
# Background Report

June 2014

# NAF El Centro
## Joint Land Use Study

Matrix DESIGN GROUP

# NAF EL CENTRO
# JOINT LAND USE STUDY

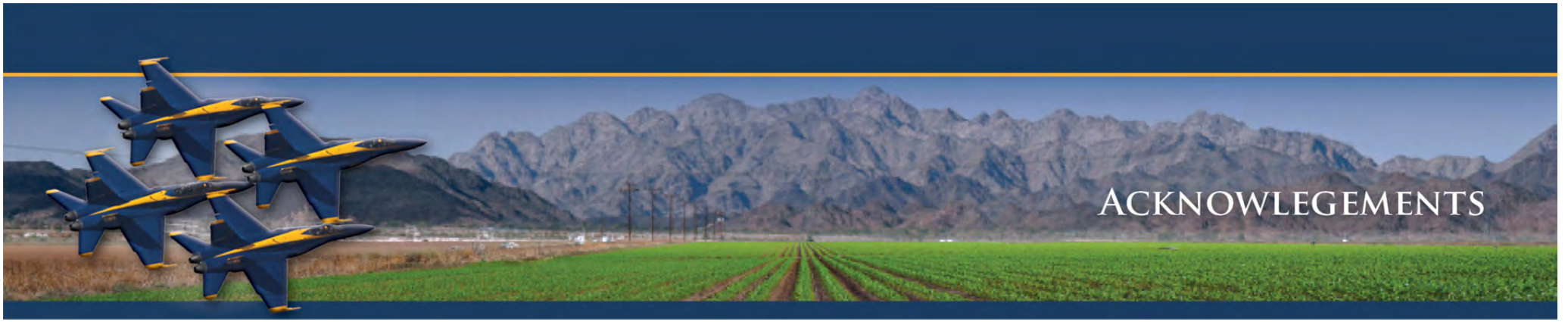
## BACKGROUND REPORT

*Prepared by*

Matrix DESIGN GROUP

**June 2014**

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




## POLICY GROUP

The Policy Group served an active and important role in the development of the Naval Air Facility (NAF) El Centro Joint Land Use Study (JLUS). Imperial County would like to thank the following individuals for their review, guidance, and assistance:

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## TECHNICAL WORKING GROUP

The Technical Working Group also served a key role in the development of the NAF El Centro JLUS. Imperial County would like to thank the following individuals for their technical expertise and assistance:

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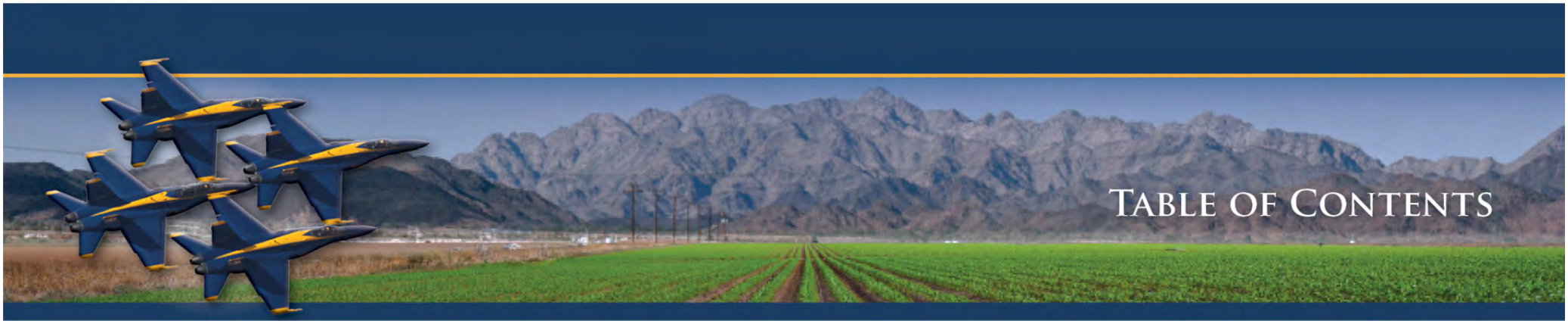

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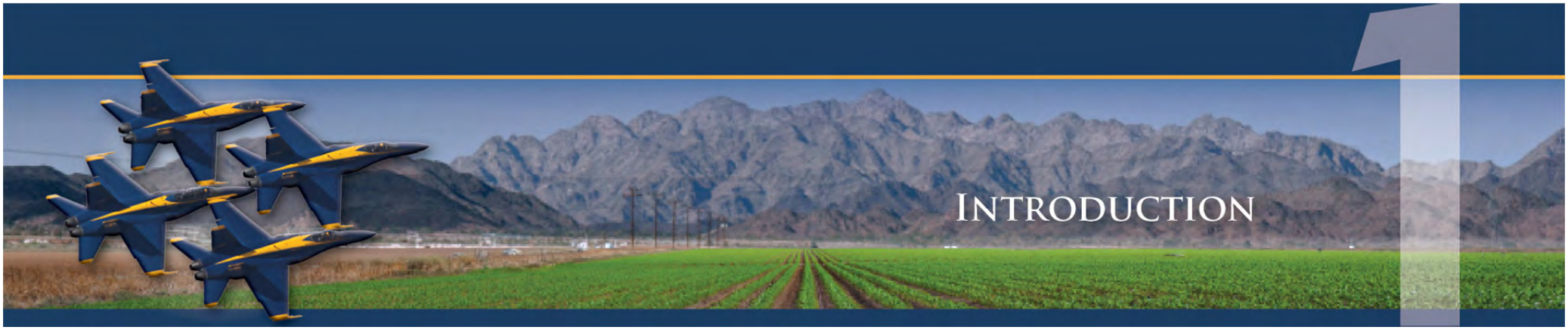



## Introduction

Across the United States, incompatible development has been a factor in the loss of military training operations and restructuring of mission-critical components to various military installations. The loss of military missions and closure of military installations have been a major negative economic impact to the communities that were the home to these installations. To protect the missions of military installations and the health of the community, economies, and industries that rely on them, encroachment must be addressed through collaboration and joint planning between installations and local communities.

Naval Air Facility El Centro (NAFEC) is situated within the west central area of Imperial County, California, covers an area of 2,800 acres and exercises oversight of approximately 54,000 acres of training ranges. NAFEC is critical to local and regional economies, generating approximately $105 million in economic benefit to the local community annually through salaries and contract expenditures. The area around NAFEC is used primarily for food crop agriculture but has and continues to experience economic growth and development within the area.

This Joint Land Use Study (JLUS) is a proactive approach to mitigating existing and preventing future military compatibility issues by facilitating local comunities, agencies, the public and NAFEC to work collaboratively and partner to address compatible development. . An organized communication effort between Imperial County, the cities of El Centro and Imperial, NAFEC and other stakeholder entities that own or manage land or resources in the region is needed to ensure the future growth in Imperial County is coordinated and is compatible with NAFEC training and mission activities .

In summary, the NAFEC JLUS advocates a proactive approach to encourage increased communication about decisions relating to land use regulation, conservation and natural resource management issues affecting the study area communities and the military. This study seeks to avoid conflicts previously experienced between the United States (US) military and local communities in other areas of the US and throughout the world by engaging the military and local decision-makers in a collaborative planning process.

## What Is a Joint Land Use Study?

A JLUS is a planning process accomplished through the collaborative efforts of a comprehensive list of stakeholders in a defined study area. These stakeholders include local community, state, and federal officials, residents, business owners, local tribal governments, nongovernmental organizations, and the military who come together to identify compatible land uses and growth management recommendations within, and adjacent to, active military installations. The intent of the process is to establish and encourage a working relationship between the local communities and agencies and NAFEC.

### JLUS GOAL

The goal of the NAFEC JLUS is to protect the viability of current and future training operations, while simultaneously guiding community growth, sustaining the environmental and economic health of the region, and protecting public health, safety, and welfare.

To help meet this goal, three primary guiding principles were identified.

- **Understanding.** Convene community and military representatives to identify, confirm, and understand the issues in an open forum, taking into consideration both community and NAFEC perspectives and needs. This includes public awareness, education, and input organized in a cohesive outreach program.
- **Collaboration.** Encourage cooperative land use and resource planning among NAFEC and surrounding communities so that future community growth and development are compatible with the training and operational missions at NAFEC, while at the same time seeking ways to reduce operational impacts on adjacent lands within the study area.
- **Actions.** Provide a set of mutually supported tools, activities, and procedures from which local jurisdictions, agencies, and NAFEC can select, prepare, and approve / adopt and then use to implement the recommendations developed during the JLUS process. The actions proposed include both operational measures to mitigate installation impacts on surrounding communities and local government and agency approaches to reduce community impacts on military operations. These tools will help decision makers resolve compatibility issues and prioritize projects within the annual budgeting process of their respective entity / jurisdiction.

## Why Prepare a Joint Land Use Study?

Although military installations and nearby communities may be separated by a fence line they often share natural and manmade resources such as land use, airspace, water, and infrastructure. Despite the many positive interactions among local jurisdictions, agencies, and the military, and because so many resources are shared, the activities or actions of one entity can pose unintended negative impacts on another, resulting in conflicts. 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 new, or exacerbate 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. This threat to military readiness activities is currently one of the military's greatest concerns.

Collaboration and joint planning among military installations, local communities, and agencies should occur 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 aims to preserve the sustainability of local communities within the JLUS study area while protecting current and future operational and training missions at NAFEC.

## Public Outreach

As highlighted in the objectives stated previously, the JLUS process was designed to create a locally relevant document that builds consensus and obtains support from the various stakeholders involved. To achieve the JLUS goals and objectives, the NAFEC JLUS process included a public outreach program that provided a variety of opportunities for interested parties to contribute to its development.

### STAKEHOLDERS

An early step in any planning process is the identification of stakeholders. Informing or involving them early in the project is instrumental in the identification of their most important issues to address and resolve through the development of integrated strategies and measures. Stakeholders include individuals, groups, organizations, and governmental entities interested in, affected by, or affecting the outcome of the JLUS document.

Stakeholders identified for the NAFEC JLUS included, but were not limited to, the following:

- Local jurisdictions (cities and county)
- DOD officials and NAFEC personnel
- Local, regional, and state planning, regulatory, and land management agencies
- Landholding and regulatory federal agencies
- The public (including residents and landowners)
- Nongovernmental organizations (NGOs)

## POLICY GROUP AND TECHNICAL WORKING GROUP

The development of the NAFEC JLUS was guided by two committees, comprised of city, county, NAFEC personnel, federal and state agencies, resource agencies, local governments, and other stakeholders.

**JLUS Policy Group (PG).** The PG consists of officials from participating jurisdictions, military installation leadership, and representatives from other interested and affected agencies. The PG is responsible for the overall direction of the JLUS, preparation and approval of the study design, approval of policy recommendations, and approval of draft and final JLUS documents.

**JLUS Technical Working Group (TWG).** The TWG is responsible for identifying and studying technical issues. Membership includes city planners, military base planners, business and development community representatives, natural resource protection organizations, and other subject matter experts as needed to help assist in the development and evaluation of implementation strategies and tools. Items discussed by the TWG were brought before the PG for consideration and action.

The PG and TWG served as liaisons to their respective stakeholder groups. PG and TWG members were charged with conveying committee activities and information to their organizations and constituencies and relaying their organization's comments and suggestions to both committees for consideration. PG members were encouraged to set up meetings with their organizations and / or constituencies to facilitate this input. The responsibilities and list of participants for the JLUS sponsors, the PG, and the TWG are identified in Tables 1-1, 1-2, and 1-3, respectively.

**Table 1-1. JLUS Sponsor Responsibilities and Participants**

| Responsibilities | Participants |
|---|---|
| ■ Coordination<br>■ Accountability<br>■ Grant Management<br>■ Financial Contribution | ■ Office of Economic Adjustment<br>■ Imperial County Planning and Development Services |

**Table 1-2. JLUS Policy Group Responsibilities and Participants**

| Responsibilities | Participants |
|---|---|
| ■ Policy Direction<br>■ Study Oversight<br>■ Monitoring<br>■ Report Adoption | ■ Imperial County<br>■ City of El Centro<br>■ City of Imperial<br>■ Imperial Irrigation District<br>■ NAFEC |

**Table 1-3. JLUS Technical Working Group Responsibilities and Participants**

| Responsibilities | Participants |
|---|---|
| ■ Identify Issues<br>■ Provide Expertise to Address Technical Issues<br>■ Evaluate and Recommend Implementation Options to the PG<br>■ Provide Draft and Final Report Recommendations to the PG | ■ Imperial County<br>■ City of El Centro<br>■ City of Imperial<br>■ CALTRANS<br>■ Bureau of Land Management<br>■ US Fish and Wildlife Service<br>■ Imperial Irrigation District<br>■ Imperial County Regional Airport<br>■ NAFEC |

Group meetings were held throughout the process to ensure the JLUS identified and appropriately addressed local issues. The meetings conducted are highlighted as follows:

- **Meeting #1 (February 21, 2013).** This meeting served as the initial kick-off for the committees. This meeting provided an overview of the NAFEC mission, introduced the JLUS process and participants, and presented information on the 24 compatibility factors evaluated in this JLUS.
- **Meeting #2 (May 16 and 17, 2013).** This meeting provided feedback from the May 16th public workshop to PG and TWG members. Preliminary compatibility issues identified at the public forum were discussed. Committee members' inputs on potential compatibility issues were provided. An overview of the report organization and the military profile was also provided in this meeting.
- **Meeting #3 (November 19, 2013).** The TWG meeting, in the morning, and the PG meeting, in the afternoon, provided the members an overview of the public meeting that occurred on November 18th, an opportunity to accept the compatibility issues and learn about potential strategies that would be recommended for the NAFEC JLUS. In addition, the TWG and PG learned about and provided input on potential strategies the JLUS would recommend for various agencies. Both committees reviewed and provided comments on the Committee Draft of the Background Report.
- **Meeting #4 (February 6 and 7, 2014).** The TWG met on February 6th in the afternoon and were presented with maps that depicted the areas most affected by the military missions at NAFEC. These areas were identified for the purposes of the JLUS as the military compatibility areas where certain land use controls may be implemented to protect the general public from impacts by the military mission and sustain the military mission. In addition, the TWG worked in groups around large posters to provide input on the various strategies that may be recommended for the JLUS.

  The PG met in the morning on February 7th were also presented with maps of the military compatibility areas. Matrix provided a brief overview of the strategy ideas developed by the TWG. Furthermore, at this meeting, the PG requested the JLUS process be expedited and begin the public comment period sooner than originally scheduled.
- **Meeting #5 (June 3, 2014).** At this joint meeting, Matrix presented the major recommendations to the PG and TWG. A brief explanation of the implementation plan and effort was also discussed in this meeting.

## PUBLIC WORKSHOPS

In addition to the PG and TWG meetings, a series of public workshops were held throughout the development of the JLUS. These workshops provided an opportunity for the exchange of information with the greater community, assisted in identifying the issues to be addressed in the JLUS, and provided input on the strategies proposed. Each workshop included a traditional presentation and a facilitated exercise providing a "hands on," interactive opportunity for the public to participate in the development of the plan. The public workshops conducted are highlighted as follows:

- **Public Workshop #1 (May 16, 2013).** At this workshop, the JLUS project and purpose were discussed, and the 24 standard compatibility factors were introduced. Then attendees were asked to identify specific compatibility issues that they feel should be addressed in this JLUS.
- **Public Workshop #2 (November 18, 2013).** At this workshop, the public will receive a presentation about the Community-Compatibility Assessment Tool, which the consultant utilizes to analyze the compatibility factors against land uses within the JLUS study area, and an overview of the NAFEC military profile. In addition to this presentation, the public provided input through a working session by identifying the priorities of the refined issues to be addressed in the JLUS.
- **Public Workshop #3 (February 20, 2014).** At this workshop, the public will receive a presentation of the Draft JLUS Report and discuss the military compatibility areas along with the types of strategies that might be applicable to certain areas. In addition, this workshop will mark the beginning of the 30-day public review period of the JLUS and Background Report.

- **Public Workshop #4 (June 3, 2014).** At this public hearing, Matrix presented the Final JLUS and Background Report documents and the major recommendations to the Board of Supervisors. The intent of this hearing was to have the Board of Supervisors approve a resolution in support of the NAFEC JLUS Process and its resulting report.

### PUBLIC OUTREACH MATERIALS

**JLUS Overview / Compatibility Factors Fact Sheet.** At the beginning of the JLUS program, a Fact Sheet was developed describing the JLUS program, objectives, methods for the public to provide input into the process, and the NAFEC JLUS proposed study area. This Fact Sheet was made available at the meetings for review by interested members of the public.

This Fact Sheet also served as an informational brochure that describes each of the 24 standard compatibility factors used for JLUS development. While not every factor may apply to the NAFEC JLUS, this list provides an effective tool to ensure a comprehensive evaluation of compatibility factors is conducted within the JLUS study area.

**Strategy Tools Fact Sheet.** JLUS strategies constitute a variety of actions that local governments, military installations, agencies, and other stakeholders can take to promote compatible land use planning. This fact sheet provided an overview of the strategy types that could be applied to address compatibility issues around NAFEC.

**Website.** In addition to these documents, a project website was developed and maintained that provided stakeholders, the public, and media representatives with access to project information. This website was maintained for the entire duration of the project to ensure information was easily accessible. Information contained on the website included program points of contact, documents, maps, public meeting information, and other JLUS resources. The project website is located at www.nafelcentrojlus.com.

## JLUS Study Area

The 2,800 acre NAFEC main base is located in the southwestern central area of the Imperial Valley region. While the Imperial Valley covers about half of Imperial County, the irrigated portion of Imperial Valley is centrally situated in Imperial County, California, which is located in the extreme southeast corner of the state. The region is characterized by an arid desert climate with steep mountain ranges primarily on the north, west and east edges of the valley as shown in Figure 1-1. The unique climate and unobstructed terrain afford NAFEC operations 360 days a year of clear weather training opportunities. The outlying target and bombing ranges comprise approximately 54,000 acres and are divided among several distinct units located west-northwest of the main base and east of the main base on the east side of the valley near the Chocolate Mountains.

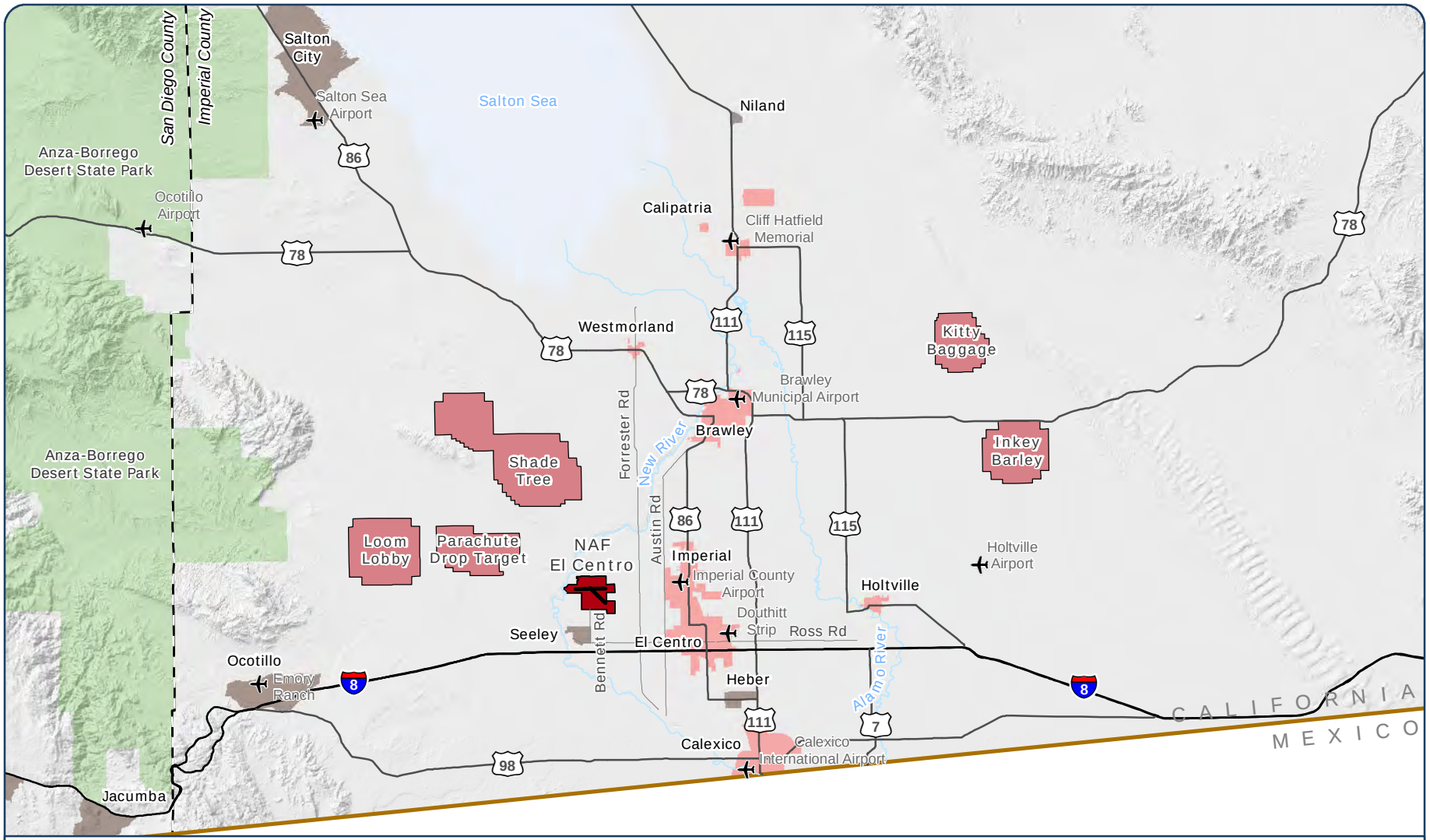
The NAFEC JLUS study area encompasses all lands near NAFEC and its associated ranges that may impact current or future military operations or be impacted by operations. The NAFEC JLUS study area covers southwest and south central Imperial County immediately surrounding the installation and outlying areas affected by military operations. The Study Area is bound by the Mexico boundary to the south, San Diego County boundary to the west, approximately 35 miles to the north of NAFEC and approximately 47 miles to the east of NAFEC. This area includes the majority of the irrigated portion of Imperial Valley. Figure 1-2 illustrates the NAFEC JLUS study area.

There are seven incorporated cities within Imperial Valley but only two, El Centro and Imperial (11 and 14 miles east, respectively) are stakeholders in the development of the JLUS. These communities provide most of the housing, shopping opportunities and other amenities for NAFEC-stationed and transient service personnel and civilian employees working at NAFEC. El Centro is the county seat and the largest city in Imperial Valley. The remainder of the land use in the study area is primarily food crop agriculture and federal lands.


Sources: NAF El Centro, 2013; ESRI, 2013.

*Fig_1-1_NAFEC_JLUS_Regional_Area_20131025_CJM.pdf*

**Figure 1-1**
**Regional Area**




Sources: Imperial County, 2013; NAF El Centro, 2013; Caltrans, 2013.

*Fig_1-2_NAFEC_JLUS_Study_Area_20131025_CJM.pdf*

**Figure 1-2**
**Study Area**

## JLUS Implementation

It is important to note that once the JLUS process is completed, the final document is not an adopted plan. It is a set of strategies to be used by local jurisdictions, agencies, and organizations in the NAFEC JLUS study area to guide their future compatibility efforts. To that end, acceptance of the study by stakeholders (i.e. committees, the public, landowners, local agencies, and industries) will be sought to confirm their collective support for identified implementation efforts. For instance, local jurisdictions, counties, and regional governments may use the strategies in this JLUS to guide future subdivision regulation, growth policy, and zoning updates, as well as to coordinate with the NAFEC in the review of infrastructure extensions and development proposals.

NAFEC will use the JLUS process as a guide in interaction with local jurisdictions on future projects, as well as manage internal planning processes with a compatibility-based approach. It is through this process that the stakeholders can make the strategies in the JLUS a reality.

The key to the implementation of the strategies presented in this JLUS is the establishment of a JLUS Coordinating Committee that will oversee the execution of the JLUS. Through this Committee, local jurisdictions, NAFEC, and other interested parties will be able to continue their initial 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.

## JLUS Background Report Organization

The following is a brief overview of the organization of the NAFEC JLUS Background Report, including the contents of each of the five Chapters.

**Chapter 1: Introduction.** Chapter 1 provides an introduction and overview of the NAFEC JLUS. This chapter describes the working relationships among the entities, the background and intent of the JLUS, the study area, the objectives used to guide development of the JLUS, the stakeholders involved in developing the JLUS, public outreach methods, implementation premise, and the organization of the document.

**Chapter 2: Community Profile.** In developing this JLUS, an informed understanding of NAFEC and local jurisdictions within the study area is necessary. This is followed by an overview of the region's growth potential and a profile of the jurisdictions within the study area, including population, housing, transportation, and important environmental and historical areas.

**Chapter 3: Military Profile.** The military profile will introduce NAFEC and discuss the facility's missions, the strategic and local importance of NAFEC, the importance of mission sustainment, facility and training capabilities and operations, its role in national defense, potential future missions and touch upon the base's challenges.

This chapter also illustrates the footprint of each of the military operating areas (i.e., airspace, noise contours, accident potential zones) that occur in the Study Area to foster an understanding of how the military operations could potentially impact, or be impacted by, the surrounding communities.

**Chapter 4: Existing Compatibility Tools.** This chapter provides an overview of relevant plans, programs, and studies that are tools to address compatibility issues in the JLUS Study Area. The applicable tools are reviewed in order to set a baseline outline for the evaluation of the effectiveness of each existing plan or program relative to addressing compatibility issues, as identified and described in Chapter 5.

**Chapter 5: Compatibility Assessment.** Compatibility, in relationship to military readiness, can be defined as the balance or compromise between community needs and interests and military needs and interests. In this chapter, the JLUS presents the compatibility issues identified for the NAFEC JLUS Study Area. These issues were identified based on input from the PG and TWG, members of the public, existing plans and technical reports, and evaluation by the project team. This chapter enumerates the issues and categorizes them into the following 24 compatibility factors:

- Interagency Coordination / Communication
- Land Use
- Safety
- Vertical Obstructions
- Local Housing Availability
- Infrastructure Extensions
- Anti-Terrorism / Force Protection
- Noise
- Vibration
- Dust, Smoke, and Steam
- Light and Glare
- Alternative Energy Development
- Air Quality
- Frequency Spectrum Interference / Impedance
- Public Trespassing
- Cultural / Historic Resources
- Legislative Initiatives
- Water Quality / Quantity
- Biological Resources
- Marine Environments
- Scarce Natural Resources
- Land and Air Spaces
- Frequency Spectrum Capacity
- Roadway Capacity

*Please see the next page.*


## Introduction

This section provides an overview of the civilian communities within the Naval Air Facility El Centro (NAFEC) Joint Land Use Study (JLUS) area. Profiles of community growth and development trends are provided as well as a description of the general setting of the JLUS study area.

Capturing and describing certain demographic characteristics of the participating JLUS communities can help to provide a baseline context from which informed decisions can be made when developing compatibility strategies. The goal is to provide information that enables stakeholders to gain an understanding of population and development trends that have the potential to affect the future of NAFEC. It is intended that this information, combined with other factors presented herein, help decision-makers develop consistent, informed planning policies about future development and economic growth of the communities they represent before compatibility issues arise.

Further, this section is designed to foster an understanding by the military about the types of activities occurring "outside the fence" when considering future missions and operations.

## Imperial Valley Regional Overview

Situated in the southeastern portion of Southern California, the Imperial Valley is characterized by desert and agriculture. Imperial Valley starts at the Salton Sea and runs south to the Republic of Mexico (Mexico) for approximately 50 miles. The Imperial Valley covers smaller portions of two counties in Southern California, Riverside and San Diego, and covers a significant portion of Imperial County.

Imperial Valley hosts a small portion of the larger Sonoran Desert, known as the Colorado Desert. It encompasses approximately 10,938 square miles beginning in northwestern Mexico and running north to the larger Mojave Desert.

Presently, one-fifth of the nearly three million acres in the county is irrigated for agricultural uses by the Colorado River, which is the eastern border of the valley. The valley also includes an urban area centered on the City of El Centro, in fact, equidistant between the Alamo and New Rivers.

The region is best known for the production of hearty grains and vegetables including alfalfa and lettuce. Imperial County is the hub of the agriculture industry in the Imperial Valley; this industry accounts for slightly less than half (48%) of employment in the county.

### IMPERIAL COUNTY

Established in 1907, Imperial County includes a total area of 4,597 square miles and is bordered by San Diego County to the west, Riverside County to the north, the state of Arizona to the east, and Mexico to the south. The terrain within this area varies from 235 feet below sea level at the Salton Sea to 4,548 feet above sea level at Blue Angel Peak. The NAFEC JLUS study area is completely located within Imperial County.

Imperial County is comprised of desert or park lands or in use for agriculture purposes. Approximately fifty percent of Imperial County lands are undeveloped and under federal ownership and jurisdiction. The developed area, where the county's incorporated cities, unincorporated communities, and supporting facilities are situated, comprises less than one

percent of the land. Approximately seven percent of the county is the Salton Sea.

Historically, Imperial County has been largely characterized as a farming community. In recent years, though, this has been changing. The shift away from farming is due to an explosive population growth, which saw a 22.6 percent increase from 2000 to 2010, as shown in Table 2-1.

**Table 2-1. Imperial County Population Growth, 2000 – 2010**

| Jurisdiction | 2000 | 2010 | Number Change | Percent Change |
|---|---|---|---|---|
| California | 33,871,648 | 37,253,956 | 3,382,308 | 10.0% |
| ❖Imperial County | 142,361 | 174,528 | 32,167 | 22.6% |
| Brawley | 22,052 | 24,953 | 2,901 | 13.2% |
| Calexico | 27,109 | 38,572 | 11,463 | 42.3% |
| Calipatria | 7,289 | 7,705 | 416 | 5.7% |
| ❖El Centro | 37,835 | 42,598 | 4,763 | 12.6% |
| Holtville | 5,612 | 5,939 | 327 | 5.8% |
| ❖Imperial | 7,560 | 14,758 | 7,198 | 95.2% |
| Westmorland | 2,131 | 2,225 | 94 | 4.4% |
| Remaining County | 32,412 | 37,778 | 5,005 | 15.4% |

*❖ Indicates jurisdiction is a partner in the development of the JLUS.*

*Source: California Department of Finance: Demographic Research Unit Demographic Profile 2010-2006 and 2000.*

This population surge is largely due to the renewable energy drive throughout the state. California is one of the primary locations in the U.S. where renewable energy development is ideal due to the available land and resources. Due to the need to diversify consumptive energy resources, the U.S. has pushed for renewable energy projects including solar, geothermal, wind, and biomass. Imperial County has been the location where these types projects have most recently been sited and geothermal renewable energy development projects in particular.

Finally, the proximity to Mexico, specifically, Mexicali, with its population of over one million, greatly contributes to economic growth in Imperial County. Calexico serves as a significant port of entry along the U.S.-Mexico border and offers overnight transportation of goods to major ports such as San Diego, Long Beach, and Los Angeles. Mexicali has the third highest number of manufacturing businesses within a free trade zone (known as maquiladoras) along the international border, which drives much of the manufacturing and trade in the region. These factors are creating development pressure throughout the county and, subsequently, NAFEC and other military lands within the region. NAFEC has historically enjoyed its isolated location, free from encroachment pressure, but as population increases and the need for services keeps pace with population growth, the need to proactively manage that growth in concert with military compatibility principles has become paramount.

## CITY OF EL CENTRO

The City of El Centro is located approximately eight miles east of NAFEC and 13 miles north of the US-Mexico border. After Imperial County was established, land purchases and improvements led to the development of the City of El Centro. The city was incorporated on April 16, 1908 and is now the county seat for Imperial County. The city covers just over 11 square miles of land.

Early growth was rapid with the onset of the City's designation as the county seat; subsequently, the other six cities in the county were established, which would comprise the urban corridor through Imperial County. By the mid-1940's, El Centro had become the second largest city in the Imperial Valley. In addition, El Centro's strategic location near rail lines and State Highways 80 and 99 allowed the city to become the hub for shipping vegetables from the south end of the Valley as well as the principal wholesale center in the area. In addition, the placement of the Imperial Irrigation District (IID) Administrative Offices added to the significant role of the City throughout the Valley.

Over the next few decades, agriculture remained an important part of the City's economic vitality. This made Imperial County one of the most agriculturally-productive areas in the country. By the early 1980's, the city had experienced a shift away from agriculture and the two largest employment sectors in the El Centro labor market area were Government and Wholesale/Retail Trade, reflecting El Centro's emerging role as a regional administrative and commercial center. While the economy of El Centro is currently diversifying, the agriculture industry still accounts for

a significant portion of the employment in the county, which is evident by the presence of more than 35 growers and shippers still operating in the City.

## CITY OF IMPERIAL

The City of Imperial is located 30 miles north of the US-Mexico border and abuts the City of El Centro on the south. It is located approximately 11 miles east of NAFEC. The City had a 2010 US Census population of 14,758 and has a land area of approximately 5.9 square miles.

When the plan to bring water to the Imperial Valley was set into motion, two early entrepreneurs planned and organized the Imperial Land Company for the purpose of developing towns and farms. Expecting many settlers, the Imperial Land Company plotted and staked out what was to become the City of Imperial as the first town site. The city was eventually incorporated on July 12, 1904 and became the first incorporated city in the valley.

*Source: City of Imperial General Plan Introduction as revised December 1992.*

## CITY OF BRAWLEY

The City of Brawley is located midway between the City of El Centro and the Salton Sea and approximately 13 miles north-northeast of NAFEC. The town was laid out in 1902 as part of the Imperial Land Company's project to bring water to the valley and settle the area for agriculture. It was incorporated in 1908 and, in 2010, had a population of 24,953 people. It continues its traditional role as a significant agricultural area within the county and is also home to the Pioneers Memorial Hospital and National Beef Packing Company, who, in addition to the agriculture businesses, are major employers in the city.

*Source: City of Brawley General 2008 General Plan.*

## CITY OF CALEXICO

The City of Calexico was incorporated in 1908 as the Imperial Valley continued to grow as an important agriculture area in Southern California. The city is located 10 miles south of El Centro on the U.S.-Mexico border, which it shares with its sister city Mexicali, Mexico. It is 13 miles south-southeast of NAFEC. The city is very closely tied to Mexicali as an American suburb to the much larger Mexican neighbor, while supporting the local agriculture economy of the valley. Calexico is heavily-involved in the transportation of goods across the border as a major border crossing for the maquiladoras located south of the U.S.-Mexico border. This goods transportation is resulting in the conversion of large amounts of previously agricultural land into industrial and warehousing uses to support this economic growth. The 2010 population of Calexico was 38,572 people.

