimal or no impact on civilian and military air operations.	◆	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□				

Issue	Type of Strategy	Geographic Area	JLUS Strategy												Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
LU-7	Issue:	Lack of land use authority to manage compatible uses on Texas A&M University – Corpus Christi property has the potential to present compatibility concerns due to its proximity to NASCC as the University is not subject to city regulations.												●	□	□	□	□	□	□	□	■	□	□	□	□	□	□	□			
LU-7A	MOA	MCA	Develop an MOA between NASCC and TAMUCC to formally coordinate NASCC as part of the future development review process to identify if proposed development on campus may pose compatibility concerns that may impact the military mission. The MOA will also address private development contracted by the university.												●	□	■	□	□	□	□	□	□	■	□	□	□	□	□	□		
SAFETY																																
SA-1	Issue:	There is a general lack of awareness of safety zones. The current codified process allows for incompatible development in safety zones.												●	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□			
SA-1A	Disc	MCA	Develop a formal notification process and informational brochure to be incorporated in county appraisal database tool. The county should collaborate with the Appraisal District to develop and distribute an informational notice on all properties that are located within a Military Compatible Area (MCA).												●	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□		
SA-1B	Plans	MCA	Develop a web based electronic military compatibility tool. The county and city should collaborate to develop an interactive, electronic tool identifying properties that fall within an MCA to encourage awareness of accident potential. The Military Compatible Assessment Tool (MCAT) and the Military Compatible Analyst (MCA) may be used as examples.												○	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□		
SA-2	Issue:	Due to geography and location of habitat, NASCC encounters increased incidences of bird air strikes causing equipment destruction and unnecessary loss of wildlife.												●	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□			
SA-2A	Acq	Truax	Pursue grant funding through the Navy's REPI Program for the purpose of conserving environmentally sensitive areas near the installation and outlying fields. The Navy should collaborate with the city of Corpus Christi, appropriate county, and other resource agencies and apply for REPI funding for the purpose of reducing bird aircraft strikes that result from wetlands located on Navy property nearby runways.												●	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□		



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Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
SA-2B	Acq	Cabaniss	Pursue a REPI grant for the sale of city owned land to the Navy in AICUZ areas. The city purchased land in the 1980s which has never been sold to the Navy. The sale of the land or an easement to the Navy could also be accomplished as a land swap for developable land the Navy owns but does not need. Proceeds from funds could be used to acquire additional land located in clear zones.	●	<input type="checkbox"/>	<input type="checkbox"/>	■														
SA-2C	Comm	MCA	The city, with assistance from NASCC, should establish partnerships with existing conservation organizations, such as members of the Texas Conservation Alliance for recovery, enhancement, and/or mitigation credits that apply to wetlands and other natural areas that may attract birds and wildlife that may impede aircraft operations.	●	■		<input type="checkbox"/>														□
SA-2D	Comm	MCA	Develop and distribute BASH educational materials. Provide educational information to city and county jurisdictions and agencies to reduce the potential for bird and wildlife attractions that may impede safe air operations.	●	<input type="checkbox"/>	<input type="checkbox"/>	■						<input type="checkbox"/>								□
COMMUNICATIONS																					
COM-1	Issue:	Effective regional planning would benefit from formalized inter-agency communication and coordination agreements that are inclusive of all relevant stakeholders and agencies, including the military.																			
COM-1A	Comm	MCA	Establish a JLUS Coordinating Committee for the purposes of implementing the JLUS. The city should organize a committee of all relevant stakeholders who will be involved in the implementation of and monitoring of the JLUS recommendations.	●	■	<input type="checkbox"/>															
COM-1B	Comm	MCA	Develop a process to include an ex-officio representative of NASCC to participate on the city's Planning Commission. This process should allow for military review and comment on development applications and permits for locations within the MCA Overlay Subzones to assure the city is aware of any impacts that the development may have on military training and operations.	●	■		<input type="checkbox"/>														

Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
COM-1C	Comm	MCA	Provide Enhanced Notification prior to executing land sale/lease agreements. Require real estate disclosure statements to be included in all future land transactions within the MCA. Such disclosures should state that "some or all said property within the subject residential development lies within an MCA. Information regarding the MCA, as well as potential impacts to properties, can be obtained from the respective jurisdiction."	○	■	□	□											□			
ALTERNATIVE ENERGY																					
AE-1	Issue:	Siting of Wind-to-Electricity Turbines. The development of wind farms in the areas proximate to Truax Field, Cabaniss Field, Waldron Field, and CCIA may pose frequency issues and an electromagnetic field that interfere with airport flight navigational systems.																			
AE-1A	MOA	Outside MOA	DOD Clearinghouse and FAA Review. The city of Corpus Christi, in collaboration with Nueces County and NASCC, should seek review of all renewable energy permit applications that may affect air operations via the DOD Clearinghouse Review and the FAA Obstruction Evaluation process to ensure compatibility with military and civilian airport operations.	❖	■	■	■	■	□	□	□	□	□	□	□	□	□	□	□	□	□
AE-1B	MOA	MCA / Outside MCA	Develop an MOA with NASCC and Corpus Christi International Airport which the Counties would pursue to encourage and/or require developers to consult with NASCC and CCIA during the early stages of planning for future wind turbine development. These strategies should include notification between Corpus Christi and NASCC for any development proposals involving wind turbines.	●	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■
AE-2	Issue:	In the absence of State law to govern alternative energy development, wind farms may continue to expand and develop without local regulatory control or permitting. These wind farms pose vertical obstruction and frequency interference hazards to military operations.																			
AE-2A	MOA	MCA / Outside MCA	Nueces County and San Patricio Counties should seek assistance from the Texas Parks and Wildlife Department to develop an MOA outlining and formalizing coordination procedures when a new alternative energy development is proposed to review such wind energy project(s) for wildlife protection impact.	○	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□



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Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPFC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County	
AE-3	Issue:		Alternative energy development impacts flight safety and operations. Wind turbine developments pose unique challenges for radar operations. There is no required mitigation or funding to address alternative energy impacts to flight operations.																			
AE-3A	MOA	MCA / Outside MCA	NASCC will encourage local wind farm developers to enter into a MOA to outline efforts and actions to minimize interference. NASCC and Corpus Christi International airport will continue consultation with RADAR and Navigation system engineers to minimize wind turbine interference. NASCC should continue to pursue MOAs with wind farm developers similar to the one signed with NASCC, NAS Kingsville, and other entities of DOD in November of 2012.	❖	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>		<input type="checkbox"/>					<input type="checkbox"/>	
AE-4	Issue:		Corpus Christi has an alternative energy program that may allow residents to install small scale wind turbines on their property.																			
AE-4A	Zon	MCA	Update and maintain the coordination efforts established in Article 5.6.6 of the Corpus Unified Development Code. Article 5.6.6. mandates coordination with FAA; however, Corpus Christi should consider updating this Article to include NASCC as a reviewing agency of additional small / medium wind conversion units' placement / installations.	○	<input checked="" type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>												
VERTICAL OBSTRUCTIONS																						
VO-1	Issue:		Tall structures can have an impact on military flight operations. Local land use regulations should be updated to address cell tower height restrictions to prevent safety hazards from tall structures.																			
VO-1A	Zon	MCA	Ensure FAA Part 77 compliance when permitting for tall structures such as cell towers and wind turbines. The city of Corpus Christi and developer should ensure compliance with the Federal Aviation Administration's Part 77 for height limitations of structures within navigable airspace and / or a military compatibility area as identified by a DOD-sponsored JLUS. Ensure regulations remind applicants of the FAA requirement to prepare an Obstacle Evaluation (OE).	●	<input checked="" type="checkbox"/>															<input type="checkbox"/>		

Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
VO-2	Issue:		The current cell tower policy allows potential vertical obstructions to occur.																		
VO-2A	Zon	MCA	Update and Amend Zoning Code, Article 27C as appropriate to assure the placement of cell towers within a Military Compatibility Area is consistent with the vertical obstruction subzone.	●	■																
VO-3	Issue:		Temporary advertising balloons used by local businesses are permitted to extend into navigable airspace and are allowed by Special Use Permit. This can create an obstacle for both military and civilian air operations.																		
VO-3A	Zon	MCA	Amend Corpus Christi's Unified Development Code, Article 25-1 (A) to incorporate military compatibility guidelines. Corpus Christi should amend Article 25-1 (A) to impose height restrictions of all signs within an area designated as an MCA.	●	■																
FREQUENCY INTERFERENCE																					
FI-1	Issue:		Radar returns of wind turbines create interference and can diminish communication and flight navigation abilities.																		
FI-1A	Comm	MCA	NASCC should develop a Midair Collision Avoidance Pamphlet. The pamphlet or electronic media and or website should address potential frequency interference from wind turbines and include instructions on Visual Flight Rules squawking and how to make a plane visible to air traffic control and other air traffic. The information should be available at all agency offices including state, city, and county levels.	●			■	□	□												