*Source: City of Calexico 2007 General Plan.*

## CITY OF HOLTVILLE

Holtville is a city of 5,939 people, according to the 2010 U.S. Census, located 21 miles east of NAFEC. It was settled in the 1880's by Swiss-German immigrants and was later incorporated in 1908. Early growth was encouraged by its proximity to U.S. Route 80, now Interstate-8 (I-8), and the All-American Canal. The canal supported the growth of the agriculture-based industry, which still dominates the region. The closure of the railroad line running through the town brought an economic downturn in the latter half of the 20th century and high unemployment rates continue to plague the city.

*Source: City of Holtville 2008 General Plan.*

## CITY OF WESTMORLAND

The City of Westmorland was incorporated in 1934 after being settled as a farming community at the turn of the century. It had a 2010 population of 2,225 and had an area of less than one square mile. State Route 86, a major thoroughfare around the Salton Sea, passes through downtown Westmorland towards Brawley. It is located approximately 20 miles north-northeast of NAFEC. One of the city's main employers is the Westmorland Elementary School District.

*Source: City of Westmorland Homepage: http://www.cityofwestmorland.net/about-us/.*

## HEBER COMMUNITY

Heber is an unincorporated community located midway between El Centro and Calexico in Imperial County, approximately 15 miles southeast of NAFEC. In 2010, it had 4,275 people, which was an increase of 40 percent from the 2000 population of 2,566. It was one of the original communities founded by the Imperial Land Company in 1903 as part of an effort to bring agriculture to the barren desert valley. Agriculture remains a significant part of the local economy. The Heber Public Utility District commissioned a Fiscal Analysis Report in 2009 to study the effects of incorporation for the community. Incorporation has yet to be initiated.

*Source: Initial Fiscal Analysis Incorporation of the City of Heber, CA 2009.*

## SEELEY COMMUNITY

Seeley is a census-designated place in southern Imperial County about 12 miles west of El Centro and approximately two miles south of NAFEC. NAFEC was built proximate to Seeley in 1946 and remains an important training center in the southwest region of the U.S. In 2010, Seeley had a population of 1,739. It was first settled with other communities in the valley in the early 1900's to bring agriculture to the valley. Although agriculture remains an important part of the local economy, high unemployment rates continue to persist in the area.

*Source: Seeley Urban Area Plan 1994*

## STUDY AREA GROWTH TRENDS

The following section provides a profile of the study area's population growth, housing trends, and median home values. This information assists in setting the regional context and growth potential for the JLUS study area.

## POPULATION

Population data is based on the 2010 data provided by the California Department of Finance. Population numbers show the growth or decline in people in a geographical area. The following information provides a comparison of the changes in population in the NAFEC JLUS study area from 2000 to 2010.

Imperial County's total population in 2010 was 174,528, which was a 22.6 percent increase from the year 2000. Most of this growth is attributed to outward migration from urban centers to rural suburbs, which offer a lower cost of living. The Mexicali Free Trade Zone located just across the US-Mexico border has also spurred growth in the regional area due to the removal of trade restrictions between North America and Mexico established by the 1994 North American Free Trade Agreement. This allows for products to be sold without incurring certain national and state taxes. This encourages businesses and other land uses (i.e. residential) to locate in areas near and around the trade zone to promote trade.

The population figures represent the permanent population in Imperial County, but do not consider the temporary population surges associated with the region's tourism industry or migration from seasonal agricultural employment. Table 2-1 shows the 2000 and 2010 census totals and percent change in populations of Imperial County, its cities, and census-designated places.

The county and all the incorporated cities experienced an increase in population. By population, the City of El Centro is the largest city in Imperial County, followed by Calexico and Brawley. Calexico had the greatest population growth with the addition of over 11,000 people, a 42.3 percent increase; this rate was more than four times the growth rates of the state of California or Imperial County. In contrast, the City of Imperial had the highest percentage of growth with a 95.2 percent increase and almost doubled its population during the 10-year period. In addition, Brawley and El Centro also increased in size, but at rates of 13.2 percent and 12.6 percent, respectively.

## FUTURE POPULATION PROJECTIONS

The Imperial County overall growth rate (22.6%) was more than twice that of the state of California (10%). Imperial County continues to attract residents with its $1 billion a year agriculture industry, lower costs of living, proximity to San Diego, the U.S.-Mexico port of entry, and the Mexican Free Trade Zone. Table 2-2 illustrates the forecasted growth trend for Imperial County.

**Table 2-2. Forecasted Populations in Imperial County, 2000 – 2050**

| Imperial County | | | | | |
|---|---|---|---|---|---|
| **2000** | **2010** | **2020** | **2030** | **2040** | **2050** |
| 175,566 | 187,663 | 228,164 | 256,872 | 256,872 | 285,308 |

*Source: California Department of Finance: Demographic Research Unit*

Imperial County is expected to continue to see a steady increase in its population over the next 40 years and is projected to experience an average annual growth rate of 10 percent.

## HOUSING TRENDS

Housing trends are an important indicator of economic activity and vitality, as they demonstrate the population growth or decline relative to new residential construction within an area. They also represent market decisions relative to home ownership versus rental properties. Ultimately, housing trends potentially indicate future development and the types of residential and commercial development to come. The following information portrays the housing market trend and median monthly gross rents, percentage of base allowance for housing (BAH), and median home values within the JLUS study area. Table 2-3 shows the change in median monthly gross rents for the region from 2000 to 2010.

**Table 2-3. Median Monthly Gross Rent in Surrounding Jurisdictions, 2000 – 2010**

| Jurisdiction | 2000 | 2010-2006 | Delta | Percent Change |
|---|---|---|---|---|
| California | $747 | $1,147 | $400 | 53.5% |
| ❖Imperial County | $504 | $682 | $178 | 35.3% |
| Brawley | $481 | $671 | $190 | 39.5% |
| Calexico | $517 | $736 | $219 | 42.4% |
| Calipatria | $481 | $556 | $75 | 15.6% |
| ❖El Centro | $527 | $692 | $165 | 31.3% |
| Holtville | $493 | $619 | $126 | 25.6% |
| ❖Imperial | $597 | $677 | $80 | 13.4% |
| Westmorland | $423 | $612 | $189 | 44.7% |

❖ *Indicates jurisdiction is a partner in the development of the JLUS.*

*Source: California Department of Finance, Imperial County Housing Characteristics, 2000, 2006-2010.*

From 2000 to 2010, the median gross rent increased by a range of 13.4 percent to 44.7 percent in the jurisdictions in and around the JLUS area. In the 10 year span, the communities of Calexico and Westmorland experienced the greatest jump of gross median rent, an increase by almost half as much as reported in 2000.

Relative to the NAFEC trainees and permanent party personnel rates, the median gross monthly rent for all communities in Table 2-3 is lower than an Enlisted Sailor's (E-1) monthly income, which includes BAH. The BAH is a stipend given to military personnel who choose to live off base or cannot be accommodated in on-base housing and is designed to augment the costs of living associated with private sector arrangements including home or apartment rent, utilities, and renter's insurance.

**The BAH is determined by pay grade, local area rental market, and dependent status.**

While BAH rates for NAFEC military personnel may vary by rank and dependent status, the rate for an E-1 in Imperial County ranges from $726 (single) to $969 (with dependents). Excluding the cost of utilities and renter's insurance, this figure is within 10% of the median monthly rate in Imperial County as referenced in Table 2-3. This means that an enlisted soldier should be able to locate affordable housing within the JLUS study area.

*Source: www.defensetravel.dod.mil/pdcgi/bah/bahsrch.cgi*

## HOUSING VALUE TRENDS

Housing value trends assist in illustrating the changes in land and home values relative to market fluctuations. These fluctuations can be indicative of development activity or inactivity as well as the location or migration patterns of populations. Table 2-4 reports the median housing value trends in the study area from 2000 to 2010.

**Table 2-4. Median Housing Values, 2000-2010**

| Jurisdiction | 2000 | 2010 – 2006 |
|---|---|---|
| California | $211,500 | $458,500 |
| ❖Imperial County | $100,000 | $192,600 |
| Brawley | $97,800 | $181,500 |
| Calexico | $108,200 | $209,900 |
| Calipatria | $76,200 | $124,900 |
| ❖El Centro | $104,300 | $211,300 |
| Holtville | $93,500 | $187,800 |
| ❖Imperial | $101,600 | $228,700 |
| Westmorland | $84,000 | $164,600 |

*❖ Indicates jurisdiction is a partner in the development of the JLUS.*

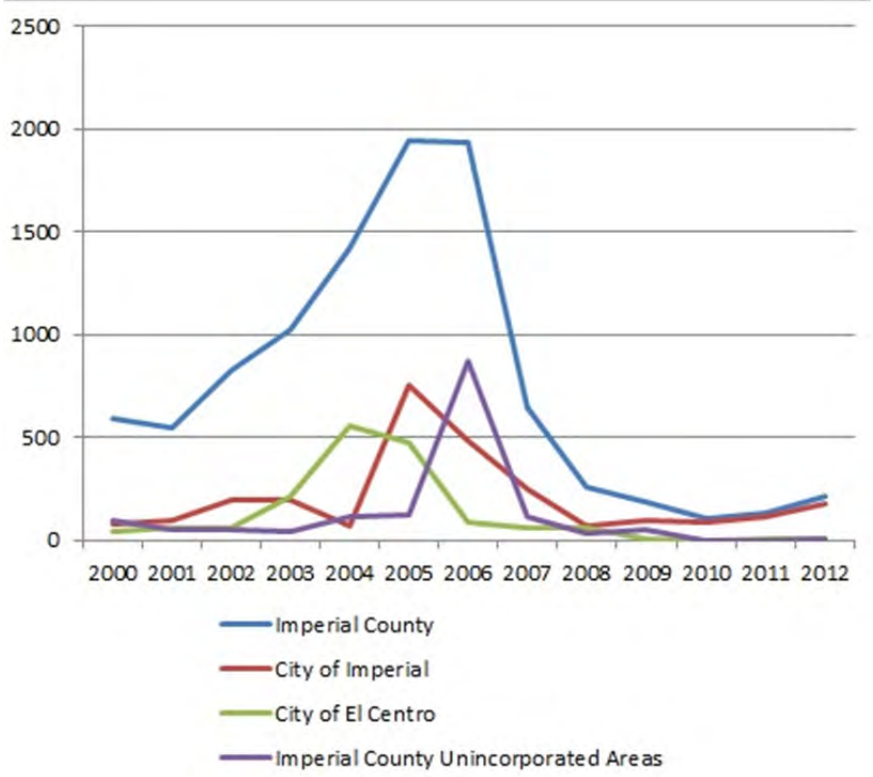
*Source: California Department of Finance: Demographic Research Unit*

The median housing values have more than doubled in some cases, which translate into higher rents and mortgages as well as increased monthly living expenses for area residents. These sudden increases can strain the affordability of the housing market close to NAFEC, which, in turn, can lead to increased commuting distances by military personnel who are priced out of the local housing market. The growth of the housing market can also be determined by the number of building permits filed with Imperial County. Records since the year 2000 show the large growth seen in the housing supply in the early 2000's followed by a sharp decline in new housing construction consistent with the national economic downturn.

*Source: California Department of Finance, Imperial County Housing Characteristics, 2000, 2006-2010*

Figure 2-1 shows the supply of newly constructed single family housing units between 2000 and 2012 in Imperial County as well as the major population centers in the county. This growth demonstrates the shift from agricultural uses to residential and commercial uses as experienced throughout the county during this time period due to the spillover of suburban growth from San Diego County.

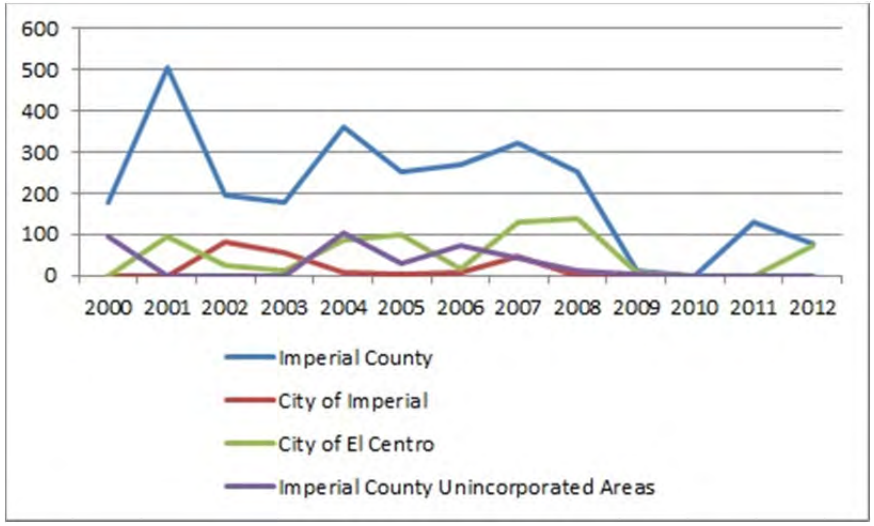
**Figure 2-1. Single-Family Building Permits in Imperial County, 2000 – 2012**




*Source: United States Census Bureau 2000 – 2012*

Housing starts are further seen in the availability of multi-family housing (housing with two or more units such as apartments and condominiums). Figure 2-2 shows a similar downturn in new construction since the start of the recession, which began in 2007.

**Figure 2-2. Multi-Family Building Permits in Imperial County, 2000 – 2012**




*Source: United States Census Bureau 2000 – 2012*

These trend lines indicate building permits for new construction of single-family residential were consistent in past years with the national economy and the recent recession that began in 2007. In the last few years, though, the County and City of Imperial have seen a slow, steady increase in single-family construction. On the contrary, the City of El Centro and the remaining communities in the county have seen little to no increase in the single-family residential construction based on building permits reported by the 2010 Census.

The availability of affordable multi-family dwellings is an important factor to consider for military compatibility, as some personnel stationed at NAFEC may need to live off-base in the communities. NAFEC military personnel need access to affordable, short- to mid-term residencies for the duration of their assignments. Therefore, it is important for the communities within the JLUS study area to provide housing stock that meets the needs of the residents and the military personnel who are stationed at NAFEC for a period of anywhere from two to 16 weeks.

Figure 2-2 shows that the City of El Centro appears to be the only community with an uptick in building permits for multi-family residential construction. This uptick could be a beneficial factor for the City since NAFEC has military units in and out of the area year-round requiring short- to mid-term leasing arrangements. Interestingly, the trend also shows a decrease of building permits issued by the county for multi-family residential, while the City of Imperial and the remaining communities in the county show little to no progress since the recession in issuing multi-family residential building permits.

## ECONOMY

The historic economic engine of Imperial County has been the export of agricultural commodities throughout the U.S., which continues to play a significant role in the local economy. In addition to agriculture, the DOD through NAFEC, is a major employer in Imperial County and provides over $105 million annually in economic benefit, more details about economic benefit can be found in Chapter Three, Military Profile. While the geography and climate of Imperial County have been ideal for irrigated agriculture, the number of agriculture-based jobs has been in steady decline. The resulting diversification of the economy in recent years has provided alternative sources of employment in the sectors of government, education services, healthcare, social service, and retail trade, which now comprise 65 percent of all non-farm employment.

*Source: Imperial County Comprehensive Economic Development Strategy 2012-2017.*

In 2010, the median household income for Imperial County was only 57.4 percent of California's median household income. Table 2-5 further compares the changes in median household incomes for the state of California and the communities in the study area.

**Table 2-5. Median Household Income Change, 2000 – 2010**

| Jurisdiction | 2000 | 2010-2006 | Delta | Percent Change |
|---|---|---|---|---|
| California | $47,493 | $60,883 | $13,390 | 28.2% |
| ❖Imperial County | $31,870 | $38,685 | $6,815 | 21.4% |
| Brawley | $31,277 | $39,676 | $8,399 | 27% |
| Calexico | $28,929 | $34,848 | $5,919 | 20.5% |
| Calipatria | $30,962 | $38,586 | $7,624 | 25% |
| ❖El Centro | $33,161 | $38,481 | $5,320 | 16% |
| Holtville | $36,318 | $36,202 | ($116) | -.3% |
| ❖Imperial | $49,451 | $54,617 | $5,166 | 10.4% |
| Westmorland | $23,365 | $28,571 | $5,206 | 22.3% |

*❖ Indicates jurisdiction is a partner in the development of the JLUS.*

*Source: California Department of Finance, Housing Characteristics*

All of the communities within the NAFEC JLUS study area, with the exception of Holtville, experienced significant increases in median household income from 2000 to 2010. The median household incomes for Imperial County are derived through several economic sectors within the communities. Significant industries in Imperial County include the federal, state, and local governments; agriculture; and other services. The four largest employers in Imperial County employing between 1000 to 4,999 employees are:

- Calipatria State Prison
- Centinela State Prison
- Maui Harvesting
- National Beef Packing

Furthermore, the following businesses each employ between 500 to 999 employees:

- NAFEC
- Imperial County Office of Education
- Imperial Date Gardens
- Paradise Casino
- Pioneer Memorial Hospital

*Source: California Employment Development Department, http://www.labormarketinfo.edd.ca.gov/majorer/countymajorer.asp?CountyCode=000025*

## Current Development Overview within the Study Area

Land uses throughout the JLUS study area range from open space and agriculture to the residential and urban population centers of El Centro and Imperial, with varying sizes of employment and population levels throughout. The cities of Imperial, El Centro, and Holtville lie east of NAFEC. The community of Seeley is found immediately south of the base, while the cities of Westmorland, Brawley, and Calipatria are to the north. The west side of the study area is comprised mostly of open space, agriculture fields, and state and county parks, which follow the Cuyamaca Mountains that separate Imperial and San Diego counties.

The area surrounding NAFEC is a mix of agriculture, rural residential, and recreation / open space uses. Urban development exists primarily east of the base in the cities of Imperial and El Centro and along the urban corridor where the other communities are located. Other development surrounding the base ranges from rural residential to agricultural residential. Development adjacent to NAFEC is characterized by the following:

### NORTH

The northern border of NAFEC is bounded by agriculture, open space, mountains, and desert.

### EAST

The eastern side of NAFEC is a mix of agricultural and rural residential uses. Approximately 8 and 11 miles east of the base are the incorporated cities of El Centro and Imperial, respectively.

While there are no current proposed development projects slated for the area between the east boundary of the base and west boundaries of these communities, outside their city limits and sphere of influence (SOI), there a projects that have been phased and approved in the county to the east of NAFEC and its ranges.

### Glamis Specific Plan Area

The Glamis Specific Plan Area (SPA) covers approximately 160 acres of recreational lands and uses and is located about 27 miles east of the City of Brawley. Highway 78 runs through the middle of this area.

The uses identified in this plan area include transient lodging, retail and service commercial, recreational vehicle and mobile home parks, and community facilities. The intent of this area is to serve the public as a recreational spot associated with the Algodones Sand Dunes, thus permanent homes are not intended for this area. In addition, the preservation of viewsheds from Highway 78 and throughout this open space is encouraged.

### Holtville Airstrip Specific Plan Area

The Holtville Airstrip SPA encompasses 1,830 acres of land approximately six miles east of the City of Holtville. This site is the former site of an auxiliary air station for the U.S. Navy. It is currently not in use. This site is currently proposed for a regional cargo and airport hub for the county. The land is currently zoned and is anticipated to support commercial, industrial, community facilities, and potentially some agricultural packing uses. Residential is not permitted in this SPA.

### Mesquite Lake Specific Area Plan

The Mesquite Lake SPA covers approximately 7,360 acres and is located between the cities of Imperial and Brawley along SR 111. This SPA is planned for all categories of industrial uses, but no residential uses are permitted. In addition, this area is rich in mineral resources ideal for geothermal plants. The Imperial County Board of Supervisors approved this area for the California Ethanol and Power Plant, a synergistic use with the existing Holly Sugar Plant.

### SOUTH

The southern boundary of NAFEC contains the main entrance to the base and is adjacent to rural residential and agriculture farmlands. About a mile south of the base is the community of Seeley, an unincorporated town-site. County Highway S80 and I-8 are further south and are the main connectors to the base from the city of El Centro, in addition to other local roads.

Other than the Seeley Community, no other major development occurs near the installation to the south; although, it should be noted that the community of Seeley is slated for additional housing development.

### WEST

West of the NAFEC boundary are agricultural lands and the New River with mainly desert and mountain ranges beyond the river. There is one proposed development in this area, the Desert Springs Oasis Specific Plan Area.

### Desert Springs Oasis Specific Plan Area

The Desert Springs Oasis Specific Plan Area (SPA) is a proposed SPA that will encompass approximately 1,105 acres in southwest Imperial County. The proposed project site will be located northwest of the Boley and Westmoreland Roads intersection. The proposed location is bound by lands under control of the U.S. Navy to the north and BLM to the west, Boley Road and the Fillaree Canal to the east, and agriculture land to the south.

The proposed plan currently supports recreational uses such as water sports, RV lots, a marina, motor sports car recreation, and retail and commercial facilities along with semi-permanent and transient residential uses. The plan concept and intent is to serve the Imperial County residents and visitors as a recreational resort.

### Renewable Energy Projects in Imperial County

#### *Geothermal Energy Projects*

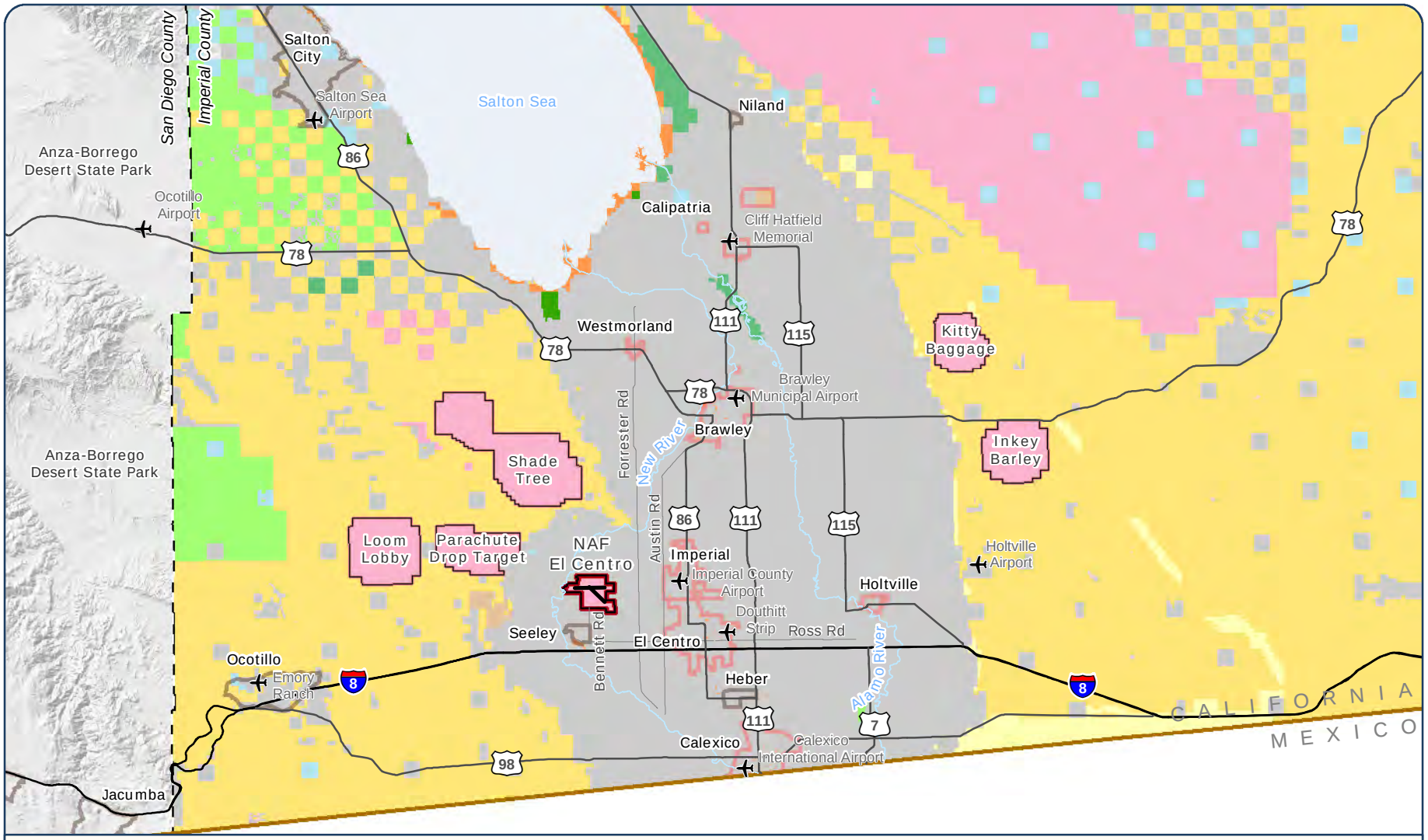
There are currently 20 geothermal plant projects within Imperial County, all of varying sizes. Some of these projects are either situated under the NAFEC MOA, MTRs or under low-flying aircraft flight paths, which are discussed in more detail in Chapter 3, Military Profile. These projects support medium and heavy industrial.

#### *Solar Energy Projects*

There are currently 28 solar plant projects within Imperial County; all are of varying sizes. Some of these projects are either situated under the NAFEC MOA, MTRs or under low-flying aircraft flight paths, which are discussed in more detail in Chapter 3, Military Profile. These projects support medium and heavy industrial.

## Land Ownership Overview within JLUS Study Area

In addition to the development around the installation, the area surrounding and that comprises the NAFEC ranges is majority undeveloped, private lands, or federally-administered lands for use by recreationalists or protected wilderness areas and open space. This composition can represent both challenges and opportunities for the Navy as it relates to military compatibility. The challenge is primarily centered on various land management agencies in the area that use different land use controls to manage lands. Table 2-6 shows the acreage and percent of the land ownership by agency within Imperial County. In addition, Figure 2-3 illustrates this land ownership in the county.




**Legend**

**Federal Land**
- Bureau of Land Management
- Bureau of Reclamation
- Department of Defense
- Fish and Wildlife Service

**State Land**
- Department of Fish and Game
- Department of Parks and Recreation
- State Lands Commission
- Other

**Other Ownership**
- Local Government
- Private

- NAF El Centro
- Range
- Incorporated City
- Unincorporated Community
- International Boundary
- County Boundary
- Interstate
- US Highway
- Major Road
- River
- Airport

0 5 10 Miles

Matrix Design Group

Sources: Imperial County, 2013; NAF El Centro, 2013; Caltrans, 2013; CAL FIRE, 2013.

**Figure 2-3**
**Land Ownership in the JLUS Study Area**

*Fig_2-3_NAFEC_JLUS_Ownership_20140129_JKC.pdf*

**Table 2-6. Land Ownership in Imperial County**

| Agency | Acres | Percent |
|---|---|---|
| Bureau of Indian Affairs | 6,210 | 0.23% |
| Bureau of Land Management | 1,237,108 | 46.24% |
| Bureau of Reclamation | 33,754 | 1.26% |
| California Department of Fish and Wildlife | 10,309 | 0.39% |
| California Department of Parks and Recreation | 72,355 | 2.70% |
| California State Lands Commission | 40,602 | 1.52% |
| Department of Defense | 398,004 | 14.88% |
| Local Government | 9,811 | 0.37% |
| Non-Profit Conservancies and Trusts | 1,613 | 0.06% |
| Other State Lands | 2,621 | 0.10% |
| Private Lands | 850,952 | 30.80% |
| US Fish and Wildlife Service | 12,201 | 0.46% |

*Source: California Department of Forestry and Fire Protection, Multi-Source Land Ownership, 2011.*

## TRANSPORTATION

The highway system in the study area consists of I-8 and State Highways 7, 78, 86, 98, 111, 115, and 186, which are the primary transportation corridors in the county as illustrated by Figure 2-4. I-8 is the major east-west connector, linking Phoenix, Arizona to San Diego, California. State Route (SR) 111 runs north to south, connecting the area to Los Angeles to the north and Mexico to the south. Some segments of SR 111 are an expressway. The cities of El Centro and Imperial comprise the primary air and rail transportation hub closest to the JLUS study area.

The Imperial Valley Local Transit Authority (IVT) is administered by Imperial County Department of Public Works and funded by the Imperial Valley Association of Governments (IVAG). Funding is provided annually through the adopted IVAG Transit Finance Plan. The sources of the funding include, State Transit Assistance (STA), State Transportation Development Act (TDA), Federal 5307 and 5311 funds, and local fare revenue.

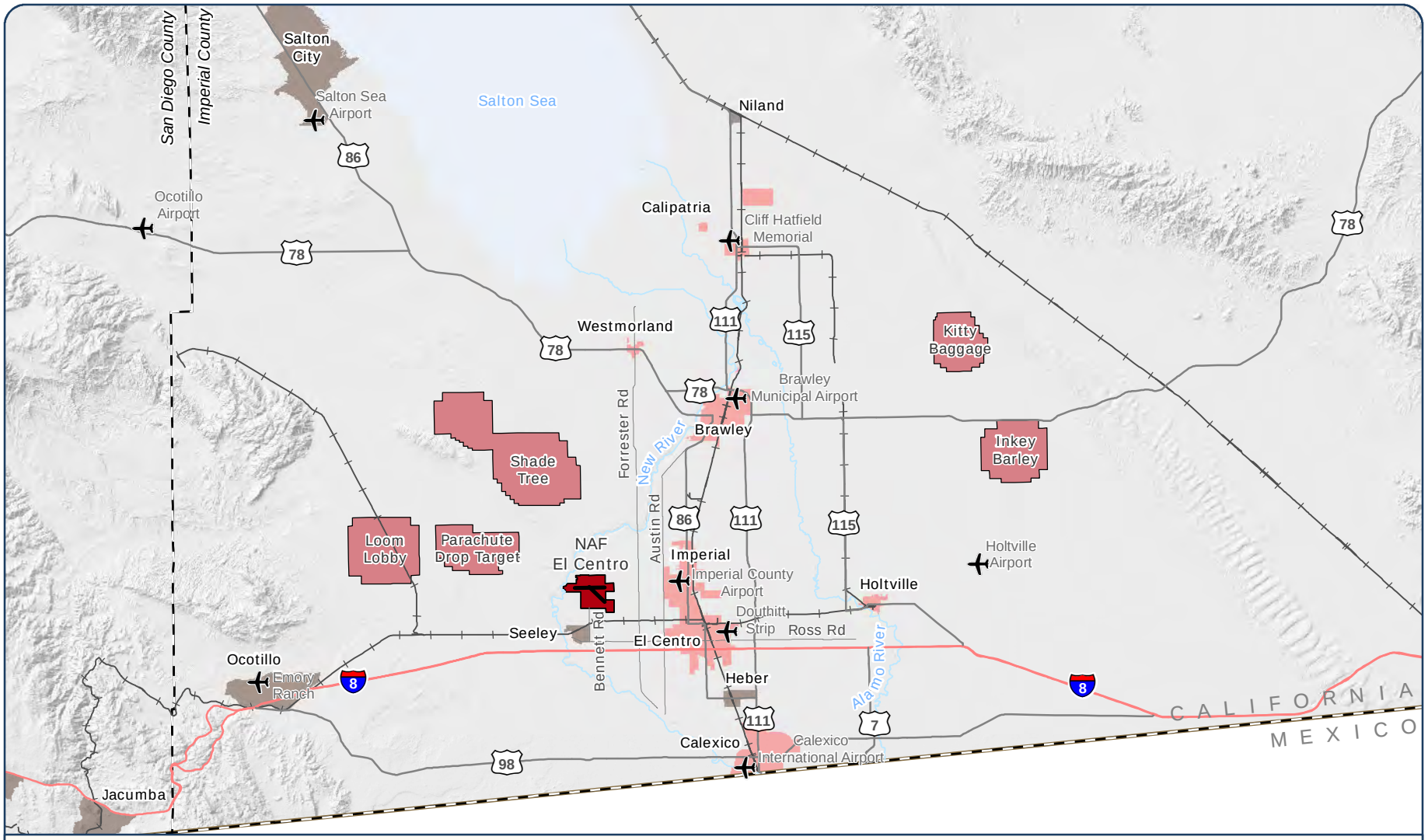
IVT utilizes several types of service that includes routes in the Primary Service area located between Brawley, Imperial, El Centro and Heber to Calexico. The Secondary Service area is Holtville, Seeley, Niland, Calipatria and Westmorland. The Remote Zones (lifeline service) include Ocotillo, Winterhaven, and the East side of the Salton Sea.

The routes are designed to provide connections between the cities in the Primary Service area where 80% of the population lives, works, or studies. The Primary Service area accounts for approximately 28 routes with multiple trips daily Monday through Friday. Service is offered on a reduced schedule on Saturdays with no service on Sundays.

The local roadway system, illustrated on Figure 2-5, consists of expressways, prime arterials, minor arterials, major and minor collectors, and residential streets. The intent of this local roadway system is to provide mobility and access to the various communities within Imperial County along the urban corridor, State Highway 111. In addition, some of these roadways serve county residents and visitors by providing interstate and regional access.

**JLUS Observation**

**Currently, NAFEC is not connected to the public transit system.**




**Legend**

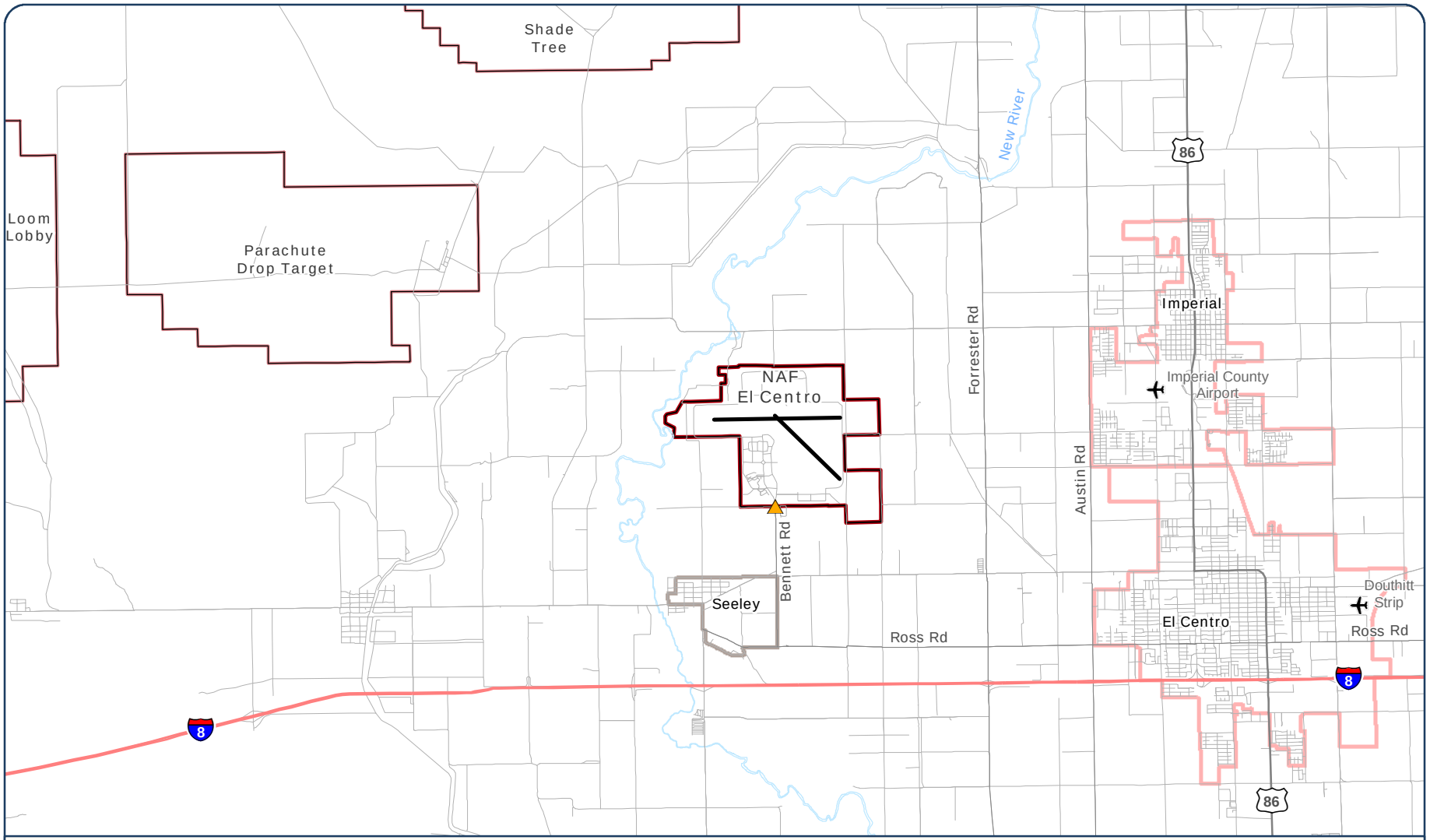
- Interstate
- US Highway
- Major Road
- Railroad
- Airport
- NAF El Centro
- Range
- Incorporated City
- Unincorporated Community
- International Boundary
- County Boundary
- River

0 5 10 Miles

Source: Caltrans, 2013.

*Fig_2-4_NAFEC_JLUS_Transportation_20140128_CJM.pdf*

**Figure 2-4**
**Transportation Network**




Sources: Caltrans, 2013; TIGER, 2012.

*Fig_2-5_NAFEC_JLUS_Local_Roadway_System_20140128_CJM.pdf*

**Figure 2-5**
**Local Roadway System**

## AIR TRANSPORTATION

There are seven airports within or adjacent to the study area. Each one is described in full detail in the "Airport Land Use Compatibility Plan" as to its classification as an international, county, municipal, or other and the types of services it provides such as fuel, line, and maintenance services as well as charter services, restaurants, and ground transportation services to the community. A brief summary of each airport and its location from NAFEC is given below.

### Imperial County-Owned Airports

- Imperial County Airport is the county's main airport and primarily a general aviation facility. It is located just north of El Centro, within the City of Imperial, and approximately four miles west of NAFEC. It has limited commercial flight service that is subsidized by the federal Essential Air Service (EAS) program. The EAS is a government program that guarantees commercial air service to small communities in the United States. This provides minimum levels of air service to communities that would not otherwise benefit from EAS. In order to accommodate the shared airspace due to the close proximity of the airfields, NAFEC airspace is truncated at Forrester Road. Furthermore, aircraft must maintain altitudes above 2,500 feet when overflying Imperial County Airport before they can begin their descent to land at NAFEC. Aircraft associated with NAFEC are to remain west of Forrester Road (when possible) to avoid Imperial County airport traffic.
- Holtville Airport is a public use general aviation airport owned by Imperial County. The 1,100 acre facility is located roughly 5 miles east of Holtville, approximately 20 miles east of NAFEC. The airport at Holtville was constructed as the Auxiliary Air Station Holtville by the U.S. Navy during World War II. It has the longest and widest runway (plus a second, closed runway) and greatest acreage of any of the six public-use airports in the county, but has essentially no other service facilities, including hangars, structures, fueling stations, or repair facilities.

### Municipal Airports

- Brawley Municipal Airport is a single runway, public use general aviation airport that is owned by the City of Brawley. It is located on the northeast side of the city next to State Hwy 78, approximately 8 miles northeast of NAFEC. It had approximately 5,500 flights in 2012. The airport offers a full range of general aviation services including major airframe and power plant repair services.
- Calexico International Airport is a public use general aviation field that is owned by and located in Calexico. It has a single 4,670-foot long east-west runway. It is located 15 miles south of I- 8 on State Route 111 approximately 7 miles southeast of NAFEC. It used in part to service maquiladora factories in nearby Mexicali, Mexico. In 2011, the airport had approximately 7,820 flights - the majority of which were general aviation flights. The airport also offers full aviation services including fueling, repair, and maintenance needs.
- Cliff Hatfield Memorial Airport is a public use general aviation airport that is owned by and located in Calipatria. It has a single east-west runway and is located in the northwest corner of the city, approximately 12 miles northeast of NAFEC. In 2012, approximately 1,500 flight operations took place at the airport.

### Privately-Owned Airports

- Salton Sea Airport is a privately owned, public use general aviation airport in Salton City. It is located south of the central business district on the west side of the Salton Sea, approximately 19 miles northwest of NAFEC. In 2011, it had 350 flights with occasional ultra-light activity on the weekends.
- Douthitt Strip Airport is a private use facility located on the east side of El Centro. The formerly military airfield is home to a small number of single engine aircraft and offers minimal services and has minimal air traffic.
- Emory Ranch Airport is a privately owned airstrip northwest of Ocotillo in west Imperial Valley along I-80. It is approximately 12 miles southwest of NAFEC. The airstrip consists of a paved runway and offers no services.

In addition to the current airport facilities in the county, Imperial County conducted an "Airport Feasibility/Site Analysis Study" in 2007 to consider alternative growth options for air traffic throughout the county. While there are several proposed sites for a regional air cargo facility as shown in

Figure 2-6, the Highway 7 (Site E) and Hawk Road (Site E-1) have been identified as strong possible alternatives. The facility would enhance the county's ability to handle air cargo and traffic throughout the Southern California and Northern Mexico region. Elements of the proposal include building a facility with a 12,000 foot runway to support larger aircraft than can currently travel through county facilities. Feasibility studies were conducted to consider impacts on current land uses, transportation infrastructure, as well as airspace congestion.

Three proposals were put forward: two scenarios focusing on upgrading the current county airport in El Centro and one which would redevelop the Holtville airport as the new, larger facility. Airspace feasibility studies identified the current county airport location as the most optimal location to reduce potential airspace conflicts with NAFEC, but the Holtville location was the most financially feasible due to the lack of surrounding development, which would otherwise limit airport expansion. Initial development would include building an entirely new runway, terminal, hangars, and all services. Costs were estimated between $85 million to $91 million with significant funding options available through state and federal grants.

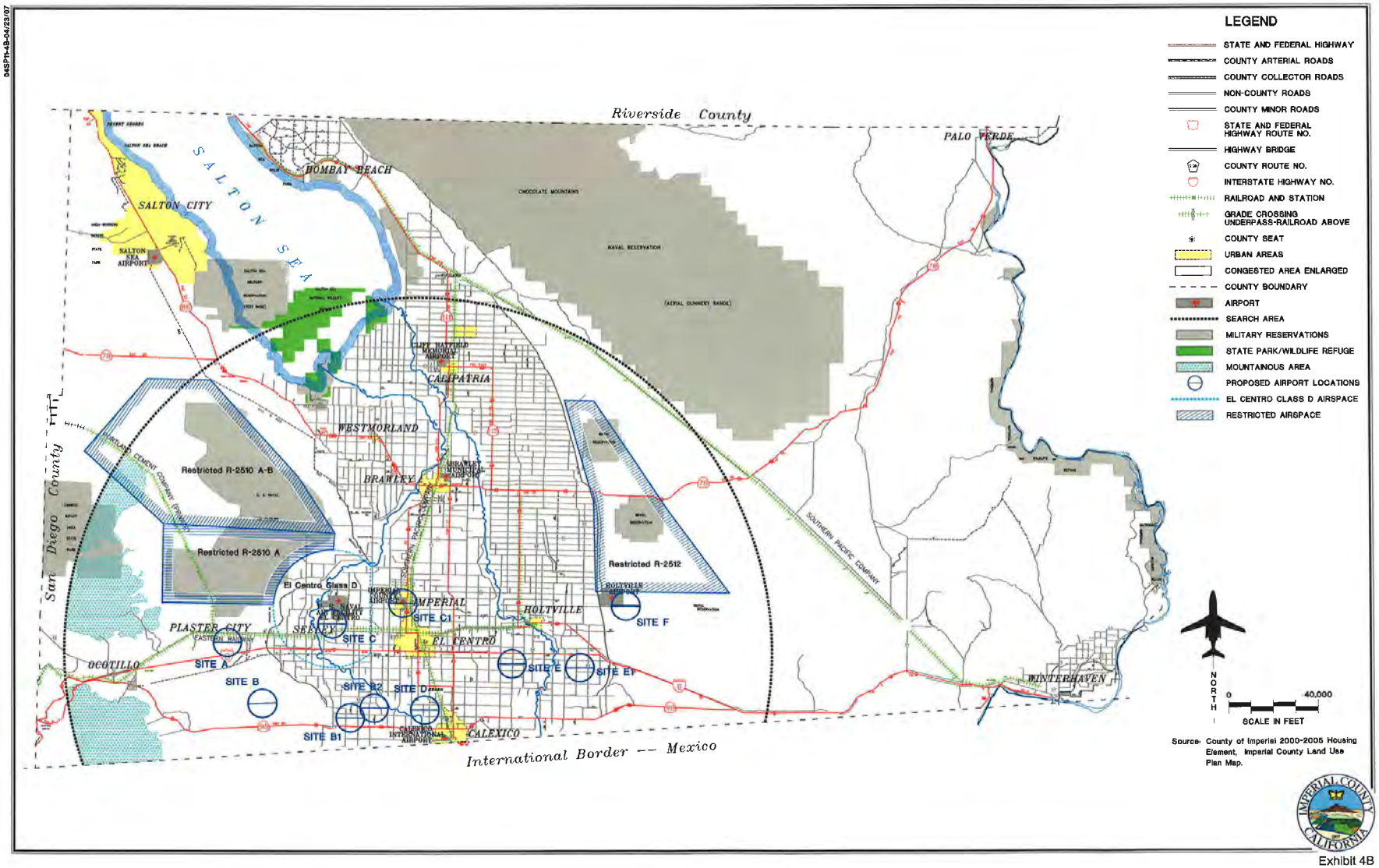
The proposed airport would function to increase the ability of regional air traffic services and, especially, to assist in the moving of air freight cargo from the maquiladoras of Mexicali in northern Mexico into the U.S. This would serve to relieve pressure from other regional inland air cargo airports and reduce congestion on freeways from cargo transportation.

## WATER AND SEWER

The primary potable water source in the JLUS study area is the Colorado River via the All American Canal, which supplies a vast network of smaller canals throughout the valley. There are several long-standing agreements and treaties delineating the water rights to assure a sufficient water supply to both the farm communities that use it for irrigation and urban consumption. The canal system is administered by the Imperial Irrigation District (IID).. The District was formed in 1911 to acquire properties of the bankrupt California Development Company and its Mexican subsidiary. By 1922, the District had also acquired the 13 mutual water companies that had developed and operated the distribution canals throughout the Imperial Valley.

Since 1942, water has been diverted at Imperial Dam on the Colorado River through the 80-mile-long All-American Canal, all of which the IID now operates and maintains. The IID is the largest irrigation district in the nation and supports one of the largest agricultural counties in the nation. Of the water IID transports, 98 percent is used for agriculture throughout the Imperial Valley. The remaining 2 percent is delivered to nine Imperial Valley cities that treat it to safe drinking water standards and sell it to their residents for use and consumption. Population growth in Imperial Valley as well as other states with access to the Colorado River continues to add pressure to agriculture interests to irrigate less land so water may be diverted to urban areas.

The IID continues to address water use concerns by developing policies and agreements to ensure the sustainability of this water source for the region. Such policies include the "1998 IID/SDCWA Conservation and Transfer Agreement" between the IID and the San Diego County Water Authority (SDCWA) and the "Quantification Settlement Agreement." Specifics of these agreements include water conservation measures and transfer and exchange projects among the IID, Coachella Valley Water District, the Metropolitan Water District of Southern California, the State of California, and the U.S. Department of Interior.




Source: Airport Feasibility / Site Analysis Study for Imperial County, 2007.

**Figure 2-6**
**Proposed Sites for the Regional Air Cargo Facility in Imperial County**

*Fig_2-6_NAFEC_JLUS_Air_Cargo_Facility_20140128_CML.pdf*

## NATURAL AND CULTURAL / HISTORIC RESOURCES

Imperial County encompasses an area of diverse natural resources and amenities, such as recreational areas including the Algodone Sand Dunes and cultural resources such as Fort Romualdo Pacheco.

The presence of numerous parks, wildlife areas, and recreation areas provide people opportunities to enjoy the outdoors and natural environment. As described in the following pages, the parks, wildlife and recreation areas contribute to the unique character of this area. Comprehensive planning can play a significant role in the protection of and continued success of these areas.

A notable historic resource in the study area is Fort Romualdo Pacheco. The fort is located north-northwest of the installation near West Worthington Road proximate the New River. It is a Mexican fort constructed in the mid 1820s, and was the only fort constructed in Alta California and occupied for a short time. It was designated as an official California Registered Historical Landmark in the early 1980s. While the fort is the resource discussed in this chapter and in Chapter 5, there are several other cultural and historic resources in the area including on NAFEC.

NAFEC currently hosts 17 archeological sites on-installation. In a 1993 survey, the report identified eight archeological sites and nine isolates. Isolates are historic / cultural resources that do not fit within one of the five National Register types of resources—building, structure, object, site, or district. Isolate may also refer to the presence of a resource and may be defined as a minor resource.

Furthermore in the survey, it was identified that the buildings that predate 1952 were not eligible for National Register of Historic Places designation. The buildings did not meet the criteria to be placed on the register.

### County Parks

Imperial County manages a number of parks with four classifications based on factors such as size, number of amenities, location, ease of access, and oversight. The four classifications are: Limited Facility, Neighborhood, Community, and Regional. There are other lands used for recreation and / or habitat protection managed by federal and state entities. A total of 250 acres is under county ownership.

The county has set a standard to provide five acres of parkland for every 1,000 residents. Currently, the county is in a parkland surplus based on the gross parkland acreage of 250 acres and only a (2008) parkland need for about 180 acres. The county's parks are located primarily in the Imperial Valley region, including the Salton Sea shores and the western half of the county.

State and federal parks are typically large pieces of land and may include hundreds of acres under wildlife preserve with designated areas for human use. These parks usually attract visitors from outside the county and typically have outdoor recreational opportunities such as trails for hiking, designated areas for camping and off-highway driving, and wildlife preserves where access is limited or prohibited. These parks are located outside of the county farmland area and must be accessed by motor vehicle.

### Limited Facility Parks

Amenities at this type of park are minimal and typically include one primary function and possibly some accessory uses. This type of park may be of any size and is usually located in the open desert area of the county. Examples of this park type include marinas, boat launching areas, and trail heads. This category includes:

- Palo Verde
- Osborne
- Niland Marina

### Neighborhood Parks

These parks are small, usually less than three acres, and are located within the confines of an unincorporated community and within walking distance of a residential district for ease of access by pedestrians. Typically these parks have two or three amenities such as playgrounds or other active uses and landscaped areas for passive, leisurely uses such as light walking and sitting. As these parks are pedestrian-oriented, they usually only have curbside parking. Often neighborhood parks are referred to as Pocket Parks when they are embedded within a residential block. These parks may be maintained by the county or an Assessment District, as is typical for newer subdivisions. These parks are:

- Heber (2)
- Marin Flora

### Community Parks

Larger than a Neighborhood Park and ranging from 3 to 80 acres, these parks are shared by the entire local community. This type of park is usually entirely within an unincorporated community and typically has a major active recreational element, such as athletic fields or courts, which is used by the entire community. Numerous onsite amenities, not usually available at a neighborhood parks, such as baseball fields, basketball courts, and larger picnic areas are located within a Community Park. These parks are easily accessible by pedestrians or by vehicles and typically include small onsite parking facilities. The following parks are Community Parks within Imperial County:

- Ocotillo
- Heber
- Salton City
- Desert Shores

### Regional Parks

Outside or inside of a community, but with ease of access from a major road, these parks are shared by the entire populace of the county. These parks are much like community parks except that they are typically larger and are meant to serve the entire county. In addition to sports fields and grassy leisure areas with picnic tables, a regional park is usually distinguished by a water feature such as a pond or lake. With the exception of pedestrians from nearby residential areas, regional parks usually are accessed by vehicle; hence, they include onsite parking facilities. Regional parks are typically maintained by the county, but may be maintained by a city or special district. Such parks are:

- Sunbeam Lake
- West Lake
- Heber Dues
- Red Hill Marina
- Pioneer's County Park

## STATE AND FEDERAL PARKS

The county contains large areas of state and federal parkland, which are described in the following paragraphs.

### State Parks and Wildlife Areas

*Imperial Wildlife Area*

The California Department of Fish and Wildlife (DFW) manages one wildlife area in Imperial County, the Imperial Wildlife Area, located on the northeast shore of Salton Sea. This area totals over 7,900 acres of wildlife parklands that the DFW owns and operates for both recreational activities and preservation of natural resources and habitat.

The state maintains four major park areas in the county, which include the Salton Sea State Recreation Area, the Picacho State Recreation Area, the Ocotillo Wells State Vehicular Recreation Area, and a portion of the Anza-Borrego Desert State Park. The Federal government's main parkland area is the Imperial Sand Dunes Recreation and Wilderness Area. Both federal and state parkland are in wilderness areas of the county, serving to protect wildlife habitat, while providing for outdoor recreational opportunities.

### Salton Sea Recreation Area

The Salton Sea State Recreation Area is located on the northeastern shore of the Salton Sea, north of Bombay beach, off of State Route (SR) 111. The park has many amenities, including campsites, nature trails, boat ramps, picnic tables, restrooms, RV hookups, and a visitor center. The park is easily accessible from SR 111 and includes onsite parking facilities. The park attracts visitors primarily from Southern California.

### Picacho State Recreation Area

Picacho State Recreation Area is located along a seven mile stretch of the Colorado River, about 24 miles north of Winterhaven. The park is difficult to access because the only road with which to access it is mostly unpaved. The park features hiking trails, campsites, boat ramps, picnic areas, restrooms, and recreational activities such as fishing, swimming, hiking, boating and kayaking.

### Anza-Borrego Desert State Park and Ocotillo Wells State Recreation Area

Anza-Borrego Desert State Park and Ocotillo Wells State Vehicular Recreation Area are two adjoining parkland areas in the western open desert area of the county. Both parks are accessible from SR 78, which connects to SR 86 near the Salton Sea. Anza-Borrego Park features nature trails, campsites, picnic areas, restrooms, RV hookups, and parking areas. However, there is another portion of the park that lies in the county that is not open to the public.

Ocotillo Wells primarily serves as an off-highway vehicle recreation area. The park offers visitors amenities such as pavilions (or ramadas), picnic tables, fire pits, restrooms, and pay showers.

## FEDERAL RECREATION AREAS

### Imperial Sand Dunes Recreation Area

Located in the southeast corner of California, the Imperial Sand Dunes are the largest mass of sand dunes in the state. Formed by windblown sands of ancient Lake Cahuilla, the dune system extends for more than 40 miles in a band averaging 5 miles wide. Widely known as "Glamis," the dunes offer a favorite location for off-highway vehicle (OHV) enthusiasts. The dunes offer scenic vistas and views, opportunities for solitude, and are a home to rare plants and animals.

Situated east of the Imperial Valley agricultural region, the dunes are bordered to the west by the Coachella Canal, a waterway diverting Colorado River water to agricultural lands further north. The dune system consists of three areas. The northernmost area is known as Mammoth Wash. This open area allows OHV use and offers a more isolated experience. South of Mammoth Wash is the North Algadones Dunes Wilderness. Established in 1994, this area is closed to all mechanized traffic and access is by foot or on horseback only. The southernmost boundary of the wilderness is State Highway 78; just south of this highway, the largest and most heavily used dunes are found and comprise the third area. With some restrictions, these primary dunes may be traveled in a southerly direction toward the Mexican border.

The park has federal oversight from the Bureau of Land Management. The park, with sand dunes that rise up to 300 feet, includes wilderness areas that are closed to the public to preserve wildlife habitats. Amenities at the park are limited. The park is accessible from I-8 and SR 78.

*Source: Imperial County General Plan Parks and Recreation Element, 2008; www.blm.gov/ca/st/en/fo/elcentrorecreation/ohvs/isdra/dunesinfo/generalinfo.html*

## BIOLOGICAL RESOURCES

According to the U.S. Fish and Wildlife Service (USFWS), there are multiple species of endangered, special concern, or interest living in the study area. The Sonny Bono Salton Sea National Wildlife Refuge Complex lies within Imperial County and abuts the NAFEC study area. The Salton Sea is home to two species of endangered fish, the desert pupfish and the Yuma clapper rail, and several species of birds. These birds are state-listed as either species of special concern or birds of interest and include: the burrowing owl, California brown pelican, mountain plover, American white pelican, black skimmer, eared grebe, Peregrine falcon, ruddy duck, yellow-footed gull, and shorebirds. According to the USFWS, the Salton Sea is an area of international significance for both large populations of migratory and shore birds in the western United States. Over 124,000 shorebirds comprising more than 25 species migrate through the Salton Sea along the Pacific Flyway.

According to the California DFW, there are 14 animals and three plants listed as threatened or endangered species in Imperial County. There are several birds, reptiles, and plants that are designated with special concern, which include the burrowing owl and the flat-tailed horned lizard. The species of concern, in particular the burrowing owl and the flat-tailed horned lizard, within the study area are discussed in greater detail in Chapter 5, Compatibility Assessment. Despite the presence of state-listed species within Imperial County, there are no threatened and endangered species within the JLUS study area.


## Introduction

This chapter provides an overview of the military profile including an overview of the history and current operations at NAF El Centro (NAFEC) within the NAFEC Joint Land Use Study (JLUS) study area.

Identifying and describing the various activities performed on the military installation provides valuable insight into the importance of NAFEC as a national defense strategic asset. This information enables stakeholders to make informed decisions about the future development and economic growth of communities proximate to NAFEC, which could potentially impact the existence and future role of the facility.

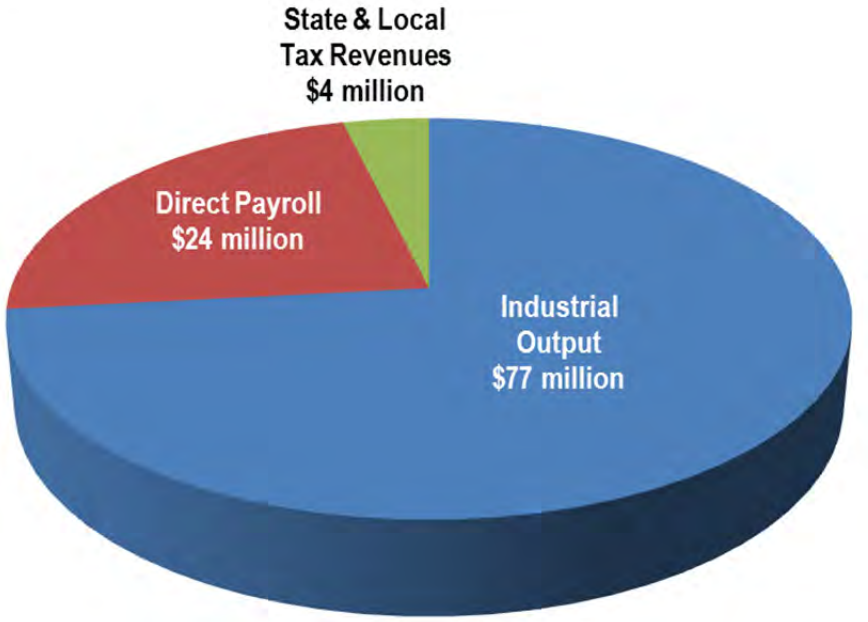
## Naval Air Facility El Centro Economic Impact

The NAFEC JLUS study area spans Imperial County in the southeast desert region of California. The study area assessment includes the Cities of El Centro and Imperial and the unincorporated community of Seeley. While agriculture is the leading industry in Imperial County, the Department of Defense (DOD) has a significant economic footprint in the regional and local economy of the County.

### INSTALLATION ECONOMIC IMPACT

NAFEC provides $105 million in economic benefit to the local community annually through salaries and contract expenditures. Figure 3-1 illustrates the total impact separated into typical economic impact categories: Industrial output, direct payroll, state and local tax revenues from transient personnel.

**Figure 3-1. Fiscal Year (FY) 2010 NAF El Centro Economic Impact**



More specifically, the industrial output category is composed of economic output from the following areas:

- $54.2 million from operations
- $11.3 million from visitor / transient personnel spending
- $11.6 million from payroll

*Source: Naval Air Facility El Centro Economic Impact and Community Involvement Report, 2011.*

### NAF EL CENTRO INSTALLATION DEMOGRAPHICS

The NAFEC primary mission as a refresher course and training facility does not require a large number of permanent personnel and as such, there were 597 government personnel (294 military, 303 civilians) employed in FY 10 at the facility. During any given month up to 1,600 personnel are in training at NAFEC.

## Naval Air Facility El Centro History

Originally planned for the Imperial County Airport, the Navy leased the site to create a Marine Corps Air Station in 1942. 1943 marked the official establishment of the Navy installation. For the next three years, the installation would operate as a Marine Corps Air Station until its disestablishment in 1946. That same year, the installation was reestablished as NAF El Centro.

In the first year, the facility was used primarily for aircraft storage, gunnery and rocket training. In 1947, the Navy acquired the leased land to make the installation a permanent asset in the nation's defense inventory.

Over the years, the installation has been home to a number of flying training and naval air units and missions. For the first 35 years, NAFEC was testing, evaluating, and designing the Navy's aeronautical escape system (operational ejection from aircraft). To complement the testing of ejection systems and provide a comprehensive evaluation approach, the Parachute Experimental Division was moved to the facility in 1947. To capitalize on these synergies and around the beginning of the Korean War, the Joint Parachute Facility was established with the Air Force which remained a part of NAFEC's testing mission organization for the next 27 years. This cohesive, joint effort prepared Navy and Air Force pilots for the nation's conflicts that would occur during these times.

In 1964, the US Naval Aerospace Recovery Facility was designated and in 1973, it was combined with NAFEC to form the National Parachute Test Range. In 1979, this mission component was transferred to another facility. However, today, NAFEC provides realistic training (including practice gunnery, bombing, carrier landings and air combat) to active and reserve military, other US forces and allied units, and its ranges are the primary training ranges for naval student pilot training. Allied forces have long recognized the cost efficiencies of training at NAFEC. The availability and close proximity of 54,000 acres of training ranges scattered over multiple areas, dedicated infrastructure and excellent weather and desert environment create an unparalleled detachment location. One training range associated with Restricted Airspace 2510 (R-2510) is the most used air-to-ground training range for fleet replacement squadron aircraft on both coasts.

Over its history, other notable events and milestones have occurred. In 1967, the Blue Angels began using NAFEC as their permanent winter training base. In 2008, new hangar construction to expand support capacity and efficiency was completed. In 2010, the United Kingdom helicopter training was consolidated at NAFEC. And now, NAFEC is home to the only west coast Navy training range where coordination with other agencies is not required for Unmanned Aircraft Systems (UAS) training.

## Installation Setting

NAFEC is owned by the DOD, Navy Military Department. The main base occupies 2,686 acres of land with oversight of an additional 54,000 acres of training ranges in California's extreme southeast desert region in Imperial County, California. It is bordered by unincorporated areas of Imperial County within the Imperial Valley. Within the Valley, the lands are used primarily for food crop cultivation. The installation lies approximately 11 miles due west of the cities of El Centro and Imperial.

The terrain surrounding NAFEC includes irrigated agricultural lands, desert, with rolling hills and steep mountainous topography. The New River runs west of the installation. Training and maneuver ranges are located on either

side of Imperial Valley and the Salton Sea and consist primarily of mountains except to the east, where sand hills and dunes are located and to the southeast, where the Yuma Desert of Arizona and the Gran Desierto of Sonora, Mexico can be found. The main base area of the installation is relatively flat with little vegetation.

*Source: http://www.militarymuseum.org/nafelcentro.html, http://www.globalsecurity.org/military/facility/el-centro.htm*

NAFEC includes two main types of uses: the main base area which consists of operational facilities, barracks, and other administrative buildings; and the training ranges which consist of the Target areas (discussed later in this chapter). The air maneuver training and bombing areas are located on the various outlying ranges.

## MAIN BASE

The majority of development is located on the main base in the south-western portion of the facility with the exception of the location of the ordnance and weapons storage area, which is located in the northern portion of the installation. The main base area is comprised of 2,686 acres for which the primary land uses are used for mission and community support functions. These functions are:

- Maintenance;
- Public Works;
- Supply and Warehousing;
- Ordnance and Weapons Storage;
- Command and Administrative;
- Base Security;
- Community Recreation;
- Family Housing;
- Bachelor Housing; and,
- Medical Support.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

## AGRICULTURE AND UNDEVELOPED LAND USES

Of the 2,686 installation acres, 1,105 acres is designated for agricultural leases. These leases are leased out on a five-year term to allow for commercial agriculture activity in the production of alfalfa and other grass crops. These agricultural leases serve a dual purpose by allowing for preservation of California's premier industry and providing a means for dust and weed control around the main base; grazing is prohibited in these agricultural leases.

In addition to the agricultural leases, NAFEC has lands that are currently undeveloped and lands that have been identified for potential expansion. These areas are primarily focused around the southeastern, western, and northern portion of the main base near the airfield.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

## LOCAL COMMUNITIES WORKING TOGETHER

As a community presence, NAFEC contributes much more than just as an economic engine. The facilities at NAFEC are used by numerous military entities. The open door policy at the NAFEC renders it a valued asset to the community, in that it allows outside entities to utilize the facilities upon procurement of proper clearance and prior arrangements. For example, the US Navy Flight Demonstration Squadron, Blue Angels are one of the regular special user groups and are based here during the winter. NAFEC also serves an important function as a training facility for various federal agencies and as a community events facility for non-governmental groups. Organizations other than the Navy, which routinely use NAFEC include:

- Fleet Replacement and Training Command
- Squadrons
- Winter Home for Blue Angels
- Fleet Squadron Weapons Training
- Marine Corps Squadrons and MEUs
- Army Aviation
- Allied Forces (Canadians, Dutch, UK, Germans, and Belgians)
- Department of Homeland Security
- National Guard
- Local Law Enforcement Agencies
- Calipatria and Centinela State Prisons

- School Youth Groups
- Boys and Girls Club
- 4-H
- Brownies and Girl Scouts
- General Public (Catering and MWR Facilities)

*Sources: NAFEC Economic Impact and Community Involvement Report, 2011.*

Installation personnel participate in many aspects of local civic activities to include coaching for various youth teams, serving as scout leaders, classroom tutors and participating in numerous service and social clubs. Other community activities include:

- Southwest High School Drumline
- Imperial Valley Food Bank
- Sea Cadets
- Young Marines
- American Cancer Society Relay for Life

Additionally, volunteers from the installation assist in numerous other community activities and events.

## Military Operations

NAFEC's mission is to provide base support to Naval Aviation Squadrons and maintain target ranges for their weapons and combat air training. NAFEC also supports Marine Aviation units, air elements from the U.S. Army, Air Force units, and a Royal Air Force Parachute Training and Testing Unit. NAFEC's primary role is in fleet squadron support by providing an ideal training environment to facilitate initial and refresher aviation training, (including aerial combat maneuvering, air-to-air gunnery and bombing practice, Field Carrier Landing Practice (FCLP), electronic warfare training and low-level flight training) to visiting aviation units worldwide.

The year-round ideal flying weather and the proximity of several instrumented bombing ranges makes NAFEC a strategic asset within the US Navy for the purposes of shore and land Naval Aviation Training. This reliable training environment affords the facility to host up to 1,600 personnel each month (approximately seven to 12 squadrons) to train at NAFEC and achieve the necessary hours towards skills accomplishment in combat aerial maneuvering and scored target bombing practice.

Although NAFEC has a small footprint in Imperial County, the installation supports its military personnel and dependents, civilian personnel, and retirees with administrative and support services provided by the Commissary, Navy Exchange, Medical and Dental Clinics, Consolidated Officer/Chief Petty Officer and Enlisted Club, and a wide variety of recreational activities.

### MILITARY STRATEGIC IMPORTANCE

NAFEC serves as a premier Naval Training Installation providing realistic training to active and reserve aviation units and activities of the Navy's operating and training forces, other US forces and allied units. Surrounded by a vast unobstructed desert terrain, limited non-military air traffic with dedicated gunnery and bombing ranges, NAFEC plays a key role in aviation initial and refresher training to aviation units from around the world.

**JLUS Observation**

**NAF El Centro is an essential Navy asset as it provides an unparalleled training environment, including 365 days of optimal weather and terrain similar to Afghanistan for US and international pilots.**

## SUPPORTED COMMANDS

NAFEC is a major training center for the military and as such does not house permanent military units or aircraft. However, there are several supported commands that provide services in facilities operations and administrative components that are associated with permanent personnel. To complement the administrative and support facilities (i.e. Navy Exchange, Lincoln Housing), there are a host of components that enable the premier mission of NAFEC, supporting and preparing pilots for various combat theaters across the world. These are:

**Customer Service Desk and Personnel Support Detachment (CSD and PSD).** The CSD and PSD primary mission is to support the commands that train at NAFEC. CSD and PSD provide numerous administrative, personnel, transportation, and other services in support of active military personnel and the retiree population. The CSD and PSD are located in Building 214.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

**Defense Commissary Agency (DeCA).** The DeCA is the agency responsible for the provision of delivering American and household goods at an affordable price to military personnel and their dependents. The DeCA is located in Building 210.