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Issue	Type of Strategy	Geographic Area	JLUS Strategy										Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPFC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
FI-2	Issue:	There is a need for greater awareness and education of how electronic devices can interfere with airport communication devices and a need to evaluate the potential for future electronic emissions associated with residential and commercial development.																												
FI-2A	Comm	MCA / Outside MCA	Develop educational information on how electronic devices can interfere with airport operations. The information will address the potential for frequency bands to be encroached upon, which devices can result in problems (cordless phones, cell phones, radio stations, cell towers) or that leak frequency emissions even if they are not designed to transmit (e.g., radar detectors), and how to avoid frequency interference. The information format could include, but is not limited to, brochures, website information, public meetings, mail outs, etc.	●	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■	<input type="checkbox"/>														<input type="checkbox"/>	<input type="checkbox"/>						
FI-2B	Comm	MCA / Outside MCA	NASCC will work with the City of Corpus Christi to expand the National Telecommunications and Information Administration (NTIA) Spectrum XXI training program that is offered by the NTIA's Office of Spectrum Management and is currently used on base. This programs offers training on spectrum management software that assists non-DOD Federal Government spectrum managers, contractor support personnel, and others involved in the engineering of radio frequency assignments.	●		<input type="checkbox"/>			■		<input type="checkbox"/>																			
FI-3	Issue:	Corpus Christi does not have a frequency spectrum ordinance.																												
FI-3A	Zon	MCA	Corpus Christi will develop and adopt a frequency spectrum ordinance that defines the frequency sets or electrical equipment that may not be used for civilian operations. Develop regulations for electrical interference to incorporate into the Zoning Ordinance that designates what level of frequency and location is attuned with military frequency to avoid interference with flight operations. Update the ordinance with changes in FAA/FCC restrictions.	●	■			<input type="checkbox"/>	<input type="checkbox"/>																					

Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
FI-4	Issue:		Continued expansion of TAMUCC's renewable energy program, including the planned installation of wind turbines at its Momentum Site, would result in further frequency and safety issues and would be the closest wind energy site to NASCC.																		
FI-4A	MOA	MCA	NASCC should seek coordination from TAMUCC to develop and formalize an MOA to coordinate future development. The MOA should identify procedures between TAMUCC and NASCC to maintain safe operations relative to air navigational and communication systems and allow for research and testing by the University.	●	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■	<input type="checkbox"/>					<input type="checkbox"/>							

Table 3. Medium Priority Strategies

Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMP	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
NOISE																					
NO-1	Issue: The current Corpus Christi City Code does not address construction that may be subject to airport noise.																				
NO-1A	Zon	MCA	Update Chapter 31 of Corpus Christi's Noise Ordinance. The update should incorporate the noise contours of both military and civilian airports as well as mitigation measures for sensitive land uses that are within the Noise Subzone.	●	■																
NO-1B	Bldg	MCA	Adopt existing sound attenuation building standards for new construction within the Noise Subzone. Amend Corpus Christi's Building Code Division 2, Chapter 16 – Structural Design and the Residential Code Division 8, Chapter 6 – Wall Construction (interior) to require sound attenuation standards to limit their interior noise level to no greater than 45 Ldn.	●	■																
NO-1C	Comm	MCA	Initiate an educational program to inform builders on methods to achieve appropriate interior noise levels where property is impacted by flight zones. Review and educate as needed code compliance (specifically sound attenuation measures) with building inspectors; work with building industry and developer on compliance methods and available materials and technologies.	●	■																
PUBLIC TRESPASSING																					
PT-2	Issue: Public trespassing and illegal dumping occurs along the southern perimeter of NASCC Main Base (Truax).																				
PT-2A	Comm	Truax	The City of Corpus Christi and NASCC will collaborate on monitoring and prohibiting public trespassing onto the base and outlying fields. The Navy will erect signs along the perimeter fence that clearly indicate public trespassing as illegal and subject to legal consequences. Violators will be subject to city, state, and federal offense apprehension.	❖	□		■														
PT-2B	Leg	Truax	The City of Corpus Christi will enforce the prohibition of illegal dumping throughout the city, with priority given to areas surrounding military facilities. Violators will be subject to city littering offense apprehension. The city may require violators to be responsible for cleanup and remediation.	❖	■																

Issue	Type of Strategy	Geographic Area	JLUS Strategy																	
			Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TxMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
PT-2C	Comm	Truax	NASCC will improve community awareness regarding federal laws that prohibit public trespassing onto a military installation and illegal dumping of waste. This will include developing and posting fact sheets that will be posted in public locations and that address what activities are considered illegal, potential consequences, and how to report violations observed.	❖	■	□														