*Source: NAF El Centro Commissary. http://www.cnic.navy.mil/ElCentro/InstallationGuide/FacilitiesAndResources/Commissary/index.htm*

**Navy Exchange (NEX).** The Navy Exchange is similar to that of the DeCA. The NEX provides a benefit to active-duty military personnel, eligible dependents, and the retiree population by providing several quality of life amenities such as a retail store, a lounge or cybercafé, and the Navy Lodge. The NEX is located in Building 201 and 202. The Lodge is located in temporary facilities at Buildings 335 – 339.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

**Naval Supply Systems Command (NAVSUP) or Fleet Industrial Supply Center (FISC).** The NAVSUP is, in general terms, a warehouse of inventory to support Navy fleet and shore activities. The NAVSUP is responsible for managing every aspect of logistics support for fleet training and / or deployment. This includes the following activities: determining inventory levels, procuring, receiving, storing, issuing, shipping, and / or delivering the equipment and materials to the customer. NAVSUP is located in Building 316.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

**Fleet Readiness Center (FRC).** The FRC is responsible for all aspects associated with aviation support for the Navy, Marine Corps, and joint forces. This unit provides reliable and affordable comprehensive maintenance, repair, and overhaul products and services to its customers.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012; Naval Air Systems Command, Aviation Support. http://www.navair.navy.mil/index.cfm?fuseaction=home.display&key=336F87D3-FBB9-4ED5-A2C8-5E1E58EF1FC4*

**Naval Facilities Engineering Command, Southwest (NAVFAC SW).** The NAVFACSW located at NAFEC is a branch of the San Diego Headquarters. The NAFEC NAVFACSW is a public works division responsible for and supports the Navy's infrastructure, both ashore and afloat.

*Source: NAVFAC, NAVFAC Public Works Business Line, 2013. https://portal.navfac.navy.mil/portal/page/portal/navfac/NAVFAC_WW_PP/NAVFAC_HQ_PP/NAVFAC_PW_PP*

**Navy Munitions Command (NMC) Detachment (Det.).** The NMC Det. at NAFEC is a component of the CONUS-West Division of the Navy Munitions Command out of Seal Beach, CA, which also supports foreign military units. The NMC Det. is responsible for the operations and support of ordnance and ordnance support equipment for fleet combat and training operations.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012; Naval Shore Ordnance Realignment, http://www.powershow.com/view/42852-ODM0Y/Naval_Ashore_Ordnance_Realignment_powerpoint_ppt_presentation*

**Vincennes University.** Vincennes University is an on-site military installation program of the Indiana-based University. This university offers military personnel and dependents and NAFEC personnel the opportunity to further their education and careers through on-site, traditional classroom setting classes. The university offers one-year certificates, two-year certificates; two-year associates degrees, two-year transfer programs, and some baccalaureate degrees.

## TENANTS

**Blue Angels.** NAFEC is the winter home of the Blue Angels. The mission of the Blue Angels is as international ambassadors of good will performing in air shows worldwide. The Blue Angels occupy Buildings 231 and 511 permanently, and Hangar 850 when they are home for the winter months (January – March).

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

**VFA-122 "Flying Eagles".** The VFA-122 detachment located at NAFEC provides maintenance and logistics support of the aircraft for the squadron. This maintenance unit previously belonged to the Strike Fighter Pacific Maintenance Unit. VFA-122 functions out of Hangar 3 and Building 830.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

**Naval Special Warfare Group One (NSWG-1).** The NSWG-1 provides an effective counter operation in peacetimes and in times of conflict. NSWG-1 also provides activities for assistance in security, anti-terrorism, counterdrug, and personnel recovery and special activities. NSWG-1 primarily operates on NAFEC ranges, but when they are on main base, they function out of Building 528.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

**California Army National Guard (CAARNG) / Border Patrol.** The CAARNG / Border Patrol mission is to prevent terrorists and weapons associated with terrorists such as weapons of mass destruction from entering the US. The CAARNG operates out of one facility on NAFEC, while the US Border Patrol only conducts on-site training on the installation.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

**Medical and Dental Branch Offices.** The Medical and Dental Branch offices are components of the Navy Medical Center San Diego. The mission of the medical and dental offices is to be ready for deployment in support of operational forces, deliver quality healthcare to active-duty military and dependents, and assist in the future role of medicine through education, research and training.

*Source: Draft NAF El Centro Master Plan: Existing Conditions Report, December 2012.*

## CURRENT MISSION OPERATIONS

NAFEC provides realistic training to active and reserve aviation units and activities of the Navy's operating and training forces. Squadrons visit NAFEC to practice gunnery, target bombing, carrier landings and air combat. The mission of NAFEC is:

> *"To ensure victory in combat through the superior training of our war fighters."*
>
> *"To support the combat training and readiness of the Warfighter."*

NAFEC's mission is to provide base support to Naval Aviation Squadrons, Marine Aviation units, air elements from the U.S. Army, Air Force units, and the Royal Air Force Parachute Training and Testing Unit, and maintain target ranges for their weapons and combat air training. This mission enables other DOD-related and non-DOD-related missions to receive current training in the latest technologies and equipment enabling superior national security and military readiness for US and allied war fighters.

In summary, the primary mission of NAFEC is to provide fleet support tactical training for various national and international military service units. This tactical training is in air-to-ground maneuvering, aerial gunnery, target bombing, and carrier landing practice. These training opportunities as well

as the proximity of the target ranges provide a cost-effective environment for squadrons to achieve their training goals.

As such, the facility has two operating runways. The 9,500-foot east/west runway is equipped with a Fresnel Lens Optical Landing System at each approach end as well as lighted carrier deck landing areas at both ends so pilots can simulate carrier landings. The Fresnel Lens Optical Landing system provides a path for pilots to assist in landing exercises on a carrier.

Apart from "touch and go" exercises, aircrews use the many ranges at NAFEC to develop their maneuvering and bombing skills. A remote-controlled target area allows naval aviators to practice ordnance delivery. The desert range is used for target practice in several areas including but not limited to air-to-ground bombing, strafing, dummy drops and mobile land target training. The target complex is equipped with the Weapons Impact Scoring System (WISS) that microwaves target images to a master control building for immediate evaluation of ordnance drop accuracy.

The WISS is complemented by the Display and Debriefing Subsystem, known as DDS. This system combined with the Tactical Aircrew Combat Training System (TACTS) expands the capabilities of NAFEC to include evaluation of air combat training. These systems utilize remote television, acoustical and laser scoring systems to provide a computerized record of the tactics and strategies employed by aircrews to evaluate maneuver and bombing effectiveness.

The relatively isolated location of NAFEC makes this facility a valuable resource in supporting the aviation readiness of the US Naval Forces and Marine Corps. In addition to serving as a divert facility for aircraft operating offshore in southern California, NAFEC supports Field Carrier Landing Practice for Navy and Marine Corps aviators in the area as well as other units located in the southwestern United States.

*Source: http://www.globalsecurity.org/military/facility/ el-centro.htm, http://www.cnic.navy.mil, http://www.military installations.dod.mil/pls/psgprod/f?p=132, http://www.navyregionsouthwest.com, http://www.cnic.navy.mil/ElCentro/index.htm*

### FUTURE MISSION OPERATIONS

NAFEC is developed as a Navy standard installation with state-of-the-art facilities, ranges, and training areas. These assets facilitate tactical training experiences and professional leadership mission requirements. This positions NAFEC as the premier facility for initial and refresher aviation training (including Field Carrier Landing Practice (FCLP), electronic warfare training and low-level flight training) to visiting aviation units from around the world.

While the facility does not have any current plans for mission expansion, NAFEC is under consideration along with NAS Lemoore for the homebasing of the F-35 Lightning II, Joint Strike Fighter. The assets at NAFEC and its virtually un-encroached setting position the installation well for future potential training missions and other defense-related missions. This JLUS planning process will enable the surrounding communities to plan collaboratively in the future to foster and protect the sustainability of the NAFEC mission and training assets.

## NAFEC Mission Footprint

Mission and training activities at NAFEC generates a number of impacts that can affect the health, safety and overall quality of life in the surrounding community. Examples of these mission impacts include noise and vibration overhead from flights or the risk of an aircraft accident. Conversely, the military mission is susceptible to hazards created by certain nearby civilian activities and land use development that may obstruct air space, locate noise sensitive uses in high noise zones, gather large numbers of people in safety zones. Understanding the overlapping spatial patterns of these impacts around the installation and ranges is essential for promoting compatible and fully coordinated land use decisions. The overlapping spatial patterns comprise the mission footprint. The mission footprint serves as a compatibility tool for surrounding communities in making land use decisions.

Several elements or mission profiles comprise the mission footprint that extends outside the NAFEC's installation or range boundaries. These elements are either tangible, meaning that they are either physically seen and / or heard or intangible, meaning that they exist within space without being seen or heard.

The following outlines the different elements or mission profiles that comprise the NAFEC Mission Footprint:

- Aircraft Safety Zones
- Clear Zones (CZ)
- Accident Potential Zones (APZs)
- Noise Contours for Aircraft
- Imaginary Surfaces
- Approach and Departure Flight Tracks
- Explosive Safety Quantity Distance Arcs (ESQD)
- Bird / Wildlife Air Strike Hazard (BASH)
- Range Compatibility Zones (RCZs)
- Noise Contours for Large Caliber Weapons
- Military Operating Areas (MOA)
- Restricted Airspace
- Military Training Routes (MTRs)
- Microwave Line-of-Sight

## Aircraft Safety Zones

The December 2010 AICUZ reports establishes aircraft safety zones for NAFEC based on historical data of aircraft collisions, geography, and runway information. The purpose of safety zones are to provide for the general safety of the public as it relates to the land uses under and near these zones.

NAFEC has two runways 08/26 and 12/30, respectively. Runway 08/26 is 9,503 feet long and 200 feet wide. Runway 12/30 is 6,824 feet long and 200 feet wide. Simulated carrier decks are positioned on the approach end of Runways 08, 26, 30 to enable the FCLP training activities.

These runways have safety zones associated with them to limit and guide development to enable the provision of safety of the public and pilots while simultaneously allowing for continued economic growth. The safety zones are referred to as Clear Zones (CZs) and Accident Potential Zones (APZ I and II). These safety zones are illustrated in Figure 3-2. Within these zones, there are restrictions on types, densities, and heights of land uses.

The **Clear Zone** is the zone that begins at the end of each runway measuring 1,500 feet wide extending outward in a fan-shape to a length of 3,000 feet from the end of each runway. The fan-shape of this zone flares to a greater width of 2,284 feet wide at the end of the zone. This is the area where an accident involving an aircraft operation is most likely to occur; therefore, development is completely restricted in this area. Stacking of agricultural products and commodities would be in violation of the FAA regulations delineated for this area.

The **Accident Potential Zone I** (APZ I) is a rectangle that begins at the end of each clear zone and continues in a rectangle that extends to a length of 5,000 feet by 3,000 feet wide. This area typically experiences less accidents than the clear zone; therefore has less restrictions imposed.

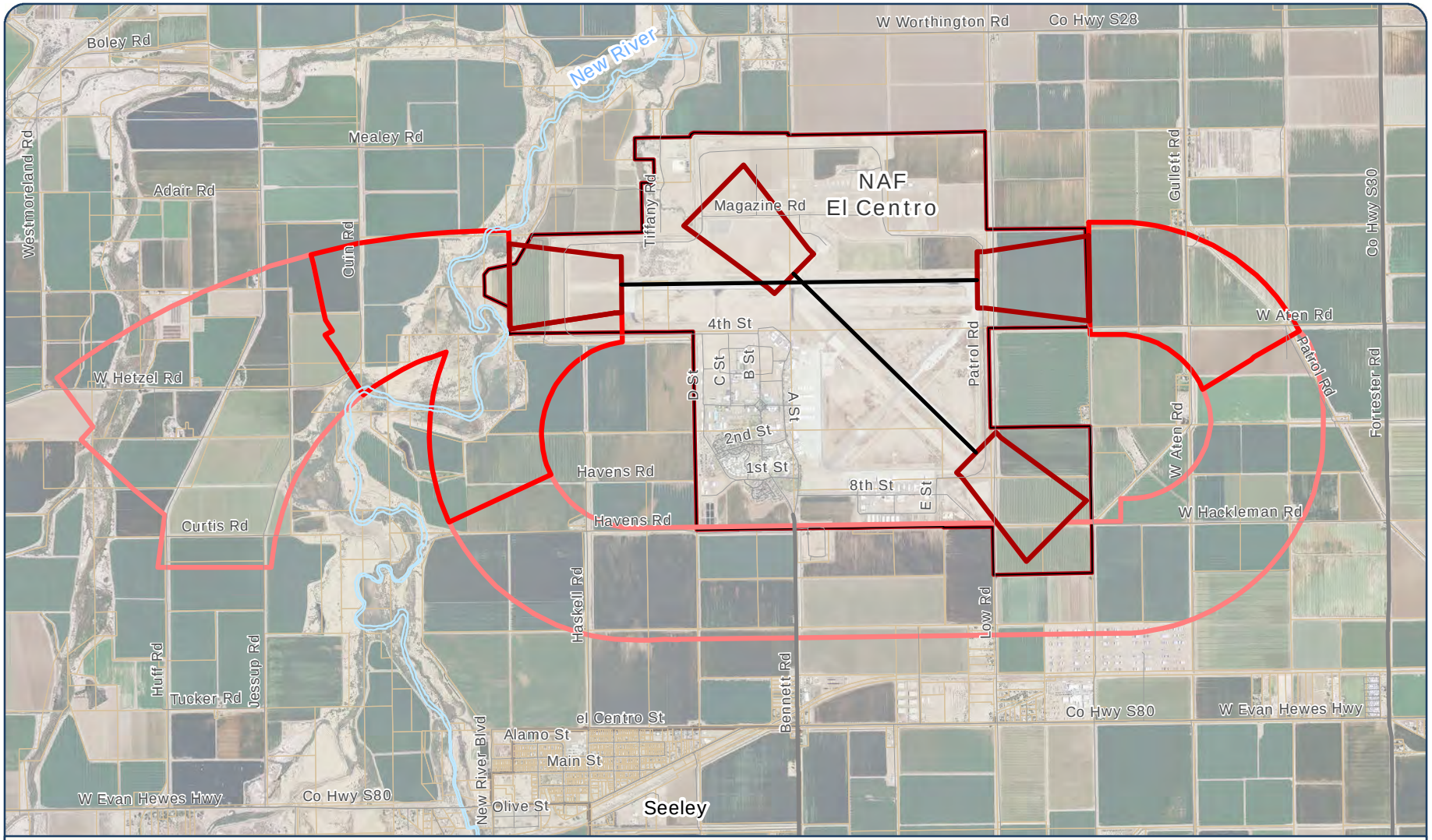
The **Accident Potential Zone II** (APZ II) is a rectangle that starts at the end of each APZ I at both ends of the runway extending to a length of 7,000 feet by 3,000 feet wide. APZ II is where development is the least restricted due to risk of accidents being less as it is further from the runway.

*Source: NAF El Centro AICUZ, 2010.*

## Aircraft Noise Contours

The main source of aircraft noise is from flight operations, which include overflight, take-offs, landings, touch-and-go operations, and engine maintenance run-ups. The Navy considers how its operations impact the local community by calculating the day-night average sound level (DNL). The DNL averages the noise levels of all aircraft operations that occur with a 24-hour period. The DNL has been determined to be a reliable measure of community sensitivity to aircraft noise and has become the standard metric used in the United States for aircraft noise. To assist the communities in land use decisions, the DOD uses decibel noise contours to illustrate the exposure to noise associated with aviation activities. A general definition of the noise zones are:

- **Noise Zone I –** This is an area in which DNL is between 60 CNEL and 65 CNEL. This zone is considered to have minimal noise exposure but may be a noise nuisance to certain types of land uses and activities.
- **Noise Zone II** – This is an area where the DNL is between 65 CNEL and 75 CNEL. This zone is considered to have significant noise exposure and is normally unacceptable for noise-sensitive land uses.




Source: NAF El Centro, 2013.

**Figure 3-2**
**Airfield Safety Zones**

*Fig_3-2_NAFEC_JLUS_ASZ_20131025_CJM.pdf*

- **Noise Zone III** – This is an area around the source of noise in which the DNL is greater than 75 Community Noise Equivalent Level (CNEL). This zone is considered an area of severe noise exposure and is deemed unacceptable for noise sensitive activates and land uses.

The 2010 NAFEC AICUZ report illustrates two different airfield noise contour footprints for NAFEC, an existing baseline footprint and a prospective footprint. In order to provide the best information for land use planning purposes, the AICUZ and Matrix Design Group has recommended that the prospective noise contour footprint be used. The prospective noise footprint includes the projected noise contours associated with the F-35C Lightning II aircraft. Although a decision has not been made on the F-35C West Coast Homebasing EIS, no matter what the EIS decision is, the F-35 will train at NAFEC.

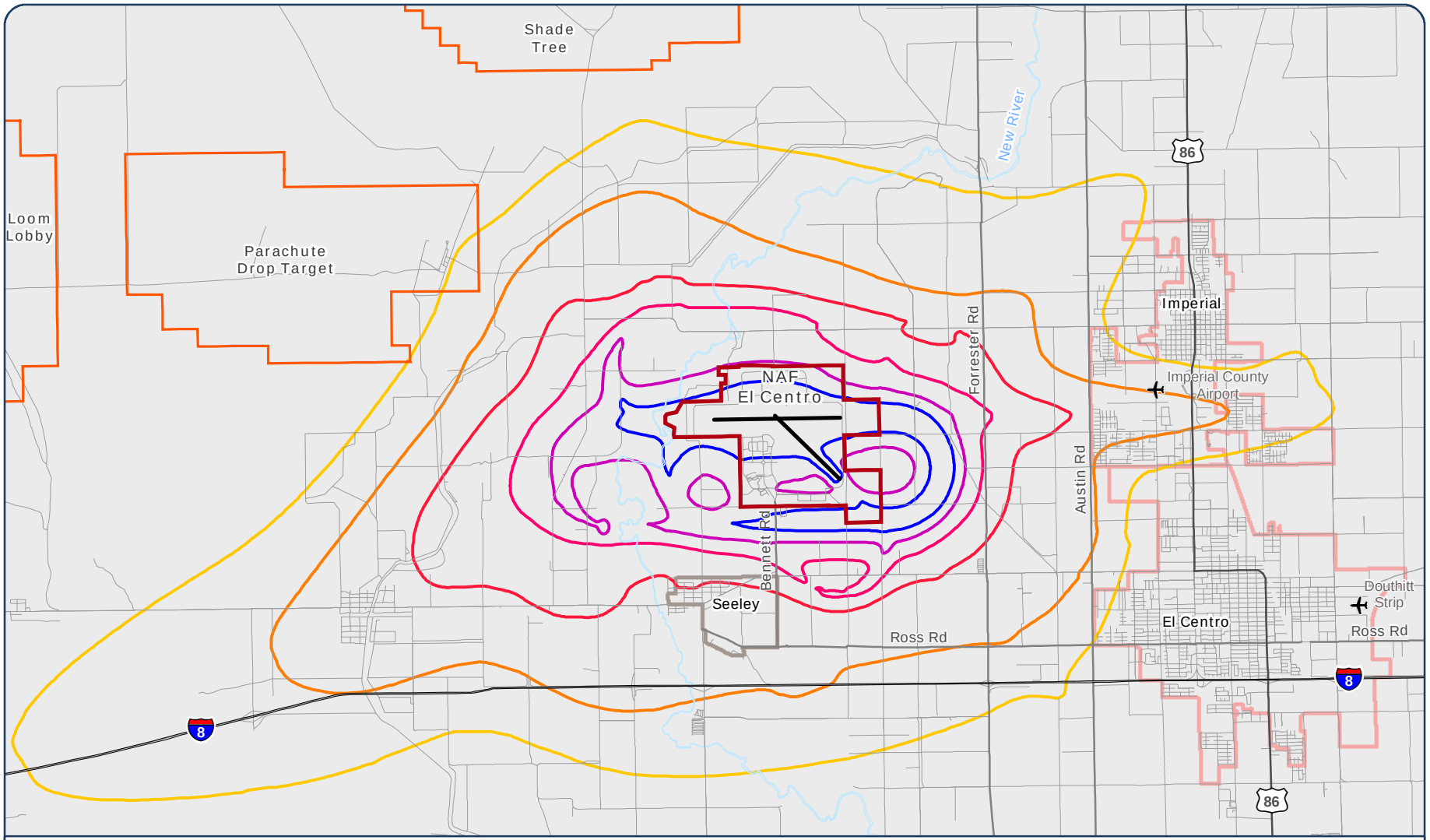
The NAFEC prospective noise contour footprint is illustrated in Figure 3-3. As illustrated, the 60 CNEL contour would extend approximately 9.5 miles to the west of the airfield boundary, 6 miles to the east, 4 miles to the south. The 65 CNEL contour would extend approximately 6 miles to the west of the airfield boundary, 5 miles to the east, 3 miles to the north and 3 miles to the south.

*Source: NAF El Centro AICUZ, 2010.*

## Imaginary Surfaces

The imaginary surfaces of an active runway are used to determine where vertical obstructions could exist in the vicinity of aviation operations. The various imaginary surfaces build upon one another and are designed to eliminate obstructions to air navigation and operations, either natural or man-made. The extent or size of an imaginary surface depends on the type of runway. Thus, the key terms related to imaginary surfaces relative to NAFEC runways are described below and illustrated on Figure 3-4.

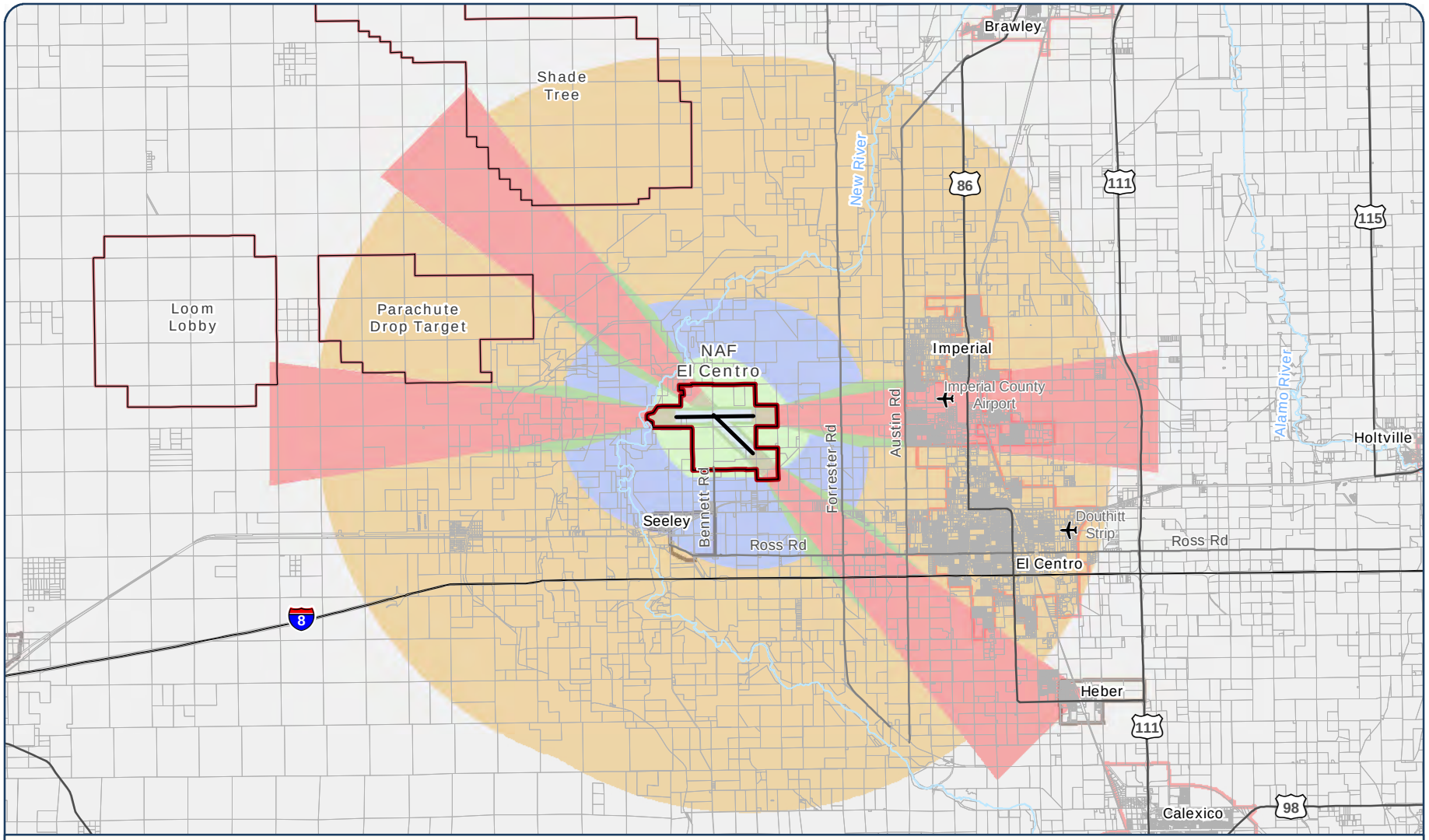
- **The Primary Surface** defines the limits of the obstruction clearance requirements in the immediate vicinity of the landing area. It comprises surfaces of the runway, runway shoulders, and lateral safety zones and extends 2,000 feet beyond the runway end. This surface is 2,000 feet wide, or 1,000 feet on each side of the runway centerline.
- **The Clear Zone** defines the limits of the obstruction clearance requirements in the vicinity contiguous to the end of the primary surface. For the NAFEC runways, it measures 2,000 feet wide (same width of the primary surface) by 1,000 feet long. This is the area where an accident involving an aircraft operation is most likely to occur.
- **The Approach-Departure Clearance Surface** is symmetrical about the runway centerline and begins as an inclined plane (glide angle) 200 feet beyond each end of the primary surface of the centerline elevation of the runway end, and extends for 50,000 feet for the NAFEC runways. The slope of the approach-departure clearance surface is 50:1 outward and upward along the extended runway (glide angle) centerline until it reaches an elevation of 500 feet above the established airfield elevation. It then continues horizontally at this elevation to a point 50,000 feet from the start of the glide angle. The width of this surface at the runway end is 2,000 feet; it flares uniformly, and the width at 50,000 feet is 16,000 feet.
- **The Transitional Surfaces** connect the primary surfaces, Clear Zone surfaces, and approach-departure clearance surfaces. The slope of the transitional surface is 7:1 outward and upward at right angles to the runway centerline.




Source: NAF El Centro, 2013.

Fig_3-3_NAFEC_JLUS_Pro_Noise_20131113_JKC.pdf

**Figure 3-3**
**Prospective Noise Contours**



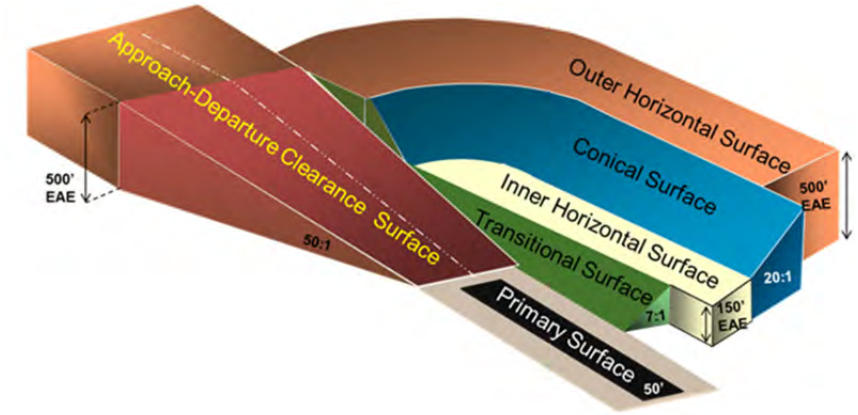

Source: NAF El Centro AICUZ, 2010 (digitized by Matrix Design Group).

*Fig_3-4_NAFEC_JLUS_Imag_Surf_20140214_JKC.pdf*

**Figure 3-4**
**Airfield Imaginary Surfaces**

Figure 3-5 illustrates a three-dimensional cross-section of the imaginary surfaces for the NAFEC runways. This figure shows the slope of the potential heights of structures that should be followed in order to prevent the obstruction of navigable airspace. This is especially important in the areas of the approach and departure surfaces as that is where aircraft is decreasing speed and descending to complete the training exercise or flight operation.

**Figure 3-5. Three-Dimensional Cross-section of the Imaginary Surfaces**




Associated with the imaginary surfaces of an active airfield and in relation to flight operations from an airport (military or civilian), vertical obstructions are assessed through compliance with Federal Regulation Title 14 Part 77, which establishes standards and notification requirements for objects affecting navigable airspace. Figure 3-6 illustrates the Part 77 footprint based on the elevation of the runway. Commonly referred to as Part 77 compliance, this regulation provides details to evaluate the potential for a vertical obstruction based on the elevation of the airfield, the height and resulting elevation of the new structure or facility, and the location of the structure or facility in relation to the airfield in question. For more information about Federal Regulation Title 14 Part 77, see Chapter 4, Federal Aviation Act.

## Approach and Departure Flight Tracks of the NAFEC Airfield

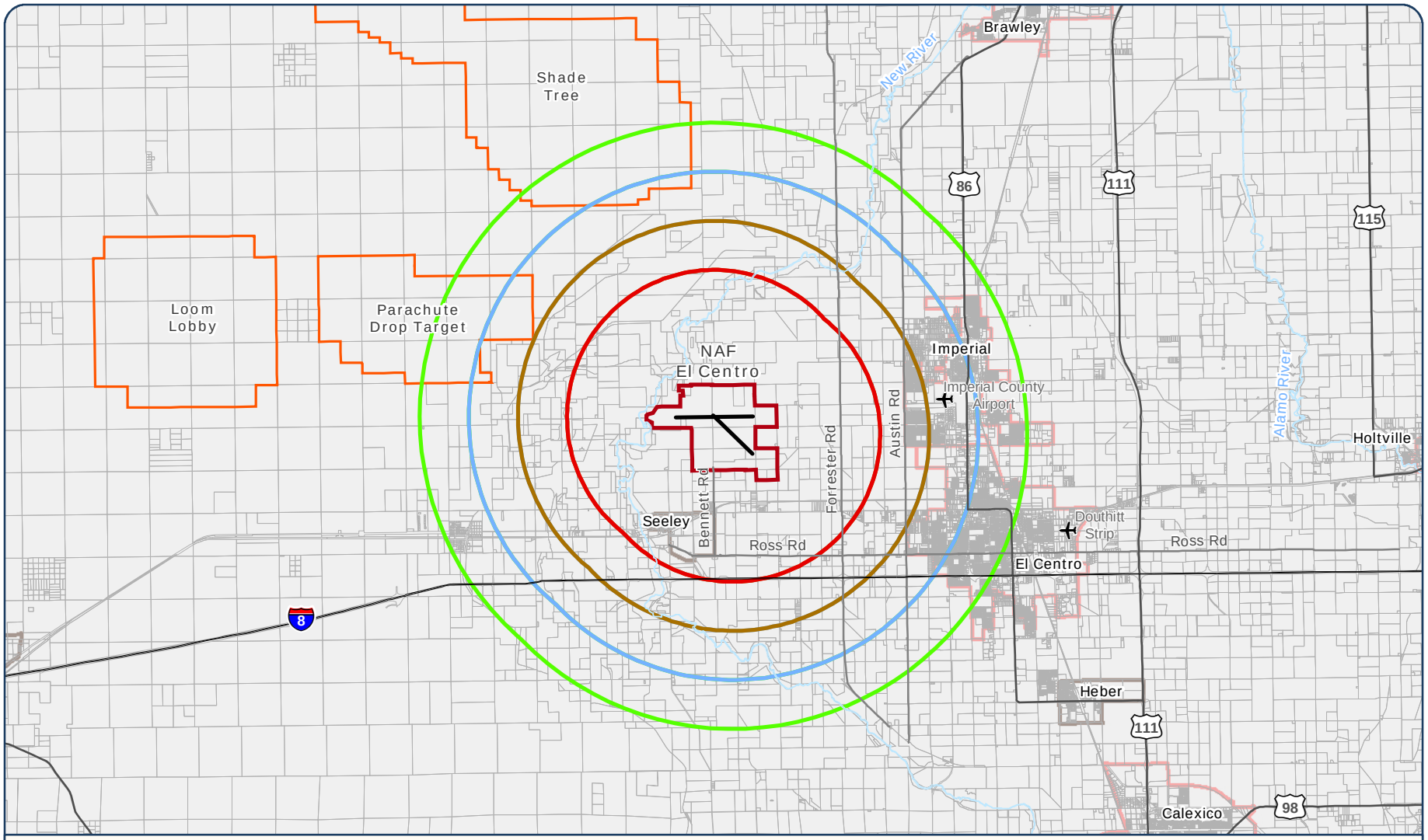
According to the NAFEC AICUZ, a flight operation consists of either a single operation (either a takeoff or a landing) or two operations (takeoff and landing). Thus, flight tracks are created using these flight operations and other information gathered from air traffic controllers and pilots, and other variables such as weather and the presence of development and incorporated communities. Typically, when flight tracks are developed they attempt to avoid being established over urban development to reduce impacts and risk to the general public and commercial or general aviation activities.

The flight tracks for NAFEC are grouped by aircraft and ingress and egress routes. They are:

- Fixed-wing approach and departure; and,
- Rotary-wing approach and departure.

As Figure 3-7 illustrates, there are numerous flight tracks associated with fixed-wing aircraft operations for NAFEC. As shown in the figure, there are several flight tracks that occur over the cities of El Centro and Imperial and the community of Seeley. The operations performed by the aircraft using these flight tracks can subject the land uses under these tracks to impacts such as noise and vibration.

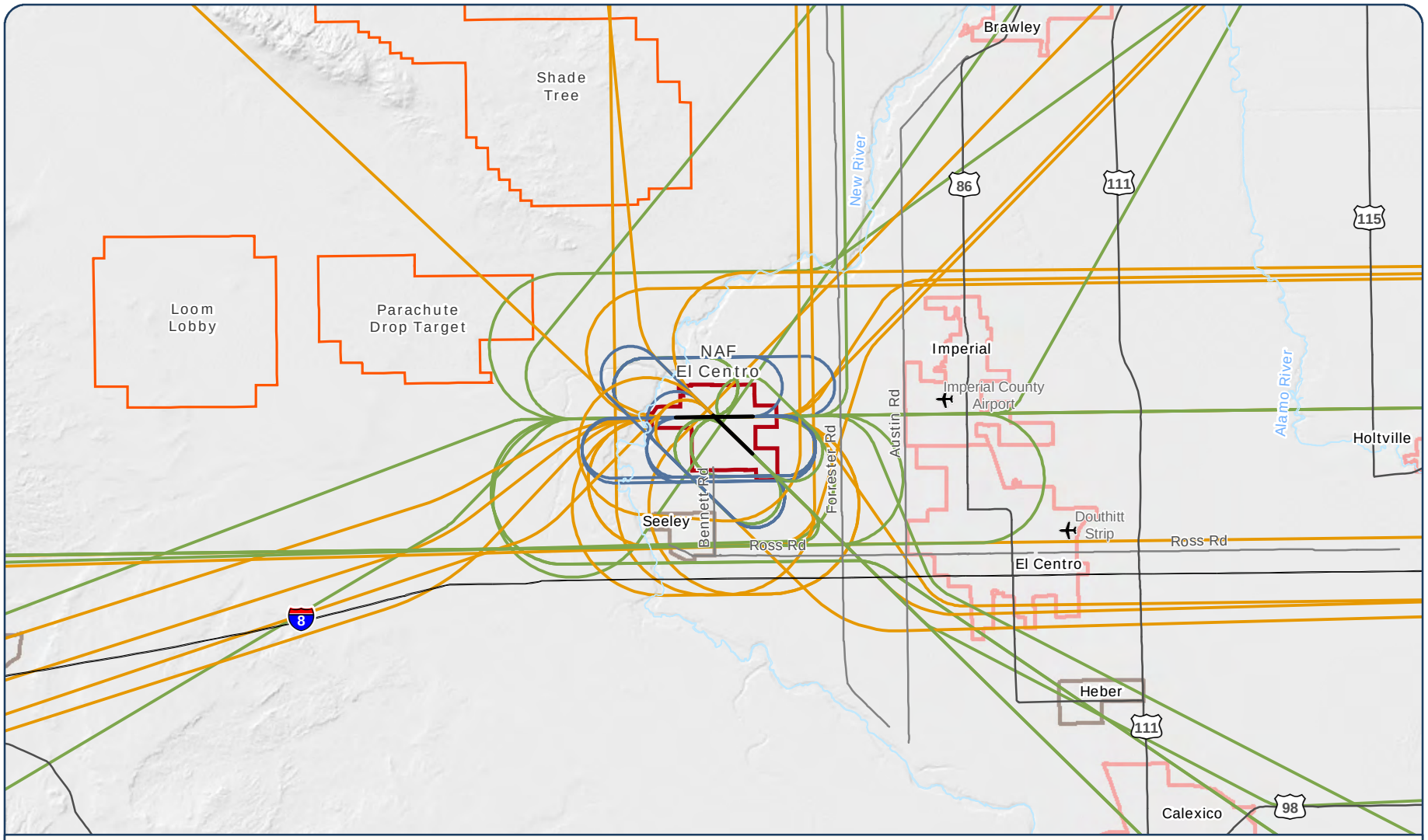
The flight tracks associated with FCLP or touch and go patterns (closed patterns) are isolated to the area immediately around the installation. These operations consist of low-level altitudes at times, and the community of Seeley could experience impacts associated with noise from these aircraft. However, as shown in Figure 3-7, the closed-pattern flight tracks do not directly impact land uses associated with any of the communities in the JLUS study area.




Source: Matrix Design Group, 2013.

**Figure 3-6**
**FAA Part 77 Vertical Obstruction Compliance**

*Fig_3-6_NAFEC_JLUS_FAA_Part_77_20140214a_JKC.pdf*




Source: NAF El Centro, 2013.

*Fig_3-7_NAFEC_JLUS_Fixed-Wing_20140214_JKC.pdf*

**Figure 3-7**
**Fixed-Wing Flight Tracks**

Figure 3-8 illustrates the rotary-wing aircraft flight tracks. These flight tracks do not traverse the communities in the JLUS study area, thus reducing direct impacts generated by these aircraft. However, indirect impacts associated with noise and vibration may be realized in the community of Seeley due to the proximity of the flight tracks. Furthermore, specific area plans and development located in unincorporated Imperial County situated under these or adjacent to these flight tracks could experience indirect impacts of noise, vibration, and dust dependent on altitude of the aircraft performing the operation.

*Source: NAF El Centro AICUZ, 2010.*

### Explosive Safety Quantity Distance Arcs

The explosive safety quantity distance (ESQD) arcs are the area where risk has been assessed based on the impacts of the types of explosives being stored. Munitions are stored in the northern portion of the NAFEC installation away from the development of the facility. The ESQD arcs do not extend off the installation, and therefore do not create increased risk to adjacent or proximate land uses. In addition, the surrounding land uses are primarily agricultural uses and lands that are in trust with the Imperial Irrigation District (IID).

However, it is important to note that while there is no immediate risk, in the case of munitions detonation in the area of the ESQD arcs on NAFEC, impacts could be experienced off installation near this area as impacts do not cease due to an imaginary boundary line. For the purposes of this planning process, further assessment of this component of the military profile is not needed.

### Bird Air Strike Hazard

Birds and wildlife can represent a significant hazard to military training and flight operations. Certain types of land uses attract birds and wildlife such as standing water and grasslands. While there have been an insignificant number of fatalities associated with bird air strike hazards (BASH) in the past 30 years, the concern associated with BASH is the significant amount of damage a BASH incident can cost the federal government. BASH incidents have cost the Navy over $313 million nationwide in equipment and aircraft damages. NAFEC reported a total of seven bird strikes between 2003 and 2009. Figure 3-9 illustrates the likely potential for BASH incidents to occur in the vicinity of the airfield per the FAA statistical BASH relevancy area.

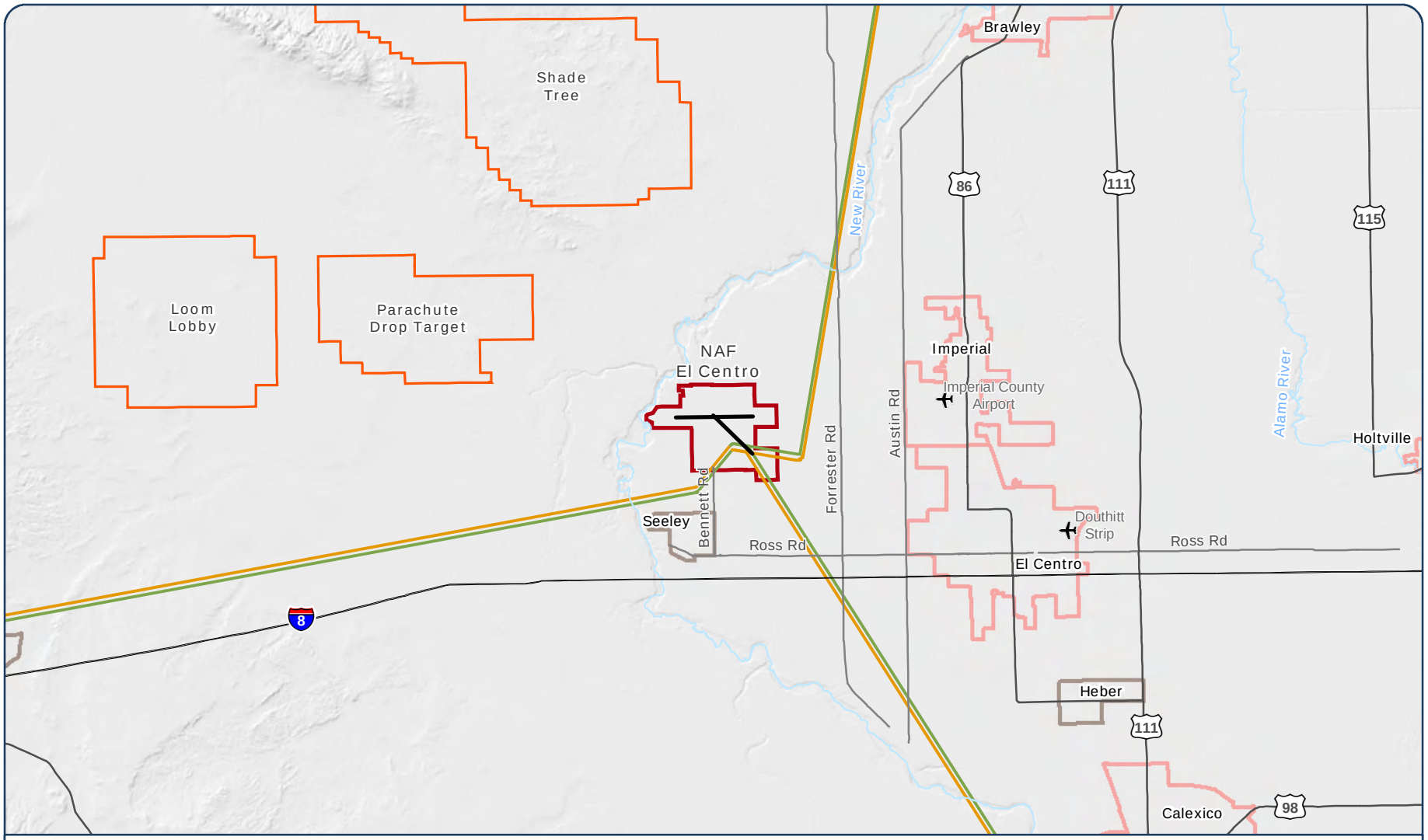
This area was determined to be significant by the FAA as aircraft are more likely to collide with birds and wildlife due to descending altitudes and decreasing aircraft speed. This BASH footprint should be considered in long-range planning, especially in planning recreational land uses.

### NAFEC TARGET RANGES AND TRAINING AREAS

The vast training areas associated with NAFEC allowed for 89 squadron detachments totaling over 8,000 personnel to train for an average stint of 14 days. These squadrons include a variety of national and international defense-related missions, including: Active Army Green Berets, Navy, Air Force parachutists, Marine Corps, Navy SEALs, and British, Canadian, French, German and Italian aviators.

**JLUS Observation**

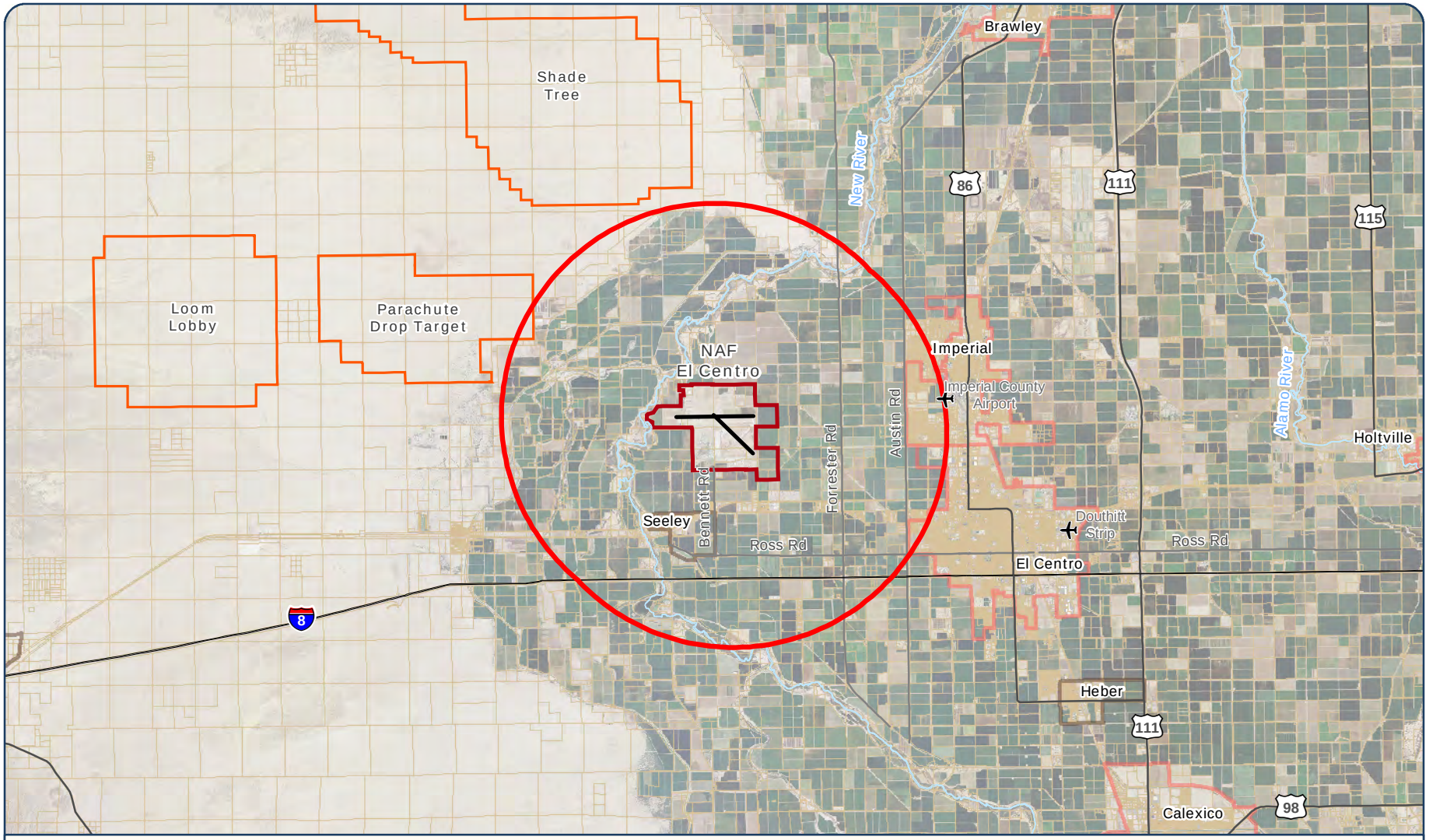
**NAF El Centro is host to a wide variety of US and allied forces for different facets of training.**




Source: NAF El Centro, 2013.

*Fig_3-8_NAFEC_JLUS_Rotary-Wing_20140214_JKC.pdf*

**Figure 3-8**
**Rotary-Wing Flight Tracks**




Source: Matrix Design Group, 2013.

*Fig_3-9_NAFEC_JLUS_BASH_20140214a_JKC.pdf*

**Figure 3-9**
**FAA Statistical BASH Relevancy Area**

The target areas associated with the NAFEC ranges are the sites where majority of bombing occurs and has the largest concentration of firing ranges. Table 3-1 identifies the types of operations that take place in these areas and Figure 3-10 illustrates their locations.

- Target 101 (Shade Tree);
- Target 103 (Loom Lobby);
- Parachute Drop Target;
- Target 68 (Inkey Barley); and,
- Target 95 (Kitty Baggage).

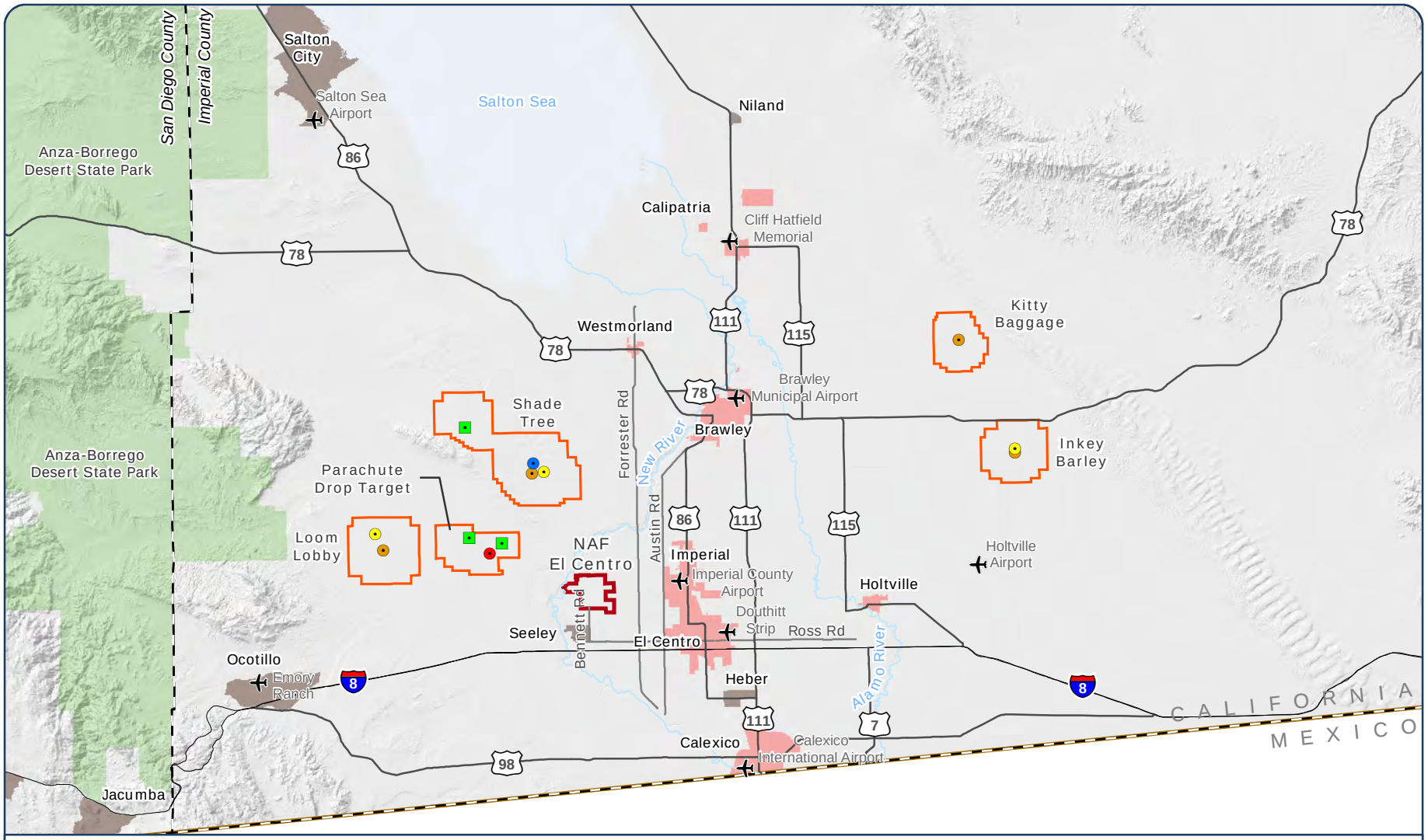
**Table 3-1. NAFEC Training Areas and Operations**

| Training Area | Operations |
|---|---|
| **NAFEC Airfield** | **Assets:**<br>■ Primary Runway 8/26 (9,500 feet east/west)<br>■ Emergency / Crosswind Runway 12/30 (6,823 feet)<br>■ Runway associated structures: parking aprons and hangars<br>■ Helicopter Landing Pad (southwestern corner of Runway 12/30)<br>**Primary Operations:**<br>■ Air traffic control;<br>■ Emergency response;<br>■ Refueling and power check area;<br>■ Run-up test facility; Tactical Air Navigation (TACAN);<br>■ Ground Control Approach System (GCA);<br>■ Wells Air Start System;<br>■ Combat Aircraft Loading Ordnance Area (CALA) |
| **West Mesa Training Area (R-2510)** | |
| **Target 101 (Shade Tree)** | **Assets:**<br>■ Main Bull Target<br>■ BDU Target<br>■ Strafe Target<br>■ Mobil Land Target<br>**Primary Operations:**<br>■ Target and bombing practice;<br>■ Night-training capability at Main Bull Target;<br>■ Instrumented, non-instrumented, and acoustical scoring system<br>■ MK-76; BDU-33; BDU-48; 2.75 FFAR (practice); 20 mm; 25 mm; 30 mm; and .50 CAL; 20 mm, 25 mm, 30 mm (inert non-tracer) |

| Training Area | Operations |
|---|---|
| **Target 103 (Loom Lobby)** | **Assets:**<br>■ Main Bull Target<br>■ Strafe Target<br>**Primary Operations:**<br>■ Target and bombing practice<br>■ Bombing practice with Laser-guided training round (LTGR)<br>■ Night-training capability at Main Bull Target<br>■ MK-76; BDU-33; BDU-48; LGTR; 2.75 FFAR (practice); 20 mm; 25 mm; 30 mm; and .50 CAL; 20 mm, 25 mm, 30 mm (inert non-tracer) |
| **Parachute Drop Target** | **Assets:**<br>■ Superstition Drop Zone (DZ)<br>■ Camelot DZ<br>■ Bull Frog DZ<br>**Primary Operations:**<br>■ Insertion and extraction activities<br>■ Freefall and Static line parachute operations<br>■ No ordnance expenditure |
| **Landing Zones (LZ)** | **Assets:**<br>■ Asphalt Pad<br>■ Concrete Pad<br>**Primary Operations:**<br>■ Insertion and extraction activities<br>■ Helicopter activities<br>■ No ordnance expenditure |
| **East Mesa Training Area (R-2512)** | |
| **Target 68 (Inkey Barley)** | **Assets:**<br>■ Main Bull Target<br>■ Strafe Target<br>**Primary Operations:**<br>■ Target and bombing practice;<br>■ Instrumented and acoustical scoring system<br>■ MK-76; BDU-33; BDU-48; 2.75 FFAR (practice); 20 mm; 25 mm; 30 mm; and .50 CAL; 20 mm, 25 mm, 30 mm (inert non-tracer) |

| Training Area | Operations |
|---|---|
| **Target 95 (Kitty Baggage)** | **Assets:**<br>■ Main Bull Target<br>**Primary Operations:**<br>■ Target and bombing practice;<br>■ Non-instrumented scoring system;<br>■ MK-76; BDU-33; BDU-48; 2.75 FFAR (practice); 20 mm; 25 mm; 30 mm; and .50 CAL |
| **Parachute Drop Target** | **Assets:**<br>■ ROLF DZ<br>**Primary Operations:**<br>■ Insertion and extraction operations<br>■ Freefall and Static line parachute operations<br>■ No ordnance expenditure |
| **Landing Zone** | **Assets:**<br>■ Auxiliary Field (5,000 feet asphalt runway)<br>**Primary Operations:**<br>■ Helicopter activities<br>■ No ordnance expenditure |

*Source: El Centro Range Complex Management Plan, 2012; NAF El Centro Ranges, 2013.*




**Legend**

- Landing Zone
- Drop Zone
- Main Bulls-eye
- Mobile Land Target (MLT)
- Strafe Target
- NAF El Centro
- Range
- Incorporated City
- Unincorporated Community
- International Boundary
- County Boundary
- California State Park
- Interstate
- US Highway
- Major Road
- River
- Airport

0 5 10 Miles

Source: NAF El Centro, 2013.

**Figure 3-10**
**Range and Training Facilities**

*Fig_3-10_NAFEC_JLUS_Range_TF_20140214_JKC.pdf*

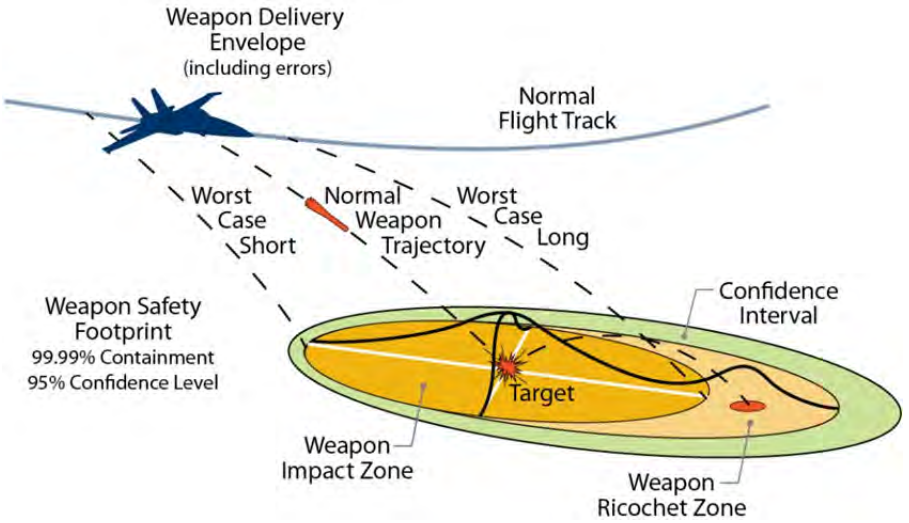
## Range Compatibility Zones

The 2014 RAICUZ report establishes range compatibility zones (RCZs) for the NAFEC ranges based on historical data of type of delivery aircraft, the weapon being delivered, and the weapon release components that include the delivery dive angle, altitude and airspeed at which the weapon is released. The purpose of RCZs are to measure the impact of the ordnance impact relative to providing for the general safety of the public as it relates to the land uses under and near these zones. Figure 3-11 illustrates the footprint of each of the three RCZs for the NAFEC range.

- Range Compatibility Zone I;
- Range Compatibility Zone II; and,
- Range Compatibility Zone III.

The **Range Compatibility Zone I (RCZ I)** defines the area where the ordnance strikes the surface. It covers various components of ordnance expenditure including ordnance detonation and potential for ricochet. This RCZ I also includes the areas when the aircraft is armed and releases the ordnance to include any debris or fragments that may also be expended due to the release of the weapon. Figure 3-12 illustrates the components that are measured and included in RCZ I. Due to impacts that could occur in this area, no development is permitted in this area.

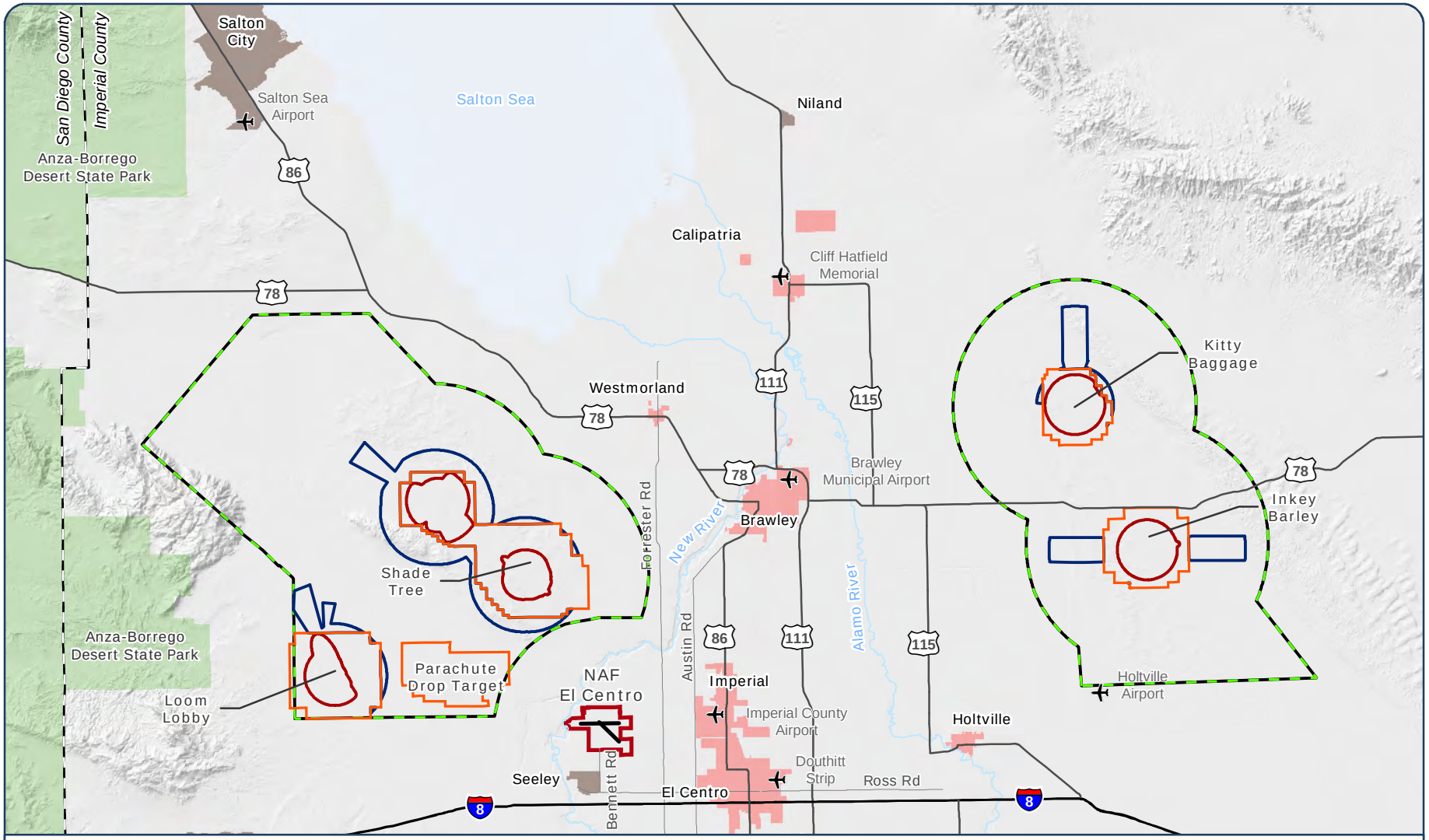
**Figure 3-12. Range Compatibility Zone I Footprint**




The **Range Compatibility Zone II (RCZ II)** is the area that covers armed overflight; this is specifically defined by the NAFEC range instructions. RCZ II does permit some development; however, this area still poses safety risks to its inhabitants. Therefore, land uses that have the potential to attract large numbers of people are not recommended for this area.

The **Range Compatibility Zone III (RCZ III)** is the SUA used by aircraft to perform training missions including access to the range, tactical maneuvering, and separating participating and non-participating aircraft. The RCZ III provides recommended land uses for the lands under this SUA.

Associated with the RCZs are the noise contours for large weapons and the aircraft.




Sources: NAF El Centro, 2013.

Fig_3-11_NAFEC_JLUS_RCZ_20140217_JKC.pdf

**Figure 3-11**
**Range Compatibility Zones**

## Range Noise Contours

The range noise contours are contained within the NAFEC ranges. Because the contours are contained within the NAFEC ranges, the interface with the community is minimal to none as it relates to this military mission footprint.

## Aircraft Noise Contours

These noise contours do not extend off the NAFEC ranges. Although the RAICUZ was being developed during this JLUS study and relevant data pertaining to NAFEC was unavailable, there are noise contours for the aircraft associated with the ranges that are developed in increments of 5 CNEL beginning at 60 CNEL up to 80 CNEL.

The noise zones or contours of the ranges are similar to those noise contours of an active airfield. The noise zones are as follows:

- 60 CNEL – 65 CNEL
- 65 CNEL – 70 CNEL
- 70 CNEL – 75 CNEL
- 75 CNEL – 80 CNEL

## NAFEC MILITARY OPERATING AREA

The Military Operating Area (MOA) for the NAFEC JLUS spans across two states and four counties in the southwestern US. The counties are:

- Imperial (CA);
- Riverside (CA);
- San Diego, (CA) and
- Yuma (AZ).

A MOA is the special use airspace (SUA) in which military or defense-related aviation occurs for training and / or special operations. This designation of airspace assists other air traffic users to know there are airspace areas restricted from visual flight rules (VFR) and instrument flight rules (IFR) aviation exercises from aircraft not associated with military-related operations.

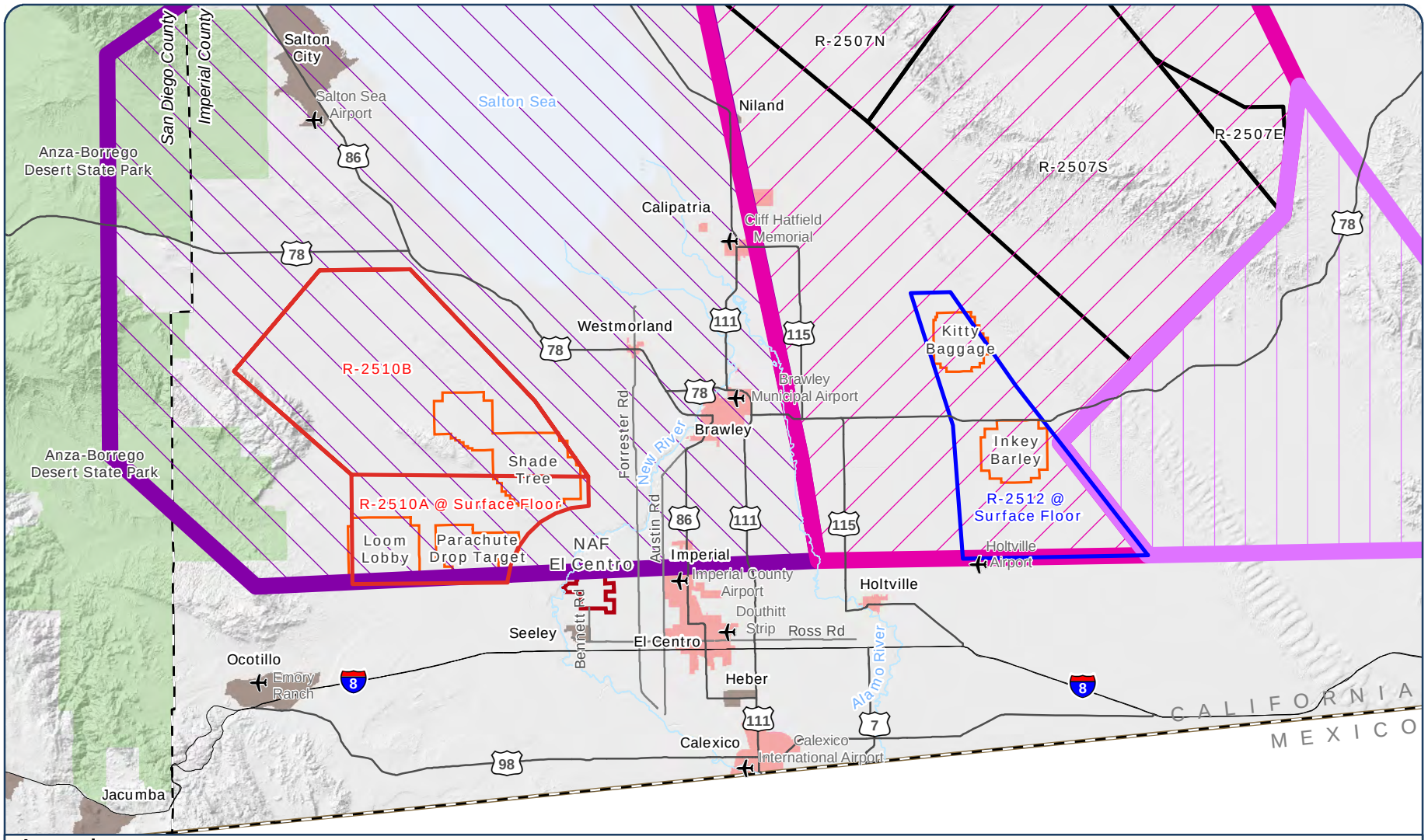
MOAs are further defined by usage. For example, special operations or training where target bombing exercises for NAFEC occur is limited to a very small portion of the overall MOA. These special operations are typically performed under restricted airspace (RA) that allows for ordnance and weapon firing (see the following discussion for more details on the RAs associated with the NAFEC fleet support mission). The use of RA is to protect the general public from unnecessary impacts associated with these types of exercises. Figure 3-13 illustrates the footprint of the vast SUA or MOA for the NAFEC training mission that occurs in the regional area which could potentially have an impact on land uses under or proximate this airspace.

Although the potential impacts associated with the MOA varies by location, aircraft, and altitude of training exercise, the extensive MOA should be considered by the County and the Cities in future long-range planning.