LEGISLATIVE INITIATIVES

LI-1	Issue: Cities and counties do not have the necessary land use authority to prevent construction of airport hazards in unincorporated areas.																			
LI-1A	Leg	MCA	Continue to seek authority to prevent airport hazards through amendments to Local Government Code, Title 7, Subtitle C. Chapter 241. Expansion of the "controlled compatible land use area" in Chapter 241 may be necessary to prevent airport hazards in extraterritorial jurisdictions or unincorporated areas beyond the extraterritorial jurisdiction.																	
LU-1B	Acq	MCA - CCIA	Pursue State appropriations for funding of local compatible use initiatives. The initiatives should include funding options for acquisition of property, acquisition of compatible development easements, conservation easements, flood mitigation credits, wetlands recovery credits, etc.																	
LI-2	Issue: The Texas Military Preparedness Commission (TxMPC) does not currently have a representative from the Coastal Bend/Corpus Christi. TxMPC collaborates with the communities who host military installations to provide financial assistance and advocacy to the State Government and US Representatives.																			
LI-2A	Leg	MCA	Reinstate the Powers of the Texas Military Preparedness Commission (TxMPC) and assign a representative to Corpus Christi. Corpus Christi, Nueces County, and NASCC should collaborate with State Legislators to reinstate the mission of the TxMPC to assist Corpus Christi with the need for compatible development and enhanced coordination.																	



RECOMMENDATIONS

4

Issue	Type of Strategy	Geographic Area	JLUS Strategy												Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
TRANSPORTATION & INFRASTRUCTURE EXPANSIONS																																
TI-1	Issue:	Infrastructure extensions and improvements need to be planned strategically to allow growth outside the boundaries of NASCC while protecting and enhancing the military mission.																														
TI-1A	CIP	Truax	Update city, regional, and state transportation plans to address potential impacts to military operations. Transportation and infrastructure plans within the JLUS Study Area should promote compatible land use development and provide adequate ingress and egress flow to and from military installations. Adequate and appropriately planned infrastructure is critical for continued operation of NASCC and continued compatible growth around the airfields.	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								<input checked="" type="checkbox"/>																
TI-2	Issue:	NASCC does not possess an alternate or redundant source for water, gas, and electricity, which can affect continuity of operations.																														
TI-2A	CIP	MCA	Corpus Christi should develop plans to provide NASCC with an alternate source for water and gas. Corpus Christi and NASCC should work with private electric providers to identify an alternate source for electricity. These plans should identify the types of emergency situations that would trigger the need for use of redundant feeds and the procedures associated with implementing this assistance.	<input type="radio"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>																								
LIGHT & GLARE																																
LG-1	Issue:	Future development of sports fields/complexes may cause light and glare issues near airfields and along flight tracks																														
LG-1A	Plans	MCA	Incorporate a Dark Sky Ordinance to limit sky glow within the city. The CCIA is affected by lights from development during night operations. While the mission at NASCC does not require night training activities, the preservation of dark night skies would allow expansion of military missions.	<input type="radio"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>																							
LG-1B	Comm	MCA	Develop coordination procedures to manage the installation of light fixtures that produce sky glow within the region. The coordination procedures should outline the points-of-contact for all stakeholders and specify the types of fixtures that are compatible with dark skies.	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								<input type="checkbox"/>	<input type="checkbox"/>															

Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO	San Patricio County
LG-2	Issue:		Light and glare standards are codified in a way that makes it difficult for Corpus Christi to enforce and for builders and developers to follow.																		
LG-2A	Zon	MCA	Amend the zoning code to include a lighting ordinance that applies to all properties within the Light Subzone. Corpus Christi should amend and incorporate Lighting Standards that are easy-to-follow and comply with by using graphics and within the UDC Article 6.5: MCA Subzones.	●	■	□	□	□													
LG-2B	Plans	MCA	Monitor and maintain compliance with FAA Part 77 regulations regarding Required Lighting on Cell Towers and/or Wind Turbines. Corpus Christi should monitor the lighting requirements regulated by FAA to promote safe airspace and protection of pilots and properties within the MCA, specifically.	●	■														□		
LG-3	Issue:		Continued expansion of TAMUCC's campus could include tall structures equipped with lighting sources that could impair flight safety.																		
LG-3A	Comm	MCA	Develop communication / coordination procedures with TAMUCC regarding proposed and potential development and expansion. Encourage compatible planning through ongoing communication with the University, Corpus Christi, and NASCC. The purpose of the procedures would be to provide compatible land use comments to TAMUCC on University development proposals.	●	□		□							■							

Table 4. Low Priority Strategies

Issue	Type of Strategy	Geographic Area	JLUS Strategy	Timeframe	Corpus Christi	Nueces County	NASCC	CCIA	DOD	DOD ESC	TXMPC	TXDOT	OGA	TAMUCC	ISDs	Legislature	AEDC	Realtors	FAA	SECO
COMPETITION FOR LAND, AIR & SEA SPACE																				
CP-1	Issue:		There is a need to maximize the use of airspace in and around Corpus Christi.																	
CP-1A	AP	CCIA	The Navy and CCIA should consider the use of CCIA for additional military training in order to support the ability to expand NASCC's mission.	◆			■	■	□											

Please see the next page.



City of
Corpus
Christi

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