## Restricted Airspace 2510 – (R-2510)

R-2510 is located northwest of NAFEC Main Base encompassing a land mass area of 241.36 square miles in Imperial County. R-2510, also known as West Mesa, has a southern boundary that begins approximately at the northwestern portion of the 60 CNEL prospective noise contour of the NAFEC airfield. West Mesa extends further northwest towards State Routes 78 and 86. West Mesa's eastern boundary is where the Sonoran Desert and the myriad of California State Parks meet, i.e. Anza-Borrego Desert State Park. West Mesa is also divided into A and B categories for the purposes of providing different capabilities to aviators in training.

**West Mesa (R-2510A)** is used for parachute testing and helicopter activities. R-2510A has a surface to 15,000 foot range for aviation activity. This is the range of airspace for which training activities occur when this RA is activated. West Mesa B hosts the National Parachute Test Range and Target 103 or Loom Lobby. This area's capabilities include electronic and acoustically-scored target bombing as well as landing and drop zones for parachute testing activities. Furthermore, Loom Lobby is also outfitted with night lighting to enable night-time training for pilots and parachutists.




Source: NAF El Centro, 2013.

Fig_3-13_NAFEC_JLUS_MOA_201140214a_JKC.pdf

**Figure 3-13**
**Military Operating Areas**

**West Mesa (R-2510B)** is used by various squadrons that visit NAFEC annually to train in combat scenarios in the tactics of military target bombing. R-2510B's aviation range begins at 15,000 feet to a flight level (FL) 400. A flight level is an altitude expressed in thousands of feet. It is expressed as a mean sea level (MSL) that is achieved based on a specific barometric pressure in consideration of elevation. Target 101 or Shade Tree is located in this portion of West Mesa. This area allows for scored (electronic and acoustic) and non-scored target bombing exercises. In addition, Shade Tree has night lighting to enable additional capabilities for effective night-time training for pilots.

## Restricted Airspace 2512 – (R-2512)

R-2512, or East Mesa, is located east-northeast of NAFEC Main Base and encompasses an area of 98.99 square miles. The southern boundary of R-2512 is north of the City of Holtville and extends along the Southern Pacific Rail line to its northern boundary towards the Chocolate Mountain Aerial Bombing and Gunnery Range. This RA also traverses portions of State Route 86 on the eastern side of Imperial County.

The targets associated with R-2512 are Target 68 (Inkey Barley) and Target 95 (Kitty Baggage). East Mesa's capabilities include target bombing equipment (instrumented and non-instrumented). A landing and drop zone are also available to enable aircraft landings and parachute operations and activities. R-2512 has an aviation activity range from the surface to FL230 when activated.

*Source: El Centro Range Complex Management Plan, 2012; NAF El Centro Ranges, 2013; NAF El Centro AICUZ, 2010.*

## Military Training Routes

Military training routes (MTRs) for NAFEC extend beyond the MOA described later and illustrated in Figure 3-14. The operations associated with these MTRs include low-level flight operations as well as high-airspeed flyover. These types of operations can generate noise and vibration that can potentially impact proximate land uses. The degree of impact is dependent on many variables such as weather, vertical obstructions, and types of aircraft. There are typically two types of military training routes—visual flight rule (VFR) and instrument flight rule (IFR).

### *Visual Flight Rule Military Training Route*

A visual flight rule MTR is a route that allows pilot to operate an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going. For the purposes of this JLUS, there are three low-level VFR MTRs associated with the NAFEC training ranges with varying floors including 200 feet, 300 feet, and other unknown floors.

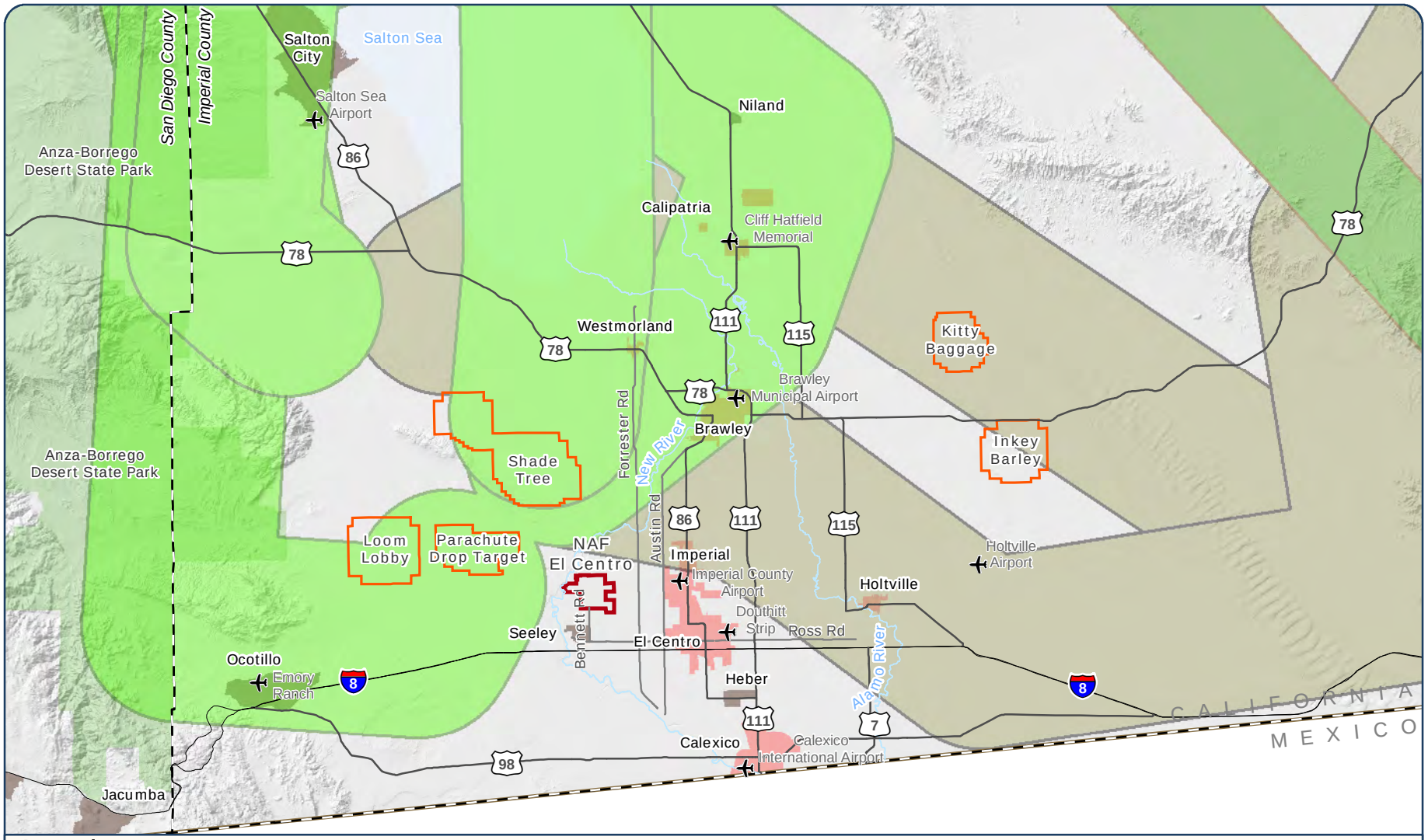
### *Instrument Flight Rule Military Training Route*

An instrument flight rule is a flight rule which is employed under conditions where flight by outside visual reference is not safe. IFR flight depends upon flying by reference to instruments in the flight deck, and navigation is accomplished by reference to electronic signals. For the purposes of this JLUS, there is one IFR MTR associated with the NAFEC training ranges with a floor of 200 feet.

For planning purposes, the routes illustrated in the figure represent the MTR corridor, which represents an area from 2.5 to 5 nautical miles (NM) on either side of the centerline, for a total of five to 10 NM wide. This area provides the pilots that train within this area the optimal space to perform the operations. This is important to consider as adjacent or proximate land uses may be impacted due to expansive footprint of the MTR corridors. The degree of impacts is dependent on many variables such as weather and types of aircraft.

The types of aircraft that use the NAFEC airfield and training ranges are:

- **A-10 Thunderbolt II.** The A-10 Thunderbolt II is US Air Force (USAF) jet-strike fighter primarily used for close air support (CAS). It was developed as a weapons delivery system designed to attack tanks, armored vehicles, and other surface targets with limited air support. A second mission of this aircraft is to provide forward air support where it guides other aircraft to destroy surface targets.
- **AV-8B Harrier II. The** AV-8B Harrier II is a vertical / horizontal takeoff and landing aircraft used by the US Marine Corps (USMC), Italian and Spanish Navy. This aircraft is designed for light attacks and multi-purpose missions. The aircraft typically takes off from small aircraft carriers, amphibious attack ships, and forward operating bases.




**Legend**

- Floor Elevation from Ground Level - Surface
- Floor Elevation from Ground Level - 200 feet
- Floor Elevation from Ground Level - 300 feet
- NAF El Centro
- Range
- Incorporated City
- Unincorporated Community
- International Boundary
- County Boundary
- California State Park
- Interstate
- US Highway
- Major Road
- River
- Airport

0 5 10 Miles

Source: NAF El Centro, 2013.

Fig_3-14_NAFEC_JLUS_MTR_20140214a_JKC.pdf

**Figure 3-14**
**Military Training Routes**

- **C-12 Huron.** The C-12 Huron is air support aircraft with a two-engine turboprop. This aircraft is used by all the US military services and is applied in various duties including embassy support, medical evacuation, light cargo support, and in some airframes of this model, it is equipped with surveillance systems for other missions.
- **C-130 Hercules.** The C-130 Hercules is an air transport aircraft designed to be used in troop and cargo transport as well as medical evacuation. This aircraft is used by US and international military units, but the USAF is the typical user.
- **E-3 Sentry.** The E-3 Sentry is an airborne early warning and control airframe designed to provide all-weather surveillance, command, control, and communications support. The typical users of this aircraft include the USAF, North Atlantic Treaty Organization (NATO), Royal Air Force, French and Royal Saudi Air Force.
- **EA-6B Prowler.** The EA-6B Prowler is a strategic national asset in that this aircraft can be deployed from a land base or an aircraft carrier. Its purpose is to monitor the electromagnetic spectrum, and if necessary, is used to jam radars. Typical users of this aircraft are US Navy and USMC with some USAF users.
- **EA-18G Growler.** The EA-18G Growler is a US Navy tactical aircraft that monitors and performs the full-spectrum of electromagnetic surveillance including jamming radars. This airframe can be deployed from land-based installations and carriers.
- **F-5 Freedom Fighter.** The F-5 Freedom Fighter is a supersonic fighter aircraft in the US Navy inventory. Its comparable international airframe is known as the Soviet's Mikoyan-Gurevich (MiG-21). This aircraft was the most effective air-to-air fighter in the US between 1960 and 1970.
- **F-16 Fighting Falcon.** The F-16 Fighting Falcon is a single-engine, multi-purpose fighter aircraft typically used by the USAF. It is considered to an air superiority day fighter and has recently evolved into an all-weather multi-purpose aircraft. The USAF is no longer purchasing this aircraft; however, there are numerous international users of this aircraft.
- **F/A-18 Hornet (A-D) and Super Hornet (E/F).** The F/A-18 is high-speed **fighter** aircraft that can be deployed from both land bases and carriers. The set of capabilities for this aircraft is numerous and include: enemy air defense suppression, reconnaissance, fighter escort, and day and night strike missions.
- **F-35 (A, B, and C) the F-35 Lightning II.** The F-35 Lightning II is the new fighter aircraft that will replace the F/A-18 aircraft. The F-35 has the capabilities of performing combat missions such as tactical bombing and air defense missions. In addition, the F-35 has three different airframes: a conventional takeoff and landing aircraft, a short takeoff and vertical landing airframe, and a carrier-based airframe.
- **UH-1 Iroquois.** The UH-1 Iroquois is a single, turboshaft engine military helicopter with a main and tail rotor. This aircraft is typically used for medical evacuation and utility activities by the US Army and other international military units.
- **SH-3 Sea King.** The SH-3 Sea King is a twin-engined amphibious helicopter designed to attack submarines. The aircraft is equipped with sophisticated sonar for detecting, classifying, identifying, and tracking the submarine. The aircraft is typically used by the US Navy, Italian Navy, and other international naval services.
- **CH-46 Sea Knight.** The CH-46 Sea Knight is a tandem rotor air transport helicopter. Its mission is multi-purpose in that it supports all-weather, day or night, assault transport of troops, supplies, and equipment. In addition, this helicopter is used for search and rescue as well as forward refueling and rearming points. The typical user is the USMC and other international units.
- **CH-47 Chinook.** The CH-47 Chinook is a heavy-lift tandem rotor helicopter used by the US Army and the Royal Air Force. This aircraft is designed specifically for troop movement, artillery installation, and battlefield resupply.
- **CH-53 Sea Stallion.** The CH-53 Sea Stallion is another heavy-lift air transport helicopter typically used by the USMC and other international forces including German Army and Israeli and Mexican AF.

- **UH-60 Black Hawk.** The UH-60 Black Hawk is a twin-engined air lift utility helicopter typically used by the US Army.
- **AH-64 Apache.** The AH-64 Apache is a twin-engined attack helicopter. It is designed with a sensor suite in the front-end of the aircraft for target acquisition and night vision systems. This aircraft's typical users include the US Army and international AF units.
- **KC-10 Extender.** The KC-10 Extender is a three-engined airliner designed for transport and refueling. The main users of this aircraft are the USAF and the Royal Netherlands Air Force.
- **KC-135 Stratotanker.** The KC-135 Stratotanker is a jet-powered military aircraft designed for its primary role as an aerial refueler. This aircraft is typically used by the USAF, French AF, and other international AF units.
- **MV-22 Osprey.** The MV-22 Osprey is a US Marine Corps support transport. It has the capability of deploying, quickly embarking, and operating from all ships excluding carriers to provide contingency support, combat support, and non-combat support.
- **T-34 Talon.** The T-34 Talon is a USAF supersonic trainer. It is designed to train pilots and instructor pilots in flight maneuvers. This aircraft is typically used by the USAF and US Navy.
- **T-45 Goshawk.** The T-45 Goshawk is the Navy's high-performance trainer for naval aviators. This aircraft is used to train naval aviators in high-performance jet aircraft and it also allows for standard instrument rating and initial carrier qualification. This aircraft also has the capacity to carry a variety of weapons including the MK-76 practice bombs.

Both national and international pilots use these aircraft following the MTRs associated with the NAFEC training ranges to enable pilots to train and accomplish the needed skills and earned hours to achieve proficiency in various combat, tactical, and non-combat missions. In addition to noise and vibration, the MTRs allow for certain aircraft to train at low altitudes, thus it is important to consider vertical obstructions within the footprint of the MTRs.

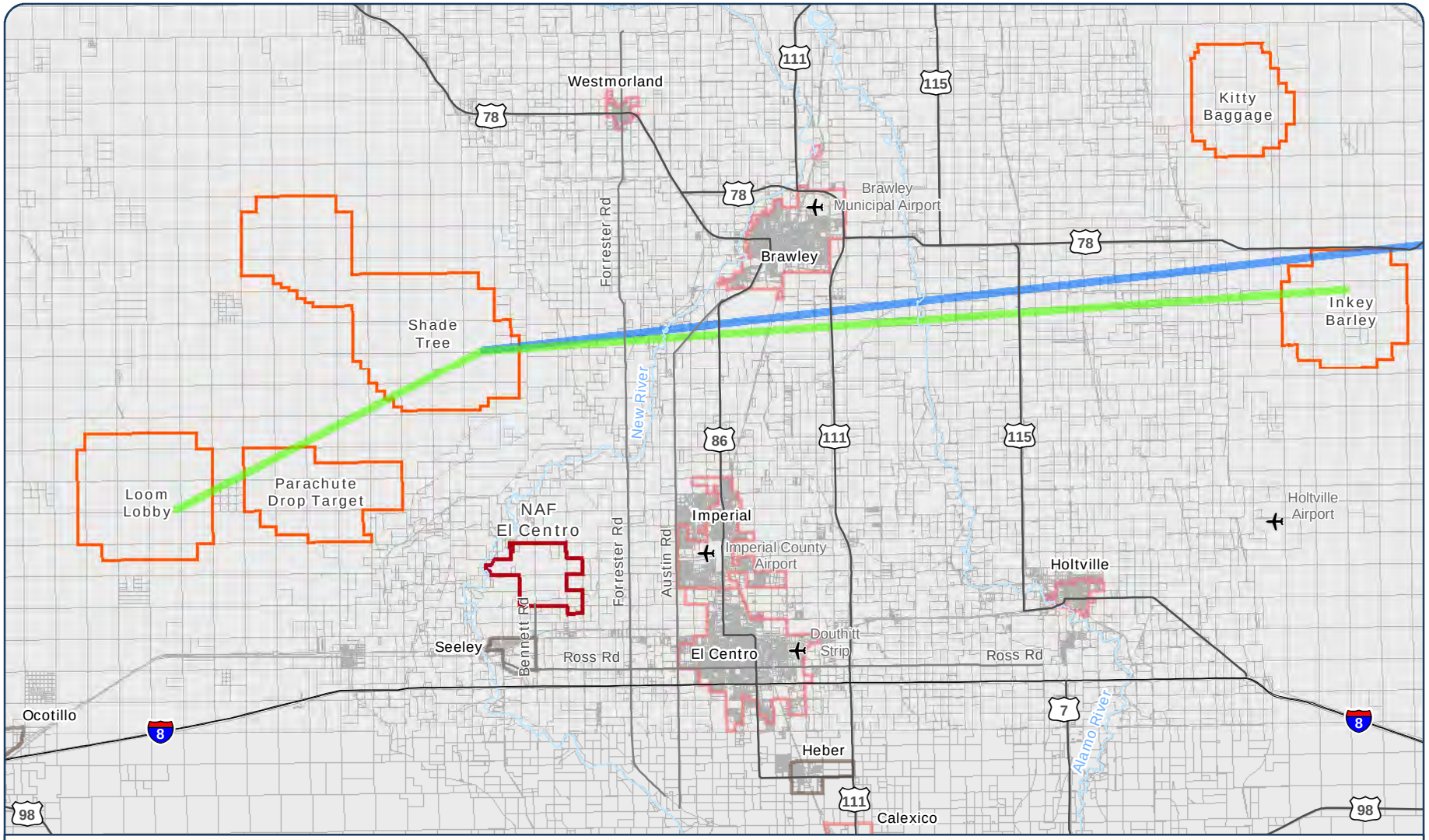
*Source: NAF El Centro AICUZ, 2010.*

### Microwave Line-of-Sight

The Microwave Line-of-Sight footprint is defined as the area in which electromagnetic waves or acoustic waves are transmitted or spread to various communication sites by simple unobstructed horizontal planes. This horizontal plane is at a certain height. This allows for a clear, unobstructed pathway for the transmission of electromagnetic waves for electronic scoring of bombing and target practice.

Specifically for NAFEC training ranges, the height for the microwave line-of-sight is 230 feet in elevation. Currently, the microwave line-of-sight begins in the northeast corner of Target 103, Loom Lobby, and runs northeast to a remote-controlled tower situated in the northeast corner of Target 101, Shade Tree. From that coordinate, the microwave line-of-sight runs directly east to another tower situated approximately in the middle of Target 68, Inkey Barley. The NAFEC microwave line-of-sight is illustrated in Figure 3-15. It is important to note that the area in the vicinity of this communication line is free and clear of obstructions that would interfere with communications during training exercises and evaluation of accuracy of ordnance and maneuvering delivery.

The existing line-of-sight experiences an occasional interference from meteorological conditions such as extreme variations in temperature. Therefore the Navy has plans to construct a new tower to replace the existing tower that will in turn generate a new line-of-sight. The proposed line-of-sight is also illustrated in Figure 3-15. However, this proposed line-of-sight is based on a preliminary location for the future tower and as funding becomes available the exact location of the tower will be determined.




Source: Matrix Design Group, 2013.

*Fig_3-15_NAFEC_JLUS_Line-of-Sight_20140214a_JKC.pdf*

**Figure 3-15**
**Microwave Line-of-Sight**

Please see the next page.


## Introduction

This section provides an overview of plans and programs that are currently used or applied in evaluating and addressing compatibility issues in the NAF El Centro (NAFEC) Joint Land Use Study (JLUS) area. Three types of planning tools are evaluated; permanent, semi-permanent, and conditional. Permanent planning tools include acquisition programs, either fee simple purchase of property or the purchase of development rights. Semi-permanent tools include regulations such as zoning or adopted legislation. Conditional tools include general plans (GP), memorandums of understanding (MOU), intergovernmental agreements (IGA), and other policy documents such as general plans that can be modified.

The local jurisdictional planning tools include existing and proposed plans and programs that have been prepared and adopted by the study area jurisdictions. This discussion includes an evaluation of the type of planning tools utilized by the study area jurisdictions. A review and evaluation of state and federal plans and programs is also included. In terms of implementation, an overview of the programs undertaken for NAFEC includes the 2010 Air Installations Compatible Use Zones (AICUZ 2010), the 2014 Draft Range Air Installation Compatible Use Zones (RAICUZ), the Integrated Natural Resources Management Plan and the Encroachment Action Plan.

## Federal Programs and Policies

### AIR INSTALLATIONS COMPATIBLE USE ZONES

The Air Installations Compatible Use Zones (AICUZ) program involves coordinating the efforts of base commanders and local community leaders and other government agencies to encourage compatible development of land adjacent to military airfields. The AICUZ program seeks to protect the health, safety, and welfare of civilians and military personnel by encouraging land development compatible with aircraft operations, while protecting the public investment in the installation. This program recommends compatibility measures for both the NAF and surrounding communities. The AICUZ program also recommends land uses that are compatible with specific elements of military airfields including elevated sound levels, accident potential zones, and obstruction clearance criteria.

The Chief of Naval Operations Instruction (OPNAVINST) 11010.36C guides development and operations at naval airfields. The AICUZ provides recommendations to local government and other entities for actions they can take to further compatibility goals and objectives of their general plans, zoning ordinances, and other land use regulations. The AICUZ provides the methodology for assessing impacts of noise generated by military operations on surrounding communities. NAF El Centro contour maps accurately reflect current aircraft arrival/departure procedures and projections for potential changes in aircraft type and number. The four significant elements of the AICUZ report are outlined below:

1. Noise Zone Footprint: Noise zones are outlined into three categories, which are:

    a. Zone I noise in this area is compatible with most noise sensitive land uses.
    b. Zone II noise is usually incompatible with noise-sensitive land uses.
    c. Zone III noise is incompatible with noise-sensitive land uses.

Health, Safety, and Welfare: These efforts seek to reduce the nuisance of excessive noise generated by aircraft operations and public danger by discouraging the development of incompatible land uses such as businesses and housing in Accident Potential Zones (APZs).

Public Investment: Promoting compatibility between a military installation and local communities safeguards military operations and protects the public investment in the installation.

Public Awareness and Communication: By working with the community and informing local citizens of operations and safety measures, the military can promote safety for community residents. As local leaders work with military officials to adopt compatible development practices, their relationship is strengthened through the resolution of mutual concerns.

## U.S. AVIAN HAZARD ADVISORY SYSTEM

The U.S. Avian Hazard Advisory System (USAHAS) is a geographic information system-based bird avoidance model developed by the U.S. Air Force used for "analysis and correlation of bird habitat, migration, and breeding characteristics, combined with key environmental and man-made geospatial data." The model provides up-to-date information – "near real-time" – about bird activity and movements to assist pilots and flight planners in the scheduling and use of flight routes. The model can also be used as a forecasting tool to estimate bird strike risk. Information from the North American Breeding Bird Survey, Audubon Christmas Bird Count, bird refuge databases, and the U.S. Air Force Bird-Aircraft Strike database as well as public domain information regarding landfill locations is used to formulate the bird activity and movement data. The model is available for use by agencies and the general public, accessible from the USAHAS website at http://www.usahas.com/.

## BIRD AIRCRAFT STRIKE HAZARD

NAFEC prepared a Bird Aircraft Strike Zone (BASH) plan in 2012 to help minimize the threat of wildlife strikes to aircraft, especially during landing and take-off operations. A Bird Avoidance Model was prepared in 2002 which encouraged better reporting of bird strikes to increase safety. In 2005, Management Guidelines for Burrowing Owls, which are a designated species of special concern by the US Fish and Wildlife Service (USFWS), was introduced to educate leaders how to discourage the owl from nesting in the vicinity of take-off and landing zones. The plan calls for a Bird Hazard Warning Group (BHWG) and outlines their responsibilities while establishing procedures to identify high hazard situations and mitigation measures. All permanent and transient aircrews are instructed to be aware of procedures and precautions

## CALIFORNIA DESERT CONSERVATION AREA PLAN

The California Desert Conservation Area Plan (CDCAP) is a multiple use management plan based on the tenants of FLPMA and a Congressional mandate for special management of 25 million acres of desert in California. It is based on the BLM's mission of supporting multiple uses, sustained yield, and the maintenance of environmental quality. The plan designates this region the California Desert Conservation Area and seeks to enhance the economic, educational, recreational, scientific, and natural value of this area through careful management practices. Because of the proximity of NAFEC to these lands, it is an important element to consider while addressing the long-term operations of the installation.

## CLEAN WATER ACT

The Clean Water Act (CWA) governs the management of water resources and controls and monitors water pollution in the US. The CWA establishes goals for eliminating the release of toxic substances and other sources of water pollution to ensure that surface waters meet high quality standards. In so doing the CWA prevents the contamination of nearshore, underground and surface water sources.

## ENDANGERED SPECIES ACT

The Endangered Species Act (ESA) establishes a program for the conservation of threatened and endangered plants and animals and their habitats. The USFWS and National Oceanic and Atmospheric Administration (NOAA) are the lead implementing agencies of the ESA. The ESA requires federal agencies, in consultation with the USFWS and/or the NOAA Fisheries Service, to ensure that actions they "authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species." The law also prohibits any action that causes a taking of any listed species of endangered fish or wildlife. ESA provides a platform for the protection of critical habitat and species that may be at risk of extinction.

For the purposes of this JLUS and within the JLUS study area, the primary species of concern for compatibility planning are the Burrowing Owl (Athene cunicularia) and the Flat-tailed Horned Lizard (Phrynosoma mcallii). The Burrowing owl has been identified as a Bird of Conservation Concern by the USFWS, but it is currently not listed as threatened or endangered.

While there has been an effort to list the Flat-tailed Horned Lizard as threatened or endangered; as of March 2011 it is a USFWS species of critical concern. Neither animal is listed on the 2013 State of California Department of Fish and Wildlife's State and Federally Listed Endangered and Threatened Animals of California publication.

A management plan has been created and adopted for the the Flat-tailed Horned Lizard (FTHL) to ensure the species is not jeopardized.

In 2005, NAF El Centro developed management guidelines for the burrowing owls and their habitat on base. These guidelines and plans provide the necessary framework to manage the species of concern while minimally impacting training operations at the installation.

*Source: USFWS, 2011. 76 FR 14209 - Endangered and Threatened Wildlife and Plants; Withdrawal of Proposed Rule To List the Flat-Tailed Horned Lizard as Threatened.*

## FEDERAL LAND MANAGEMENT AND POLICY ACT OF 1976

The Federal Land Management and Policy Act (FLPMA) established the authority for public agencies that possess public lands to manage and plan according to national and local interests. The law mandates that public lands identified for development shall uphold and protect the scientific, scenic, historical, ecological, environmental, and other values unique to specific geographies. This law provides the impetus for the various resource management plans developed and prepared for public agencies [i.e., Bureau of Land Management (BLM)].

## FEDERAL AVIATION ACT

The Federal Aviation Act [Title 14 Code of Federal Regulations (CFR) Part 77] was enacted in 1958 to provide methods for overseeing and regulating civilian and military use of airspace over the United States. The Act requires the Secretary of Transportation to make long-range plans that formulate policy for the orderly development and use of navigable air space. The intent is to serve the needs of both civilian aeronautics and national defense, but does not specifically address the needs of military agencies. Military planning strives to work alongside local, state, and federal aviation law and policies but sometimes must supersede these and other levels of government due to national security interests. The Federal Aviation Administration (FAA) was created as a result of the Act for a variety of purposes, including the management of airspace over the US.

The 500-foot rule, promulgated by the FAA, states that every citizen of the United States has "a public right of freedom of transit in air commerce through the navigable air space of the United States." The rule was formally announced in the 1963 Court of Claims ruling in Aaron v. United States and states that flights 500 feet or more above ground level (AGL) do not represent a compensable taking because flights 500 feet AGL enjoy a right of free passage without liability to the owners below.

Another important outcome of the Act is FAA Regulation Title 14 Part 77, commonly known as Part 77, which provides the basis for evaluation of vertical obstruction compatibility. This regulation determines compatibility based on the height of proposed structures or natural features relative to their distance from the ends of a runway. Using a distance formula from this regulation, local jurisdictions can easily assess the height restrictions

near airfields. Additional information on Part 77 is located on the Federal Aviation Administration Internet site at http://www.faa.gov/.

As of January 29, 2013, the main focus of Part 77.17 is to establish standards to determine obstructions within navigable airspace, typically within a certain distance from an airport or airfield. It defines an obstruction to air navigation as an object that is of greater height than any of the following heights or surfaces in the following manner:

- A height of 499 feet AGL at the site of the object.
- A height that is 200 feet AGL or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length. This height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 499 feet; see Figure 3-6 for an illustration of this portion of the FAA Part 77 Vertical Obstruction Compliance.
- A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.
- A height within an en route obstacle clearance area, including turn and termination areas, of a federal airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.
- The surface of a takeoff and landing area of a civilian airport or any imaginary surface established under 77.19, Deaprtment of Defense (DOD): 77.21, and heliports: 77.2. However, no part of the takeoff or landing area itself will be considered an obstruction.
- Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:
  - 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance.
  - 15 feet for any other public roadway.
  - 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.
  - 23 feet for a railroad.
  - For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it.

The FAA has identified certain imaginary surfaces around runways to determine how structures and facilities are evaluated and identify if they pose a vertical obstruction relative to the airspace around a runway. The levels of imaginary surfaces build upon one another and are designed to eliminate obstructions to air navigation and operations, either natural or man-made. The dimension or size of an imaginary surface depends on the runway classification.

## IMPERIAL SAND DUNES DRAFT RECREATIONAL AREA MANAGEMENT PLAN

The Imperial Sand Dunes Draft Recreational Area Management Plan (ISDRAMP) updated in 2003, outlines management practices effecting recreation and public access, special designations, special status species, mineral resources, and lands and real property for the Imperial Sand Dunes Special Recreation Management Area in Imperial County, California. The special management area focuses on the Algodones Dunes Wilderness area located in eastern Imperial County which could impact firing ranges associated with NAFEC in that region. Open dialogue between the BLM and NAFEC during the plan adoption process can facilitate cooperation and compatible use planning for this sensitive region.

*Source: BLM El Centro Field Office Imperial Sand Dunes Draft Recreation Area Management Plan and Draft EIS, March 2010.*

## NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (NEPA) of 1969 is a federal law establishing a U.S. national policy to promote the protection and enhancement of the environment and requiring federal agencies to analyze and consider the potential environmental impact of their actions. The purpose of NEPA is to promote informed decision-making by federal agencies by making detailed information concerning significant environmental impacts available to both agency leaders and the public.

All projects receiving federal funding, requiring a federal permit, or occurring on federal property require NEPA compliance and documentation. NEPA is applicable to all federal agencies, including the military. Not all federal actions require a full Environmental Impact Statement (EIS). In some cases, an action may not cause a significant impact, whereby an agency is only required to prepare an Environmental Assessment (EA).

A NEPA document can serve as a valuable planning tool for local planning officials. An EA or EIS can assist in the determination of potential impacts that may result from changing military actions or operations and their effect on municipal policies, plans and programs, and the surrounding community. Public hearings are required for all EIS documents released under NEPA. The Act requires publishing of a draft EA and subsequent Finding of No Significant Impact (FONSI) allowing public comment for a period of 30 days. An EA may result in a FONSI or Record of Decision concluding that the action will have a significant impact and an EIS is required. The information obtained by the EA / EIS is valuable in planning coordination and policy formation at the local government level.

The NEPA mandates that the military analyze the impact of its actions and operations on the environment, including surrounding civilian communities. Inherent in this analysis is an exploration of methods to reduce any adverse environmental impact.

## NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into U.S. waters. Point sources are discrete conveyances such as pipes or man-made ditches. According to the law, individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need a NPDES permit, but industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

## NOISE CONTROL ACT OF 1972

The Noise Control Act of 1972 determined that noise not adequately controlled has the potential of endangering the health and welfare of people. It states that all Americans are entitled to an environment free from noise that can jeopardize their general health and quality of life. Along with state, local, and territorial governments, actions from the federal government were needed to ensure that the objectives of the Act were met.

Concurrently, military installations were experiencing the impacts from encroaching urban development located adjacent to the installation and the resulting complaints regarding noise from military flight operations. In 1973, the DOD responded by establishing the AICUZ program.

The Noise Control Act and the AICUZ program are important because encroaching development and increased population near military installations often creates compatibility concerns. As communities grow, it is important that the military installation, developers, and the communities work together to mitigate the issue of noise and develop ways to coexist compatibly.

California state law requires counties and cities to develop noise elements within their general plans to mitigate adverse impacts generated from noise sources and protect the general welfare of the public. In applying this law, Imperial County and the Cities of El Centro and Imperial have current GP noise elements to include compatibility measures as they relate to aircraft operations and noise impacts. Such measures include:

- Generally, using a measurement that expressly describes the noise impacts at the community level, the Community Noise Equivalent Level (CNEL), though these are not consistently articulated throughout all documents in all communities in the study area.
- A "Land Use Compatibility for Community Noise" chart for each entity affected by the prescribed noise sources outlined in the state legislation, though not consistently articulated throughout all documents in all communities in the study area.
- The Imperial County GP prescribes that a noise impact analysis shall be required in the environmental review process in areas where noise-sensitive land uses are 'generally unacceptable' or projects are likely to produce noise that exceeds the levels for existing or planned noise-sensitive areas.
- The County of Imperial and the Cities of El Cento and Imperial have established both exterior and interior noise level standards based on noise sources, noise frequency, and type of land use, though these are not consistently articulated throughout all documents in all communities in the study area.

## PUBLIC LAW 104-201, HOUSE OF REPRESENTATIVES 1308; (THE NATIONAL DEFENSE AUTHORIZATION ACT), AS AMENDED AND COOPERATIVE AGREEMENT

Public Law (PL) 104-2001, also known as the El Centro Naval Air Facility Ranges Withdrawal Act, authorized the Secretary of the Navy to notify BLM and the Bureau of Reclamation (BOR) under the direction of the Secretary of the Interior, pursuant to the cooperative agreement of June 1987, that the Navy intends to withdraw and reserve certain lands located on 46,600 acres (Target Ranges —Shade Tree, Loom Lobby, Inkey Barley, and Kitty Baggage) in Imperial County for defense-related purposes.

Management of these lands is accomplished through a cooperative agreement or Memorandum of Understanding (MOU) between the BLM, BOR, and the US Navy consistent with FLPMA. This agreement specifies the BLM as the management entity requiring concurrence with NAFEC. The BLM's responsibilities include the protection of wildlife and its habitat; control of predatory and other animals; prevention and appropriate suppression of fires resulting from non-military activities; geothermal leasing and development and related power production; and mineral leasing and development as well as mineral material sales.

The El Centro Naval Air Facility Ranges Withdrawal Act is effective until 2022. By 2017, the Secretary of the Navy will need to notify the Secretary of the Interior, BLM as to whether there is a continuing military need for any or all of the land withdrawn and reserved and subsequently file an application for extension of the withdrawal and reservation with the Department of Interior.

## RANGE AIR INSTALLATIONS COMPATIBLE USE ZONES

The Range Air Installation Compatible Use Zone (RAICUZ) report is a DOD program to identify safety zones and noise contours associated with military-related operations and training exercises such as weapons delivery and target bombing practice conducted on a range. The primary purpose of a RAICUZ is to provide local government and land management agencies with recommended land uses to protect the general welfare of the public from impacts related to military training and operations and preserve the viability of the military mission and readiness. The RAICUZ for the NAFEC training ranges is currently being developed with an expected draft in April 2014.

## READINESS AND ENVIRONMENTAL PROTECTION INITIATIVE

The Readiness and Environmental Protection Initiative (REPI) was authorized by Congress to financially assist the military services in working with other government agencies including local governments to establish buffers around military installations. The REPI initiative is designed so local governments or third party entities, such as land trusts, may either acquire lands through a fee simple purchase or by placing the lands in conservation easements. This program serves as a dual benefit program: to protect military readiness by preventing incompatible development along borders between military installations and their neighbors and to protect sensitive environmental natural resources.

## SOLAR ENERGY DEVELOPMENT FOR SIX SOUTHWESTERN STATES RESOURCE MANAGEMENT PLAN

The Solar Energy Development in the Six Southwestern States Resource Management Plan (RMP) includes Arizona, California, Colorado, Nevada, New Mexico, and Utah and requires developers who propose large-scale

utility solar energy projects (generating 20 Megawatts (MW) or greater) on public lands to do so on lands identified in the Solar Energy Program in combination with identified priority lands in the Solar Energy Zones (SEZs). The BLM has also identified potential available lands, labeled as variance lands, in this Plan. This plan provides the guidance for local communities in siting and planning solar energy development projects in the JLUS planning area.

## NAF El Centro Plans and Programs

The NAFEC plans and programs are the specific, existing tools that the installation, in collaboration with the Department of the Navy (DON), has developed to implement various federal statutes. These plans may be modified based on mission changes or requirements and funding availability, so they are considered semi-permanent programs.

### NAF EL CENTRO BIRD/ANIMAL AIRCRAFT STRIKE HAZARD PLAN

The NAFEC Bird/ Animal Aircraft Strike Hazard (BASH) Plan was recently updated in June 2012. The NAFEC BASH plan establishes the Bird Hazard Working Group (BHWG) and identifies several points of contact and their corresponding role and responsibility as the organization monitors and manages the incidence of bird / wildlife strikes. This plan also outlines the concept for BASH awareness through the use of a warning system to include the use of "stop-light" colors to indicate the level of hazard to pilots and aircraft. The NAFEC BASH Plan provides clear guidance about communicating the hazard level through the established warning system to the Air Traffic Control Tower (ATCT) and subsequently to approaching and departing pilots.

In addition, the NAFEC BASH plan provides workable strategies for mitigating BASH incidents, such strategies include but are not limited to the following:

- Land Management controls
- Broad-leafed weed management
- Leveling of airfield
- Monitor and maintain drainage sites
- Bird proofing buildings and aviation structures
- Design features
- Management of off-base land uses

While the base does not have control over the land uses outside the installation, it is imperative that the Navy provide input in development matters that potentially encourage increases in bird and wildlife populations near the airfield.

An evaluation of the NAFEC BASH plan indcates that the map of the exclusion zone, where development and development features that encourage birds and wildlife are strongly discouraged, is not included in the BASH Plan.

The success of this plan is based on the effective monitoring and mitigating of likely hazardous conditions, awareness and education of relevant persons associated with airfield operations, and the ongoing collection of data regarding BASH incidents.

### NAF EL CENTRO INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

The NAFEC Integrated Natural Resources Management Plan (INRMP) is currently being developed with an expected draft release in the third quarter of 2013.

### NAF EL CENTRO RANGE COMPLEX MANAGEMENT PLAN

The NAF El Centro Range Complex Management Plan identifies the key military components of NAFEC ranges and their associated capabilities. These components include restricted airspace, military training routes, and information about the targets and other military training equipment. This plan is the guiding framework for management of the range components in association with aviation and training operations. In addition, this plan identifies the controlling agencies for air traffic communication and use of the ranges and airspace. This plan is essential for understanding the breadth of the NAFEC military mission.

## State of California Departments

### CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

The California Environmental Protection Agency (Cal / EPA) is the agency responsible for the development and implementation of the state's environmental protection laws that provide for clean air, water, and soil, as well as safe pesticide and waste reduction and recycling programs. The Cal/EPA has several financial assistance programs for both public and private entities to defray the costs of environmental planning and development. Such programs consist of grants and loans for education and training while other financial assistance programs are loans that subsidize the cost of water resource planning and agricultural drainage planning. The Cal/EPA provides the Environmental Enforcement and Training Grants to public and private entities to educate and train public servants, such as fire fighters and peace officers, about environmental enforcement actions. The Agricultural Drainage Loan Program provides assistance through low-interest loans to projects that address treatment, storage, and conveyance of agricultural drainage threatening the state's natural water resources.

The Cal/EPA offers several programs for technical assistance and environmental education and awareness. One such program is the National Environmental Information Exchange Network (NEIEN) Projects Grant Program. This system is a partnership among states, tribes, and the US Environmental Protection Agency to share environmental information. The information is organized by medium:

- Air
- Facilities
- Hazardous Materials
- Water

*Source: California Environmental Protection Agency, http://www.calepa.ca.gov/Programs/*

### CALIFORNIA DEPARTMENT OF CONSERVATION

The Department of Conservation is the state agency responsible for educating and promoting environmental health through informed land use decisions and enabling sound land management practices that protect California's natural resources. California's Department of Conservation offers several programs to conserve and preserve the agricultural geography and value unique to the state; such programs include grant programs like the Sustainable Community Planning Incentive Grants and Watershed Coordinator Grants. The grants are offered to public agencies and quasi-public agencies, e.g., Metropolitan Planning Organizations (MPOs) and Councils of Government (COGs), and larger grant awards are considered for partnering agencies. The Sustainable Community Planning Incentive Grant promotes the reduction of greenhouse gas emissions and several sustainable program objectives such as improving air and water quality, equitable and affordable living, and water conservation.

The Watershed Coordinator Grants offer financial assistance to special districts, non-profit groups, and local governments for collaborative planning to promote watershed management and improve watershed infrastructure. The NAFEC is largely surrounded by agricultural lands using established irrigation and crop management practices.

### THE CALIFORNIA LAND CONSERVATION ACT / THE WILLIAMSON ACT

The California Land Conservation Act, or the Williamson Act, was enacted in 1965 to protect California's agriculture industry. It enables local governments to enter into contracts with private landowners to designate certain parcels of land exclusively for agriculture use or open space. This protection results in lower property tax assessments for landowners, and a state subsidy to local governments for reduced tax revenues associated with this designation. However, the Imperial County Board of Supervisors voted in 2010 to withdraw the protection of agricultural lands offered by the Williamson Act, which will change the development patterns throughout the county as these lands become available for development in 2016. The implications of the Act's legacy in the county are important to understand as development moves forward.

*Source: http://www.conservation.ca.gov/dlrp/Pages/index.aspx*

## CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The California Department of Fish and Wildlife (DFW) oversees the responsible management of the natural resources and wildlife populations and habitats throughout the state, which is important when considering the proximity of NAFEC ranges and training facilities to wetlands and other wildlife habits along the New River, as well as other sensitive ecological sites throughout the county.

The agency provides guidelines for environmental management practices as well as land use alternatives and easements to protect important natural resources.

*Source: http://www.dfw.ca.gov/about/*

## CALIFORNIA ENDANGERED SPECIES ACT

The California Endangered Species Act (CESA) requires early consultation to prevent adverse impacts on endagenered species and their habitat and to adopt mitigation planning for development projects to allow for the recovery of endangered species and habitats. The Act allows for an incidental take of a listed endangered species or its habitat for a lawful development project. Coordination and a CESA Incidental Take Permit must be obtained from the DFW prior to construction.

*Source: California Department of Fish and Game, California Endangered Species Act (CESA), 2012.*
*http://www.dfw.ca.gov/habcon/cesa/incidental/cesa_policy_law.html*

## CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

The California Department of Forestry and Fire Protection (CALFIRE) is the state's lead agency responsible for managing and protecting over 31 million acres of California's privately-owned wildlands. The CALFIRE also provides various emergency services to over 60 percent of the state's counties and provides guidelines for building codes adopted and enforced by local jurisdictions. Since NAFEC is largely surrounded by desert and irrigated agricultural lands, forest fire risks and hazards are low to non-existent. The CALFIRE is a coorindating agency since managing risks from wildland fires falls primarily under federal or local authority.

*Source: http://osfm.fire.ca.gov/fireplan/fireplanning.php*

## CALIFORNIA OFFICE OF HISTORIC PRESERVATION

The California Office of Historic Preservation (OHP) monitors and manages California's historic landmarks through guidance and technical assistance for historic elements. No historic landmarks have been identified in or around the NAFEC study area; however, OHP services may be employed to reduce impacts on future significant historic structures.

*Source: http://ohp.parks.ca.gov/*

## CALIFORNIA DEPARTMENT OF TRANSPORTATION

The California Department of Transportation (CALTRANS) is the state transportation agency responsible for planning, construction, maintenance, and regional coordination of the state's roadway infrastructure, including airports, highways, and railways. The CALTRANS District 11 serves the NAFEC JLUS study area. US Interstate-8 (I-8) is the major east-west arterial through the county, while several State Routes (SR) run through the area, including SR 78, SR 86, SR 98, SR 111 and SR 115. These routes are not located within proximity to NAFEC and traffic accessing the facility must utilize a combination of local, state roads, and I-8 from the population centers to the east and north.

### California Department of Transportation Interregional Transportation Strategic Plan

The CALTRANS Interregional Transportation Strategic Plan provides a strategic vision for the major routes within the state, with certain US and state Highways (interregional road system) identified as High Emphasis Routes and Focus Routes. This plan is currently released as a Review Draft expected to be finalized this fiscal year. Once CALTRANS revises the Draft and issues a status update, they will begin a full update to revalidate the initial set of Focus Routes and consider whether some or portions of those routes should be excluded and new routes added.

The 2012 Review Draft of CALTRANS' Interregional Transportation Strategic Plan provides a strategic vision for I-8, and SR7, SR111, SR78, SR86, and SR905 within District 11. These routes and their classifications are:

- I-8 Goods Movement Gateway—no construction activities identified.
- Focus Route Concept: SR7, SR111, SR78, SR86, SR905 NAFTA Gateway—convert the remaining two-lane conventional segments on SR 111 between I-8 and the City of Brawley to an expressway. This includes completing the partially funded SR78-111 Brawley bypass. While these actions will greatly reduce delays, improve safety in the region and generally improve the quality of life in Brawley, they help to positively impact NAFEC mission sustainment through better surface transportation and increased mobility in the study area.

## STATE OF CALIFORNIA PLANS AND PROGRAMS

### California Advisory Handbook for Community and Military Compatibility Planning

The requirement for a compatibility handbook was reflected in Government Code §65040.9, which stated that the California Governor's Office of Planning and Research (OPR) was to prepare "an advisory planning handbook for use by local officials, planners, and builders that explains how to reduce land use conflicts between the effects of civilian development and military readiness activities ...".

Completed in 2006, The California Advisory Handbook for Community and Military Compatibility Planning is a milestone toward encouraging local decision-makers, land use planners, developers, and the military to work together to achieve sustainability of military installations. It was designed to serve as a resource to help develop processes and plans that sustain local economies, safeguard military readiness, and protect the health and safety of California's residents. The handbook is a useful tool for development of a JLUS as it details the different compatibility issues that should be evaluated and the types of compatibility tools available to address these issues.

### California Military Land Use Compatibility Analyst

The California Military Land Use Compatibility Analyst (CMLUCA) was developed by OPR to assist the development community and local governments in determining if a project affects military training areas and airspace. The CMLUCA is a mapping tool that identifies where a project is relative to the nearest military installation. This mapping application enables users to determine compliance with state legislation requiring the development community to notify the military of any project that may affect military readiness.

### Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) provides guidelines to balance the development of renewable energy projects while protecting sensitive natural ecosystems. As nationwide pressure for renewable energy development in the deserts of California has increased, this program has become a powerful state and federal tool to steady energy demands with natural resource protection. The plan instructs agencies associated with renewable energy development projects on how to comply with requirements pursuant to the California Natural Community Conservation Planning Act (NCCP Act) and ESA with the goal of conserving and recovering species and environments identified by the NCCP Act and ESA. Once the plan is approved, it will streamline future permitting efforts for the development of renewable energy projects to help California improve its renewables portfolio standard (RPS) while complying with USFWS and the DFW requirements.

*Source: Desert Renewable Energy Conservation Plan, 2011.*

### California Wildfire Coordinating Group

The California Wildfire Coordinating Group (CWCG) is an inter-agency group whose purpose is to strengthen coordination, communication, and cooperation during a wildfire event. The CWCG is comprised of the various agencies involved in fighting wildland fires. The organizations are:

- Bureau of Indian Affairs (BIA) – Pacific Region
- BLM
- CALFIRE
- California Emergency Management Agency (Cal EMA)
- US Forest Service (USFS) – Pacific Southwest Region
- National Park Service (NPS) – Pacific West Region
- USFWS – Pacific Southwest Region
- Cooperating Fire Agencies

The CWCG operates two field offices— a northern California office in Redding and a Southern California office in Riverside. These offices provide a multitude of services to the wildland firefighting community including:

- Fire and weather intelligence.
- Product information relative to wildland fire assessment.
- Software applications.
- Training.

The CWCG serves as an information repository to enable efficient, quick, and effective solutions to support wildfire firefighting decisions.

## STATE LEGISLATION

California has a history of collaboration with its military facilities; this section provides an overview of related legislation. Legislation can be used to ensure coordination and notification are required in the development process to reduce incompatibilities with military missions and community goals.

### Assembly Bill 1108

California Assembly Bill (AB) 1108 (Chapter 638, Statutes of 2002) amends the California Environmental Quality Act (CEQA) to require CEQA lead agencies to notify military installations when a project meets certain criteria. The purpose of AB 1108 is to ensure military notification through the CEQA process of proposed projects that could potentially impact military operations.

Assemby Bill 1108 amends CEQA to provide military agencies with early notice of proposed projects within two miles of installations or underlying training routes and special use airspace. To obtain this information, a military installation such as NAFEC, must provide local planning agencies within the critical operations areas (COA) within the installation, contact person, the relevant information such as impact areas, and boundaries of the installation's COAs. The local lead agency is required to give notice to military installations of any project within their boundaries if: (1) the project includes a general plan amendment; (2) the project is of statewide, regional, or area-wide significance; or (3) the project is required to be referred to the Advisory Land Use Committee (ALUC) or appropriately designated body. This notification will provide the military installation with an opportunity to provide early input so potential conflicts can be evaluated and addressed proactively.

### Assembly Bill 2641

The Native American Human Remains and Multiple Human Remains legislation (Chapter 863, Statutes of 2006) amends the Public Resources Code relating to burial grounds. The law authorizes the creation of a commission to prevent damage to Native American burial grounds or places of worship. The bill requires meaningful discussion between descendants of those whose remains are found and landowners so the Native American human remains are identified and considered during development activities. The commission must contact the most likely descendants in the event of notification from a county coroner upon Native American human remains discovery. Upon discovery, the landowner and Federal and State Governments must ensure that the surrounding area is not disturbed or damaged in the vicinity of the discovery location until coorindation has taken place with the descendants and their recommnedations considered. To protect sites where remains have been identified, the landowner must: record the site with the commission; use an open space or conservation zoning designation or easement; or, record a document with the county in which the property is located.

### Assembly Bill 2776

The Aviation Noise Disclosure legislation (AB 2776, Chapter 496, Statutes of 2002) amends the real estate transfer disclosure statute (California Civil Code, Division 2 – Property, Part 4 – Acquisition of Property, Title 4, Chapter 2 – Transfer of Real Property) to require sellers or lessors to disclose whether a dwelling is within an airport influence area. An airport influence area is defined as the area in which current or future airport-related noise, overflight, safety or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses. The intent of the legislation is to notify buyers of the potential noise, vibration, odor, annoyances, or other nuisances now or in the future as a result of the normal operation of an existing or proposed airport.

### Senate Bill 18

California Senate Bill (SB) 18 (Chapter 904, Statutes 2004) established the Native American Heritage Commission to prevent severe and irreparable damage to a Native American sanctified cemetery, place of worship, religious or ceremonial site, or a sacred shrine located on public property. This legislation also provides for the maintenance of a contact list that includes federally-recognized California Native American tribes or non-federally recognized California Native American tribes who have the authority to acquire and hold conservation easements.

Senate Bill 18 requires all planning agencies to refer and provide involvement opportunities for California Native American tribes on proposed actions affecting tribes. Prior to the adoption or amendment of a city or county general plan, the jurisdiction must consult with California Native American tribes to preserve specified places, features and objects.

### Senate Bill 1462

SB 1462 (Chapter 907, Statutes of 2004) expanded the requirements for local government to notify military installations of proposed development and planning activities. This statute states that:

> *"prior to action by a legislative body to adopt or substantially amend a general plan, the planning agency shall refer the proposed action to...the branches of the Armed Forces when the proposed project is located within 1,000 feet of a military installation, beneath a low-level flight path, or within Special Use Airspace (SUA)..."*

The purpose of SB 1462 is to require public agencies to provide a complete copy of a development application for any proposed development located within 1,000 feet of a military installation, SUA, or a low-level flight path. It authorizes any branch of the United States Armed Forces "to request consultation" to prevent potential conflict and to discuss "alternatives, mitigation measures, and the effects of the proposed project on military installations." Senate Bill 1462 requires military review of proposed actions that potentially impact installation operations and missions. This provides the military an opportunity to comment on proposed development and express concerns with potential impacts to the installation.

### Senate Bill 1468

Senate Bill 1468 (Chapter 971, Statutes of 2002) requires OPR to include guidance concerning the incorporation of military installation compatibility into a general plan, and how a general plan should consider the impact of civilian growth on readiness activities at military bases, installations, and training areas. The statute includes the following methods to address military compatibility in a general plan:

> *"In the land use element, consider the impact of new growth on military readiness activities carried out on military bases, installations, and operating and training areas, when proposing zoning ordinances or designating land uses covered by the general plan for land or other territory adjacent to those military facilities, or underlying designated military aviation routes and airspace.*
>
> *"In the open-space element, open-space land is defined to include areas adjacent to military installations, military training routes, and restricted airspace.*
>
> *"In the circulation element, include the general location and extent of existing and proposed military airports and ports."*

Senat Bill 1468 is part of a state policy package to promote the development of a partnership between communities and the military for collaboration on land use compatibility issues. The OPR encourages local jurisdictions near military installations, and under military training routes or restricted airspace, to incorporate the above items into their general plans.

Local governments are currently required by law to evaluate project impacts on military readiness by incorporating the SB 1468 military compatibility guidelines in their general plans to enhance military readiness.

### California Environmental Quality Act / National Environmental Policy Act

The California Environmental Quality Act (CEQA) was enacted in 1970 to protect the environment by requiring public agencies to analyze and disclose potential environmental impacts of proposed land use decisions. The CEQA is modeled after the federal National Environmental Policy Act (NEPA). The NAF El Centro JLUS is statutorily exempt from state or local environmental review per CEQA Guidelines Section 15262, Feasibility and Planning Studies.

The purpose of CEQA is to inform agency decision-makers and the public about potential environmental effects of proposed activities. Using this information, decision makers can identify methods to prevent or reduce environmental impacts by requiring the mitigation of significant environmental effects, when feasible.

### California Desert Conservation Area Plan

The California Desert Conservation Area Plan (CDCA) encompasses 25 million acres in southern California, of which 11 million acres are managed by BLM as part of the 1976 FLPMA. The CDCA planning area covers a vast area in seven counties of southern California. The CDCA planning area includes all of Imperial County and portions of Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties. The NAFEC and its ranges are situated in Imperial County, while the associated airspace for the ranges spans across the Imperial, Riverside, and San Diego Counties.

The CDCA Plan was developed to effectively manage and preserve the numerous natural ecologies found in the California Desert Area (which consists of portions of three deserts: the Mojave, the Sonoran, and the Great Basin) and the public lands associated with human and social use for the purposes of recreation and renewable energy production. Thus, the CDCA is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality that provides overall regional guidance for long-term goals for protection and use of the California desert. It contains four major land use categories to guide permitted uses, in order of most to least restrictive: controlled, limited use, moderate use, and intensive use. The CDCA Plan also includes Areas of Critical Environmental Concern (ACEC) designations to protect sensitive, cultural, and natural resources. NAFEC ranges are adjacent to or within portions of both ACECs and limited use areas.

The plan has been amended to adapt to the changing needs of the area, most recently in 2004, for the adoption of the Flat-tailed Horned Lizard Rangewide Management Strategy, 2003 Revision, An Arizona-California Conservation Strategy. This strategy provides a framework for conserving sufficient habitat to maintain self-sustaining lizard populations. According to this strategy, most military activities result in small amounts of direct habitat disturbance, which makes effects on the flat-tailed horned lizard and its habitat limited except in specific areas of concentrated activity.

## Local Jurisdiction Planning Tools

The planning tools used by the study area jurisdictions were analyzed and categorized as permanent, semi-permanent, or conditional. In California, as in many other states, cities and counties may exercise land use and development regulatory authority. Cities and counties are legally bound by statute to adopt general plans.

California Government Code also provides cities and counties with the authority to regulate the subdivision of land, including managing roads, streets, drainage, and rights-of-way. In general, land cannot be divided in California without local government approval. Dividing land for sale, lease or financing is regulated by local ordinances based on the State Subdivision Map Act (commencing with Government Code Section 66410). The local general plan, zoning, subdivision, and other ordinances govern the design of the subdivision, the size of its lots, and the types of improvements (street construction, sewer lines, drainage facilities, etc.). Applications for land divisions must be submitted to the local government for consideration in accordance with the local subdivision ordinance and the Subdivision Map Act. A public hearing must be held prior to approval of a tentative tract map. Parcel maps may also be subject to a public hearing, depending upon the requirements of the local subdivision ordinance. There are additional requirements for installation of infrastructure. Final approval and recording and specific requirements for the parcel map may vary among jurisdictions.

There are seven incorporated municipalities and numerous smaller, unincorporated communities within Imperial County. While the missions conducted at NAFEC have the potential to intermittently affect different parts of the county at any given time, this JLUS focuses on areas of Imperial County (including the unincorporated community of Seeley) and the cities of El Centro and Imperial most affected by NAFEC activities and conversely, the areas that have the most potential to pose compatibility and mission protection issues for NAFEC.

Table 4.1 provides an overview of existing planning tools by jurisdiction and their applicability to military compatibility.

**Table 4-1. City and County Planning Tools**

| Jurisdiction | Planning Tools | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | General Plan | Zoning Code Height Restrictions | Zoning Code Dark Sky | Zoning Code Sound Attenuation | Airport Land Use Compatibility Plan | Subdivision Regulations | Special / Specific Area Plans | Building Code | Annexation (Sphere of Influence) | Acquisition (For Easements) |
| Imperial County | 🟨 | 🟨 | ⬛ | 🟥 | 🟨 | 🟥 | 🟨+ | 🟨 | ⬛ | ❖ |
| City of El Centro | 🟨 | 🟨 | ⬛ | 🟨 | 🟨 | 🟥 | ❖ | 🟨 | 🟨 | ⬛ |
| City of Imperial | 🟨 | 🟨 | ⬛ | 🟨 | 🟨 | 🟥 | 🟨+ | 🟨 | 🟨 | ⬛ |

Legend:

- 🟥 = The tool exists but does not address land use issue(s) related to military compatibility.
- 🟨 = The tool exists but only partially addresses land use issue(s) related to military compatibility.
- 🟩 = The tool exists and addresses land use issue(s) related to military compatibility.
- \+ = Each Special Area plan is unique
- ⬛ = The jurisdiction does not employ this tool
- ❖ = Unknown whether the jurisdiction employs this tool

## City of El Centro

The City of El Centro has the largest population and corporate land area within the study area, and has long supported mission protection at NAFEC.

The following is a review of the existing planning tools (policies, programs, and plans) utilized by the City of El Centro along with a brief analysis identifying their ability to address land use and military compatibility, and where potential improvements can be made. The following planning tools are evaluated:

- City of El Centro General Plan
- City of El Centro Code of Ordinances – Zoning:
  - Building
  - Subdivisions
  - Noise
  - Communications Facilities.
- Airport Land Use Compatibility Plan.
- Annexation.
- Acquisition.

## GENERAL PLAN

The City of El Centro's General Plan is the policy document that guides the long range development plans of the city. It establishes goals and objectives upon which city officials base decisions regarding development. The 2004 update of the General Plan contains elements outlining land use, circulation, housing, conservation of natural resources, preservation of open space, noise, public safety, economic development, and public facilities. The guidelines outlined in the general plan are important because of their potential impacts on operations at NAFEC, which is located four miles from the city's sphere of influence (SOI).

The following items concenring military compatibility are based on a review of the general plan:

- While the general plan land use element provides goals and policies for areas adjacent to Imperial County Airport, no corresponding goals or policies exist relative to NAFEC.
- The general plan land use element recognizes the Airport Land Use Compatibility Plan, an independent document, and seeks to ensure consistency with the plan within the city and its SOI, but there is no corresponding language relative to NAFEC in the land use element.
- The general plan safety element provides policies for working with the military relative to its airports, but does not identify specific strategies other than identifying "safety problems," "implement corrective measures" and "educating the public" about potential hazards.
- The Policy Working Group Report dated 7/31/07 adopted by the city council should be incorporated into the general plan as a land use element policy.

## ZONING (CHAPTER 29, MUNICIPAL CODE) AND LIGHTING, CHAPTER 29, DIVISION 7 (MUNICIPAL CODE)

A city's zoning ordinance allows for the regulation of land use, density, height, noise, glare, and other aspects of development within its jurisdictional boundaries and can be applied to its extended SOI. These elements play a significant role in the compatibility of local development with NAFEC missions. The following compatibility concerns are based on a review of the zoning provisions:

- The definition of airport in the zoning regulations does not distinguish between civilian and military airports.
- Noise and lighting are not defined terms in the definitions.
- Building height exceptions allowed by conditional use permit in any zone.
- With a conditional permit, up to six dwelling units per acre allowable with a maximum height of 35 feet (ft) in the residential airport zone.
- Permitted heights of 45 feet to 75 feet allowable by right in the light manufacturing, manufacturing business and general manufacturing zones.
- Exceptions to height range from 12 feet above the height of a building (elevators, other equipment) to 100 feet for antennae.
- Depending on array, communications towers may be allowed up to 180 feet.
- Residential noise insulation standards rely on Title 24, part 2, California Code of Regulations instead of the residential code (part 2.5).
- There are no requirements for retro-fitting existing structures with noise attenuating materials.

- The city refers to a list of permitted uses within each zoning district rather than using performance standards.
- Outdoor lighting standards allow for a height of 45 feet.
- The plans review process does not require developers to demonstrate awareness or compliance with Section 10 of the Endangered Species Act (ESA).

## BUILDING (CHAPTER 7, MUNICIPAL CODE)

The building code regulates construction practices to maintain structural integrity and safety and can apply to compatibility with military installations, including necessary sound attenuation for residences within applicable noise zones. The City of El Centro has adopted the following elements as part of its building code:

- Part 2, 2010 California Building Code
- Part 2.5, 2010 California Residential Building Code
- Part 5, 2010 California Plumbing Code
- Part 4, 2010 California Mechanical Code
- Part 3, 2010 California Electrical Code
- Part 9, 2010 California Fire Code
- Part 6, 2010 California Energy Code
- Part 11, 2010 California Green Building Standards Code

The city has not adopted the California Division of Aeronautics' current building code requiring a 45 decibel (dB) or community noise equivalent level (CNEL) interior noise level standards to assist in noise abatement. Furthermore, the 2010 NAFEC AICUZ noise contours have not been incorporated in the city's code and are not considered to assist in abatement policies.

## SUBDIVISIONS (CHAPTER 24, MUNICIPAL CODE)

Within the city limits of El Centro, the land divisions are subject to the applicable provisions of the Subdivision Map Act and Chapter 24. The city references the Subdivision Map Act (Government Code section 66410 et seq.) as containing definitions, requirements, and procedures applicable to the subdivision of property and any reference thereto, as maybe amended by the state. This chapter implements the Subdivision Map Act and includes by reference the definitions, requirements and procedures. To the extent that the Subdivision Map Act mandates local compliance with its provisions, the Subdivision Map Act provisions prevail within the city. To the extent that such provisions are permissive or allow local discretion, the provisions of Chapter 24 prevail.

While subdivision regulations typically define the standards, procedures, and other requirements for land division, they can also help to prevent or limit future encroachment onto the installation or adjacent operational areas by specifying what types of infrastructure improvements associated with a subdivision may be or may not be allowable, such as street lights. The subdivision regulations can be used as a foundation to ensure mission sustainability, particularly in relation to dark sky provisions.

Subdivision regulations are considered semi-permanent planning tools because such regulations provide the regulatory foundation for land division only and can be amended at any time by the state or the local jurisdiction.

The following compatbility issues are based on a review of the subdivision regulations:

- Tentative Map / Final Map / Parcel Map requirements do not require the delineation of noise contours, where applicable.
- The approval process does not require notification to future property owners purchasing land in a subdivision that may be impacted by noise and vibration.
- Tentative Map / Final Map / Parcel Map of said subdivision that is located in the noise contours of the airfield does not require military review.

## NOISE (CHAPTERS 17.1 AND 29, MUNICIPAL CODE)

Chapter 17.1 was established to control noise to protect the health, safety, and welfare of residents. This section defines the standards by which noise is measured and the acceptable times, limits and frequency at which noise is acceptable. A table in this Chapter presents the one hour average sound level in decibels (dB) for single family and multiple family residential zones, commercial, civic, limited use, and manufacturing zones. The single family residential zones are allowed a noise level of 45 dB from 10pm to 7am and 50 dB from 7am to 10pm. Multiple family zones area allowed a noise level 50 dB from 10 pm to 7am and 55 dB from 7am to 10pm. Commercial and

manufacturing uses are allowed a noise level of 55 to 70 dB depending on the time of day.

Chapter 29 requires all new residential construction to comply with the noise insulation standards of Title 24, Part 2 of the California Code of Regulations (CCR). This Chapter reiterates information in Chapter 17.1, but further defines a one hour average sound level (decibels) of 45 dB only between the hours of 10 pm to 7 am and 50 dB from 7am to 10pm in residential zones. Higher levels are permitted for all other uses at all hours. This Chapter also requires retrofitting commercial and industrial uses.

Because the chapters pertaining to noise are codified ordinances, they can be amended at any time and are considered semi-permanent planning tools.

The following compatibility concerns are based on a review of the noise provisions:

- Allowable interior decibel levels exceed the 45 dB level for residential uses except during the 10pm to 7am timeframe.
- There are no provisions in these Chapters for sound attenuation methods and materials.
- There are no provisions in these Chapters for retro-fitting residential structures with sound-attenuating materials.
- The requirement for new development to incorporate sound attenuation materials applies only to residential uses.
- The 2010 NAFEC AICUZ noise contours are not recognized.

## WIRELESS COMMUNICATIONS FACILITIES (CHAPTER 29, MUNICIPAL CODE)

Chapter 29 of the zoning ordinance provides definitions for wireless communications facilities and towers. Section 29-255 states the purposes of designing and limiting communications facilities throughout the community, including to:

- Protect residential areas and other land uses from potential adverse impacts of towers and antennae.
- Encourage the location of towers and regeneration facilities in nonresidential areas.
- Minimize the number of towers throughout the community.
- Strongly encourage the joint use of new and existing tower sites.

## AIRPORT LAND USE COMPATIBILITY PLAN

The Airport Land Use Compatibility Plan (ALUCP) and the Airport Land Use Commission (ALUC) are particularly important to cities with airports and those near airports. The ALUCP is administered by Imperial County and each municipality is required by inter-local agreement to comply with its requirements. The plan was prepared in 1992 and administered by Imperial County. Discussion of the ALUCP is located under Imperial County.

The current zoning ordinance designates a residential airport zone (RAP) which permits residential uses within the extended approach/departure zones as part of the Imperial County ALUCP with densities not to exceed one dwelling unit per acre.

## ANNEXATION

Local annexation policy in California is shaped by the decisions of the Local Agency Formation Commission (LAFCo) which coordinate local boundaries to simplify government structure and organize SOIs. Under current zoning policy, all newly annexed land in the city receives a default R-1 zoning unless the planning commission recommends a different zone. This measure can potentially cause compatibility issues with residential development in less suitable areas, especially as the city considers expanding its sphere of influence west of Austin Road.

The City Council voted on a growth management policy to expand its SOI and city limits south of I-8 to McCabe Road between Austin and Forrester Roads to the west. While this expansion is not currently a compatibility issue for NAFEC, it has the potential to spur additional development north of this area if not monitored or formalized by city officials.

## City of Imperial

The City of Imperial, located three miles to the north of El Centro, encompasses approximately four square miles, including the Imperial County Airport, with a population roughly one-third that of El Centro. The following is a review of the existing planning tools (policies, programs and plans) utilized by the City of Imperial along with a brief analysis identifying their efficiency in addressing land use and military compatibility and where potential improvements can be made. The following planning tools evaluated:

- City of Imperial General Plan
- City of Imperial Zoning Code
- City of Imperial Subdivision Ordinance
- City of Imperial Building Code
- Airport Land Use Compatibility Plan
- Annexation
- Acquisition

### GENERAL PLAN

The city's general plan was most recently updated in 1992, and includes the following elements: land use, circulation, housing, conservation, open space, noise, safety, parks and recreation, public facilities, and airport. In 2008, the housing element was updated.

The following items concerning military compatibility are based upon a review of the general plan:

- The general plan contains the optional airport element which provides goals and policies for the preservation of the Imperial County Airport and restrictions for areas adjacent to it, but contains no military sustainability goals or policies for NAFEC.
- The airport element acknowledges that there will be residential uses within the airport planning area that will need sound attenuation. This should also acknowledge and apply to the residential uses within the NAFEC noise contours.
- The airport and land use elements restrict new residential development to those areas with less than a 65 dB CNEL noise exposure level and require residential structures to be noise attenuated to an interior noise level or 45 dB CNEL or below when constructed in the airport planning area. This should also apply to the aircraft noise contours from the NAFEC airfield.
- It should also be noted that in the city there are the noise contours for both the Imperial County Airport and the NAFEC airfield. The more restrictive should apply.
- The airport and land use elements encourage the county to relocate the Imperial County Airport (ICA) to an outlying area.
- Land use element policy 4. C. states that existing residential uses located in the ICA runway protection and approach zones closer than one half mile from the ends of runways will be allowed to remain.
- The general plan does not recognize the ALUCP nor does it ensure consistency with ALUCP within the city and its SOI, and there is no military compatibility language relative to the protection of NAFEC.
- The noise element relies on Section 1092 of Title 25 California Administrative Code for noise insulation standards which may be outdated.

### GENERAL PLAN AIRPORT ELEMENT

The airport element of the city's general plan outlines the following objectives with supplemental policies for mitigating compatibility issues with ICA and NAFEC located within the city's boundaries:

- Objective 1: Restrict noise sensitive land uses and uses which could be hazardous to aircraft operations by appropriate land use planning and zoning techniques.
- Objective 2: Encourage compatible commercial and industrial development on and in the immediate vicinity of the airport.
- Objective 3: Minimize exposure of the public to aircraft generated noise to the extent feasible.

- Objective 5: Preserve the area west of runway 8/26 as permanent agricultural open space.
- Objective 6: Enforce Federal Aviation Administration Part 77 requirements for height limitations of buildings and structures.

While this plan outlines policies for the Imperial County Airport, no such policies are provided for NAFEC.

*Source: Imperial City General Plan 1992 Update*

## CITY OF IMPERIAL ZONING CODE

The City of Imperial Municipal Code contains the codified zoning ordinance, divides the land within the city into fourteen districts, and provides development provisions for these districts. Lot size requirements, lot area, parking, and height regulations are provided for each district. The residential, commercial, and industrial zones all specify an allowable building height of 35 feet. The city of Imperial zoning ordinance requires compliance with State of California sound attenuation requirements for structures within the Imperial County Airport planning area. The city of Imperial does not include a stand-alone district provision or sub districts for airport or military zoning.

The following deficiencies are based on a review of the zoning provisions:

- There is no definition of airport, civilian or military, in the zoning regulations.
- Noise and lighting are not defined terms in the definitions.
- Building height variances are available in any district.
- Exceptions to height range from 12 feet above the height of a building (elevators, other equipment) to 100 feet for antennae.
- Amateur radio towers less than 60 feet are not regulated by Section IMC.26 Telecom Systems (Ord. # 646).
- Allows temporary communications towers up to 120 feet for 48 hours without a permit.
- Depending on array and bonuses, conditional use permitted communications towers may be allowed up to 300 feet.
- Residential noise insulation standards are not specified, though CNEL levels are specified for residential uses and other uses in residential districts; Commercial and Industrial noise insulation standards are not specified, though the amount of noise emitted is limited to 5 dB.
- There are no requirements for retro-fitting existing structures with noise attenuating materials.
- The city refers to a list of permitted uses within each zoning district and performance standards rather than just specifying performance standards.
- Outdoor lighting standards allow lighting up to a height of 45 feet.
- The plans review process does not require developers to demonstrate awareness or compliance with Section 10 of the ESA.

## CITY OF IMPERIAL SUBDIVISION ORDINANCE

The Subdivision Ordinance outlines the requirements for all subdivision development throughout the community including design, density, setbacks, rights-of-way, and other elements to ensure safety and consistency with other areas of the community. Within the city limits, all land divisions are subject to all applicable provisions of the Subdivision Map Act and Chapter 20, Imperial Municipal Code (IMC). The city's subdivision ordinance follows all of the requirements outlined by state law regarding its influence and limitations. The following deficiencies are based on a review of the subdivision regulations:

- The subdivision regulations refer to outdated state laws.
- Tentative Map / Final Map / Parcel Map requirements do not require the delineation of noise contours, where applicable.
- The approval process does not require notification to future property owners purchasing land in a subdivision that may be impacted by noise and vibration.

## CITY OF IMPERIAL BUILDING CODE

The City of Imperial has adopted the following building codes:

- 2010 California Administrative Code
- 2010 California Building Code
- 2010 California Residential Code
- 2010 California Electrical Code
- 2010 California Mechanical Code
- 2010 California Plumbing Code
- 2010 California Energy Code
- 2010 California Historical Code
- 2010 California Fire Code
- 2010 California Building Standards Commission Code
- 2010 California Green Building Standards Code
- 2010 California Referenced Standard Code

The following deficiencies are based on a review of the City of Imperial Building Code:

- The code does not recognize the 2010 NAFEC AICUZ noise contours.
- The current building code has not adopted the California Division of Aeronautics' 45 community noise equivalent level (CNEL) interior noise level standards to assist in noise abatement.

## NOISE

The general plan noise element (rather than the zoning regulations) contains specific indoor and outdoor noise level goals and policies for residential and other uses such as schools, libraries, churches, hospitals, nursing homes, parks, and recreation areas. These policies include 45 dB for indoor residential if 60 dB outdoor for rural and single family and 65 dB for multiple family noise cannot be attained. For the other uses identified above, the standard is 70 dB outdoor and 40 dB indoor. Policy 2. B. discusses an Airport Land Use Planning Area where new uses shall be limited to those classified as sensitive, moderately sensitive, and insensitive. The noise element recommends adoption of a noise ordinance; the city has not yet adopted one. The zoning provisions for each district discuss only the noise levels permissable from uses within the respective district. Because the element pertaining to noise is part of the general plan, it can be amended at any time and is considered a semi-permanent planning tool.

The following concerns are based on a review of the noise provisions:

- Noise standards for residential uses are found within the general plan noise element policies and to various degrees, in the zoning regulations. The interior noise level standards for commercial and industrial uses are excluded from the zoning regulations. The zoning regulations need to be consistent with the general plan.
- There are no standards for sound attenuation materials in the zoning regulations.
- There are no provisions for retro-fitting residential structures with sound-attenuating materials.
- The 2010 NAFEC AICUZ noise contours are not recognized.

## WIRELESS COMMUNICATIONS FACILITIES

Chapter 26 of the Imperial City Municipal Code delineates the city's wireless communications regulations. The ordinance states the goals of protecting the public and residential areas from unsafe or unsightly telecommunications towers while clarifying limits on tower heights and placement. The following provisons can create potential height impediments to military aircraft approaching NAFEC:

- Article II of the ordinance outlines the applicability of the ordinance and specifically states that the ordinance does not govern towers under 60 feet in height built on privately-owned property.
- Radio or television antennas which meet the height, setback, lot coverage, and other limitations of the zones in which they are erected are exempt from review by the Planning Commission.
- While Article IV does outline height requirements for towers, no reference or consideration is made to height recommendations presented in the 2010 NAFEC AICUZ and the 2014 Draft RAICUZ.

- There is no consideration for siting wirelss communication structures relative to military compatibility. Areas of concern include the military training routes and special use airspaces with a surface floor where military operations can occur at ground level. These structures could be approved without notification to NAFEC.

### ANNEXATION

The 2008 LAFCO extends the city's westernmost boundary of the SOI to Austin Road, limiting development towards NAFEC. The Draft June 2010 Impact Fee Study, indicates most annexations over the next 5-15 years will occur to the north and east of the current city limits and only as far west as Austin Road. The general plan airport element Objective 5, Policy 5 a. discourages annexation of property which is proposed for urban development west of Austin Road.

## Imperial County

Imperial County extends over 4,597 square miles, encompassing the largest land area of the three major stakeholders in the JLUS. The county's population of 175,136 people (including unincorporated communities) represents a large portion of the local population affected by NAFEC missions. The county has a long history of support for mission protection at NAFEC. In recent years, development pressure from alternative energy projects and other development interests have placed the future of NAFEC and its mission sustainment in question.

The county uses a variety of planning tools to achieve its goals for orderly development and a safe environment for its residents. The following is a review of the existing planning tools (policies, programs and plans) utilized by the county along with a brief analysis identifying their efficiency in addressing land use and military compatibility and where potential improvements can be made. The following planning tools are evaluated:

- General Plan
- Zoning
- Building Code
- Subdivision Regulations
- Noise Regulations
- Wireless Communications Facilities Regulations
- Airport Land Use Compatibility Plan
- Acquisition
- Community and Specific Plans (as appropriate to the JLUS)

### GENERAL PLAN

The most recent complete update of the Imperial County General Plan was made in 1993 with an update to the land use element in 2008. The plan contains state-mandated elements (land use, circulation, housing, conservation and open space, noise, public safety) and four optional elements (Agricultural, Geothermal/Alternative Energy and Transmission, Water, and Parks and Recreation). The plan covers the county's roughly 4,597 square miles, of which approximately 50 percent is largely undeveloped and under federal government ownership. NAFEC is located in the west-central Imperial Valley.

The following deficiencies are based on a review of the general plan:

- The goals and policies of some elements, such as housing, do not take the military presence or mission into consideration.
- The provisions for agriculture preservation within the land use element need to be strengthened.
- The development standards for the recreation/open space category for private land holdings within areas designated as Government/Special Public need to be strengthened.
- There is no policy statement related to Special Area Plan developments prohibited near military facilities.
- The Compatibility Matrix (Table-4, land use element) does not take NAFEC mission needs into account.

### ZONING (TITLE 9, LAND USE ORDINANCE)

A county's land use ordinance allows the county to regulate use, density, height, noise, glare, and other aspects of development within its jurisdictional boundaries and can apply these to its extended SOI. The Imperial County Land Use Ordinance establishes 19 different zoning categories with specific requirements for each and 11 overlay zoning areas with additional requirements. The following compatibility concerns are based on a review of the zoning regulations:

- The definition of airport in the zoning regulations does not differentiate between civilian and military airports.
- Noise and lighting are not defined terms in the definitions.
- Building height exceptions are allowed by conditional use permit in any zone.
- Allows a maximum height of 40 feet in the lower density (single and multiple-family) residential zones, 60 feet for appurtenances; 80 feet in multiple family, 60 feet for appurtenances; Ag-residential 40 feet, 60 feet for appurtenances; Ag-non-residential and communications towers 120 feet; Ag-industrial and appurtenances 100 feet; Commercial 80 feet; Industrial 80 feet; Parks and Open Space 40 feet and communication towers 100 feet; Government/Special Public Zone 80 feet and towers 100 feet. These by-right structures could penetrate floor elevations of military training routes and special use airspaces which could be approved and constructed without notification to NAFEC.
- Residential noise insulation standards rely on Title 24, Part 2.5, California Code of Regulations.
- There are no requirements for retro-fitting existing structures with noise attenuating materials.
- The county utilizes a list of permitted uses within each zoning district and performance standards.
- Outdoor lighting standards are not addressed.
- The plans review process does not require developers to demonstrate awareness or compliance with Section 10 of the ESA.

## SUBDIVISION REGULATIONS

In Imperial County, all land divisions are subject to all of the applicable provisions of the Subdivision Map Act and Title 9, Division 8, Imperial County Code. The following deficiencies are based on a review of the subdivision regulations:

- Lacks references to the “Airport Zoning Law.”
- Tentative Map / Final Map / Parcel Map requirements do not require the delineation of noise contours, where applicable.
- Tentative Map / Final Map / Parcel Map requirements do not require the delineation of safety zones or APZs.
- The approval process does not require notification to future property owners purchasing land in a subdivision that may be impacted by noise and vibration.
- Minor Subdivision (four or less lots) may be approved by the Planning Director. If each lot is 40 acres or more, does not require approval.
- Subdivisions of two lots do not require approval.

## BUILDING CODE

Government Codes 38601and 38660 provide the statutory authority to regulate the construction of buildings. Title 9, Division 10 of the Imperial County Code identifies the various codes regulating building construction within the county. The building code regulates construction practices to maintain compatibility with military installations, including necessary sound attenuation for residences within applicable noise zones.

- The County has adopted the following codes:
  - 2010 California Green Building Standards Code
  - 2010 California Building Code, Title 24, Part 2
  - 2010 California Residential Code, Title 24, Part 2.5
  - 2010 California Fire Code, Title 24, Part 9
  - 2010 California Energy Code, Title 24, Part 6
  - 2010 California Administrative Code, Title 24, Part 1
  - 2010 California Referenced Standards Code, Title 24, Part 12
  - 2007 California Elevator Safety construction Code, Title 24, Part 7
  - 2007 California Historical Building Code, Title 24, Part 8

The following deficiencies are based on a review of the building code:

- The 2010 NAFEC AICUZ and 2014 RAICUZ noise contours (not yet released) are not recognized.
- The current building code has not adopted the California Division of Aeronautics' 45 community noise equivalent level (CNEL) interior noise level standards to assist in noise abatement.

## NOISE

The Imperial County Land Use Ordinance contains an Airport Zoning Law which was adopted in 1998. This ordinance relates the development within an airport's SOI, which includes the runway protection zone, approach / departure zone, extended approach / departure zone, common traffic patterns, and other airport environs zones, to acts as an overlay for development within certain areas and those lands regulated by the Airport Land Use Commission (ALUC). Within each zone are specific noise level standards. This provision also adopts the ALUCP by reference. The ALUCP specifies the areas subject to the airport overlay requirements including noise standards. A discussion of the ALUCP is provided in a separate section below.

While noise relative to airports is not specifically addressed in the Land Use Ordinance it is addressed within the ALUCP.

## WIRELESS COMMUNICATIONS FACILITIES

Title 9 of the 2008 Zoning Ordinance follows the FAA and FCC guidelines for structural lighting, safety, height, and design standards. The following concerns are based on a review of the zoning ordinance:

- Existing towers may be modified with a 30-foot height extension which could conflict with NAFEC aircraft flight operations.
- New towers in nonresidential zones with four or more colocated users may be constructed up to 180 feet tall with the approval of a conditional use permit.

## ANNEXATION

Imperial County does not have annexation authority per state law.

## ACQUISITION

Whether Imperial County has utilized acquisition as a planning tool to further NAFEC mission sustainment is unknown.

## SEELEY COMMUNITY PLAN

The Seeley Community Plan was approved in 1994. The Seeley community is classified as an Urban Area encompassing approximately 1,520 acres. Because Seeley is located two miles south of NAF El Centro, the potential for growth is important to this study. The Seeley unincorporated urban area boundaries are:

- El Centro Street (an extension of Co Hwy S 80 / Evan Hewes Rd) on the north.
- New River on the west.
- Bennett Road on the east.
- I-8 on the south.

Urban Areas are characterized by a full level of urban services, in particular public water and sewer systems, and could contain a broad range of residential, commercial, and industrial uses. The population has grown from an estimated 1,058 in 1980 to 1,739 in 2010, according to the Seeley Urban Area Plan and the U.S. Census. When the plan was prepared in 1994, the economy of Seeley was expected to rely on agriculture, NAFEC, a state prison located five miles to the west, and recreation / tourist activities at Sunbeam Lake, located less than one mile south of Seeley. The plan requires review and conformance of new development impacting airport operations with the ALUCP and goals and objectives for reducing aviation-related hazards to and from aircraft. Noise goals and objectives include adopting standards which protect sensitive noise receptors from adverse impacts, identifying receptors within less than acceptable environments, and developing evaluation measures to improve the noise environment. The goals and objectives also advocate various ways to provide acceptable indoor and outdoor noise environments.

A variety of land use designations have been included in the plan, that if fully developed over time, would allow Seeley to incorporate.

Urban Area Plans, Community Plans, and Special Area Plans, similar to other regulatory tools, are considered semi-permanent because they can be modified. The following compatibility issues are based on a review of the Seeley Urban Plan:

- The plan allows higher densities than presently existing on developed lots.
- The plan allows medium and high density on undeveloped parcels and lots.
- By proposing certain land use designations, the plan encourages additional growth of a higher intensity than presently exists.
- There is no specific policy to reinforce the northern boundary as the maximum growth boundary of the Seeley Urban Area.
- There are no policies in the plan (other than coordination with the ALUC) that attempt to define types of commercial and industrial uses compatible with NAFEC missions.

## AIRPORT LAND USE COMPATIBILITY PLAN

The ALUCP was established pursuant to the California State Aeronautics Act (SSA) pursuant to Public Utilities Code (PUC), Section 21001 et seq with the purpose of "protect(ing) the public interest in aeronautics and aeronautical progress." The CALTRANS, Division of Aeronautics is repsonsible for administering the Act as it applies to the ALUCP. Under local authority, the Imperial County Airport Land Use Commission (ALUC) reviews and makes determinations for land uses within an airport's SOI, assures safety of air navigation, promotes air commerce, and conducts public hearings regarding any proposed development within their area of authority to protect both the economic activities of surrounding businesses and public safety and well-being.

Imperial County's ALUCP was approved in 1982 and last amended in 1996. The ALUCP serves many purposes, including: identifying the various airports in the region, including NAFEC; explaining the plan's relationship to local jurisdictions relative to their plans, policies, and procedures; outlining the geographical area of concern; identifying types of airport impacts; listing types of actions and development projects requiring review; and supporting compatibility criteria for noise, safety, airspace protection, and overflight. The plan also provides individual airport policies, aircraft accident characteristics, safety compatibility policies, noise characteristics, and compatibility policies and implementation strategies for local jurisdictions.

The ALUC's responsibilities are:

- To assist local agencies in ensuring compatible land uses in the vicinity of all new airports and in the vicinity of existing airports to the extent that the land in the vicinity of those airports is not already incompatible.
- To approve or deny proposed developments based on compatibility with airport operations, including the NAFEC airfield. If the County Board of Supervisors (BOS) desires to overrule the ALUC vote, then a 2/3 vote is required to veto an ALUC decision. The county assumes any future liability for a decision overruled by the BOS.
- To coordinate planning at the state, regional, and local levels to provide for the orderly development of air transportation, while protecting the public health, safety, and welfare.
- To prepare and adopt an Airport Land Use Plan pursuant to Section 21675.
- To review the plans, regulations, and other actions pursuant to Section 21676.
- To adopt rules and regulations consistent with SSA to carry out its responsibilities. However, the powers of the commission shall in no way be constructed to give the commission jurisdiction over the operation of any airport.

The ALUCP outlines ways that an airport impacts surrounding land uses through noise, vibration, odors, and risk of accidents. Conversely, many land uses can cause direct or indirect impacts on the way airports grow and the safety of operations. Development around an airport, particularly in the approach and departure paths, can create obstructions in the airspace traversed by an approaching or departing aircraft. Certain land uses have the potential to attract wildlife or create hazards to aircraft such as a distracting glare, smoke, steam, or invisible heat plumes.

Incompatible development near an airport can lead to a politically contentious relationship between an airport and surrounding communities, resulting in complaints and demands for restrictions on airport operations that may threaten the airport's ability to operate efficiently and serve its function in the local economy. Additionally, the difference in noise tolerance levels for different land uses, such as rural residential or industrial, can greatly affect the community response and type of noise mitigation. Local jurisdictions can employ a variety of compatibility planning tools including general plans, zoning, building codes, subdivision regulations and other tools to prevent and reduce incompatibilities with airports.

The following deficiencies are based on a review of the ALUCP:

- The ALUCP has not been updated / amended since 1996 and contains outdated information.
- The information in Appendix D relative to NAFEC may no longer be applicable since the Seeley Urban Plan was adopted.
- The ALUCP does not identify funding sources for the purpose of updating and maintaining (amending) the ALUCP.
- The ALUCP does not address whether there are airport impacts to adjacent counties.
- The ALUCP does not address airport use characteristics that may have changed since 1996.
- The ALUCP may not contain the latest airport master plans / layout plans.
- The ALUCP does not identify whether airports are part of the National Plan of Integrated Airport Systems (NPIAS).
- The ALUCP is limited in its airspace protection criteria.

It should also be noted that the 2010 NAFEC AICUZ was submitted to the County for incorporation in the ALUCP. Regarding the AICUZ, the California Government Code Sections 65302 (f)(1)(D-F) and 65302 (g)(1) reference the requirements to make the County General Plan consistent with the AICUZ and the Public Utilities Code Section 21675(b). These statutes require the ALUCP be consistent with the standards and recommendations of the 2010 AICUZ for NAFEC.

## OTHER RESOURCES

In the interest of land use compatibility between the military and the local community, the DOD Office of Economic Adjustment (OEA) and other public interest groups, such as the National Association of Counties (NACo), have prepared educational documents and videos that educate and inform the public about encroachment issues and methods that can be used to address existing or future compatibility concerns. Five resources that have been published to inform the public on land use compatibility:

### Guides

*The Practical Guide to Compatible Civilian Development near Military Installations (July 2007),* OEA
This guide offers general information on community development and civilian encroachment issues. The guide can be found at: http://www.oea.gov/.

*Joint Land Use Study Program Guidance Manual (November 2006)*
This manual provides guidance on the JLUS program, process, and efforts to support compatible development. This manual can be obtained on the OEA internet site at the following address: http://www.oea.gov/.

*Encouraging Compatible Land Use between Local Governments and Military Installations: A Best Practices Guide (April 2007),* NACo
This guidebook presents case studies of best practices between the military and communities through communication, regulatory approaches, and Joint Land Use Studies. The guide can be accessed on the NACo internet site at the following address: http://www.naco.org/.

## Videos

*The Base Next Door: Community Planning and the Joint Land Use Study Program,* OEA

This informative video discusses the issue of encroachment near military installations as urban development occurs within the vicinity. This video can be accessed on the official OEA YouTube channel at: http://www.youtube.com/watch?v=6UiyWDgLeJM

*Managing Growth, Communities Respond,* OEA

This video highlights the lessons learned from three communities (Kitsap Naval Base in Bangor, Washington; Fort Drum in Jefferson County, New York; and Fort Leonard Wood in Pulaski County, Missouri) that have successful programs for managing growth near their respective military installations. This video can be accessed on the official OEA YouTube channel at: http://www.youtube.com/watch?v=rea6d3bDp3c

# COMPATIBILITY ASSESSMENT

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

A number of factors assist in determining whether community and military plans, programs, and activities are compatible or in conflict. For this Joint Land Use Study (JLUS), 24 compatibility factors were reviewed to identify, determine, and establish a prioritized set of key study area issues. These typical compatibility factors, as illustrated below, are grouped into three broad categories: man-made factors, natural resource factors, and competition for scarce resources.

**Man-Made Factors**

1. Interagency Coordination / Communication
2. Land Use
3. Safety Zones
4. Vertical Obstruction
5. Local Housing Availability
6. Infrastructure Extensions
7. Anti-Terrorism / Force Protection
8. Noise
9. Vibration
10. Dust / Smoke / Steam
11. Light and Glare
12. Energy Development
13. Air Quality
14. Frequency Spectrum Impedance / Interference
15. Public Trespassing
16. Cultural Sites
17. Legislative Initiatives

**Natural Resource Factors**

18. Water Quality / Quantity
19. Sensitive Biological Resources
20. Marine Environments

**Competition for Scarce Resources**

21. Scarce Natural Resources
22. Land, Air, and Sea Spaces
23. Frequency Spectrum Capacity
24. Roadway Capacity

This chapter provides an assessment of the relevant compatibility factors and associated issues. This assessment of current and future incompatibilities shapes the recommended strategies presented in the JLUS Report, which are designed to address current and potential incompatible land uses.

## Methodology and Evaluation

The methodology for the Naval Air Facility (NAFEC) JLUS consisted of a comprehensive and inclusive discovery process to identify key stakeholder issues associated with the compatibility factors. At the initial Policy Group (PG) and Technical Working Group (TWG) committee workshops and public meetings, stakeholders were asked to identify the location and type of issue in conjunction with compatibility factors they thought existed today or could occur in the future. As a part of the evaluation phase, the PG, TWG, and the public examined and prioritized the extent of existing and potential future compatibility issues that could impact land within or near the study area. Other factors and associated issues were analyzed based on available information and similarity with other community JLUS experiences around the country.

The evaluation of issues directly and indirectly affects the selection and inclusion of recommended strategies in the JLUS Report. Issues were prioritized, assigned implementation strategies and execution timeframes, compiled, and distributed to the PG and TWG for concurrence. Since the PG and TWG accepted the priorities as is, the priorities will be used to determine the timeframe for initiating strategies by the primary and partner agencies.

When reviewing the assessment information in this chapter, it is important to note the following:

- This chapter provides a technical background on the factors and issues discussed based on available information. The intent is to provide an adequate context for awareness, education, and development of JLUS recommendations. It is not designed or intended to be utilized as an exhaustive technical evaluation of existing or future conditions within the study area.
- Of the 24 compatibility factors considered, three were determined to be inapplicable to this JLUS: 18, Water Quality / Quantity; 20, Marine Environments; and 23, Frequency Spectrum Capacity.
- Similar issues were consolidated into single compatibility factors. For example, the Noise and Vibration issues were consolidated into one factor since the impacts associated with each of these are typically very similar.

## 1. Interagency Coordination / Communication

*This discussion refers to the programs and plans that promote interagency coordination. Interagency communication serves the general welfare by promoting a more comprehensive planning process inclusive of all affected stakeholders. Interagency coordination also seeks to develop and include mutually beneficial policies for both communities and the military in local planning documents, such as general plans.*

### COMPATIBILITY ASSESSMENT

| | |
|---|---|
| **Issue COM-1** | **There is a lack of military representation on the Airport Land Use Commission (ALUC).** In prior years, the Navy was a voting member on the ALUC to provide input and review of development applications within the vicinity of the airports. This practice ceased approximately two years ago. |

Up until two years ago, NAFEC participated in the ALUC by voting and providing feedback about proposed projects planned within the vicinity of military facility and ranges. The US Navy leadership discontinued participation on the ALUC due to concern over conflicting interests. Although the ALUC does not include a member from the military, the ALUC does engage in communication activities with the base. These activities include a 10-day public notice in the Imperial Valley Press and postings at County buildings, prior to the meeting allowing military staff to provide input into the ALUC process. This input includes how a project may impact NAFEC's existing and future training missions, public health, safety, noise, welfare and protection of quality of life in the areas surrounding NAFEC and its ranges.

The absence of military representation on the ALUC precludes the consideration of military interests during ALUC deliberations. This poses a potential threat to military operations since proposed development may create an incompatibility with the NAFEC mission, e.g., new residential uses within the 65 decibel (dB) / Community Noise Equivalent Level (CNEL) prospective noise contour or structures posing vertical obstructions within flight tracks. Incompatibilities can directly impede military training readiness at NAFEC due to the possibility of delayed or reconfigured flight tracks from increased urban development.

### EXISTING TOOLS

#### Airport Land Use Planning Handbook

The California State Aeronautics Act (SAA), Chapter 4, Article 3.5 authorizes counties to establish an ALUC. The Act is intended to provide for the orderly development of land uses proximate to active airports and airfields within a county. The Act prescribes ALUC membership consisting of seven members as follows:

1. Two representing the cities in the county, appointed by a selection committee comprising the mayors of all the cities within that county. Any cities contiguous or adjacent to the qualifying airport shall appoint at least one city representative. If there are no cities within a county, the number of representatives selected by the county and the airport managers shall be increased by one each.
2. Two representing the county, appointed by the board of supervisors.

3. Two having expertise in aviation, appointed by a selection committee comprising the managers of all of the public airports within the county.
4. One representing the general public, appointed by the other six members of the commission.

A person having expertise in aviation is defined as an individual who by way of education, training, business, experience, vocation, or avocation has acquired and possesses the necessary knowledge of the overall role, function, and operations of airports. While this individual may be a pilot, this qualification is not required.

The Act does not indicate that military representation for Department of Defense (DOD)-owned airports is excluded from participation.

### Imperial County Airport Land Use Compatibility Plan

The State of California grants authority to communities with public airports to establish an ALUC. The purpose of the ALUC is to effectively plan for land uses around airports and airfields considering compatibility with general aviation activities. Specifically, the ALUC's charge is:

> *"…to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."*

The Imperial County ALUC is represented by two county representatives, two representatives from the cities in the county, two representatives from the airports, and one individual representing the general public. There is no exclusion of military representation on the ALUC.

*Source: Airport Land Use Compatibility Plan, Revised 1996. County of Imperial.*

While NAFEC recently discontinued formal participation in the ALUC, Imperial County Planning and Development Services (ICPDS) communicates informally about proposed developments. The county notifies NAFEC, both by email and hard copy, of proposed projects located within the vicinity of the base and its influence area per the airport land use compatibility plan (ALUCP). Other jurisdictions notify NAFEC on a discretionary basis for review and comment. Although the Navy is afforded the same review and response timeframes as other agencies, there are no memorialized formal communication procedures such as a memorandum of agreement (MOA) mandating standards and protocols for notification of projects in the area of influence, points-of-contact, or review timeframes.

It is important to note that the ALUCP is slated for update in 2014 if funding from the State Division of Aeronautics is available this fiscal year for this purpose. The update may include airspace protection criteria and future operation/missions as identified within the 2010 AICUZ, RAICUZ, F-35 EIS/EIR, 2012 El Centro Range Complex Management Plan, 2012 Draft NAF El Centro Master Plan, Existing Conditions Report, 2013 NAF El Centro Ranges, and the 2014 NAF El Centro JLUS.

| Issue COM-2 | **There is no military representation or technical support to the planning commissions of the County and cities.**<br>The Navy does not currently support local planning commissions as an ex-officio member or technical advisor. |
|---|---|

There is no official ex officio military representative on any county or city planning commissions. Although the Navy has no official member on the planning commissions, the Navy provides technical assistance to the communities as requested on a case-by-case basis. The absence of regular Navy representation at planning commission hearings precludes the Navy from addressing compatibility with proposed projects. Although NAFEC has historically never been a member of any JLUS community planning commissions, NAFEC informally receives communication about proposed developments on a case-by-case basis if the cities or county determine that a project may have a potential impact on military operations. These informal communication methods and time-sensitive development proposals can result in lost review opportunities if information does not reach the appropriate installation points-of-contact.

Conversely to informal communication methods, Imperial County does the following to notify NAFEC of development in the vicinity of the facility and the ranges:

- **Pre-Application Meetings are scheduled with written notice provided to the affected agencies (including NAF El Centro)** and adjacent landowners, and proponents, typically a half-mile radius (unless considered controversial, then a wider circulation to landowners is done). At this very initial meeting, the military staff has an opportunity to provide the proponents, their input / recommendations on the particular impacts to NAF El Centro and/or its ranges;
- **When applications are submitted, site plans, supporting studies/documents for development projects are sent to all affected agencies** and adjacent landowners for their review and comment. At this time, military staff has another opportunity to provide the County and proponents, input on the project's impacts;
- **Review by the Imperial County Airport Land Use Commission (ALUC)** for projects includes a 10-day public notice in the Imperial Valley Press and posting at County buildings, prior to the meeting allowing military staff to provide input to the ALUC on how the project impacts the NAFEC's existing/future training missions, public health, safety, noise, welfare and protection of quality of life in the areas surrounding NAF El Centro and/or its ranges;
- **Review by the Imperial County Environmental Evaluation Committee (EEC)** includes a 10-day public notice in the Imperial Valley Press and posting at County buildings, prior to the meeting, allowing military staff to provide input to the EEC on any potential impacts and environmental on the NAF El Centro and its ranges;
- **Review by the Imperial County Planning Commission** includes a 10-public notice in the Imperial Valley Press and posting at County buildings, prior to the meeting, allowing military staff to provide input to the Commission on the proposed mitigation measures to reduce impacts to NAF El Centro and its ranges; and,
- **Review by the Imperial County Board of Supervisors** (depending on the type of entitlement project) includes a 10-day public notice in the Imperial Valley Press and posting at County buildings, prior to the meeting, allowing military staff to provide input or appeal a decision made by the Planning Commission on a particular project.

Since NAFEC has a fleet support training mission where aviators from worldwide units train in air-to-ground maneuvering and bombing practice, these activities generate noise and, at times, and have other impacts on adjacent or proximate land uses. These impacts can result in nuisances if the proximate land uses are not planned with military compatibility in mind.

## EXISTING TOOLS

### California Government Code § 61500 et seq.

California Government Code § 65100 et seq. authorizes communities to establish planning commissions and departments by ordinance. The commission and department purposes are to provide for the orderly development of land uses in the best interest of the general public and the effective use and distribution of public services such as water and roadways. In addition, California Government Code states that the local legislative body shall specify the commission membership.

### Imperial County Planning Commission

Imperial County has a planning commission with two representatives appointed by the Board of Supervisors (BOS) for each of five districts. While the NAFEC installation is located in District Three and represented by the district appointee, there is no military representation as either an ex-officio member or technical support. Military review of planning projects is limited to ad-hoc informal communications with NAFEC.

### City of El Centro Planning Commission

The City of El Centro has a seven-member planning commission appointed by the Mayor. The El Centro Planning Commission does not include military representation. Like Imperial County, the city communicates with NAFEC via email on projects and planning activities occurring within the vicinity of the installation and within the noise contours of the NAFEC runway.

### City of Imperial Planning Commission

Imperial City has a planning commission of five members appointed by the Mayor. The city's Planning Commission does not include military representation, but the city's Planning Department and City Manager communicate with NAFEC via email and through the County on proposed projects within the noise contours of the NAFEC runway.

## COMPATIBILITY ASSESSMENT

| Issue COM-3 | **A comprehensive set of GIS layers for all military operation areas are not available to jurisdictions and agencies.** A comprehensive set of military profile layers in a GIS format are not available. The lack of information on the location of military operations results in decision making without the benefit of this information, potentially impacting the installation and the community. A method for routine maintenance is also needed. |
|---|---|

The communities expressed challenges with long-range planning relating to military compatibility due to the lack of a comprehensive set of geographic informational system (GIS) layers. Lacking this comprehensive data set, the communities have had difficulty assessing compatibility for proposed projects and planning activities with NAFEC military operations.

The Navy provides GIS layers to the communities as requested on a case-by-case basis, but communities do not have a formal process to maintain a comprehensive set of layers that denote the military footprint outside the fence for use in assessing military compatibility on proposed projects. Communities do not always know what layers to request to improve and enhance compatible community planning due to the nature of the NAFEC training mission. This lack of data and knowledge results in an incomplete picture of the military footprint in Imperial County for operations associated with the airfield, airspaces, and ranges.

NAFEC reported that the U.S. Navy is in the midst of updating their Range Air Installations Compatible Use Zones (RAICUZ) report. Accordingly, NAFEC is developing the GIS layers for the military ranges associated with training activities in Imperial County. These GIS layers will include the range compatibility zones and range noise contours.

*Source: Naval Air Facility Interview, 2013 February.*

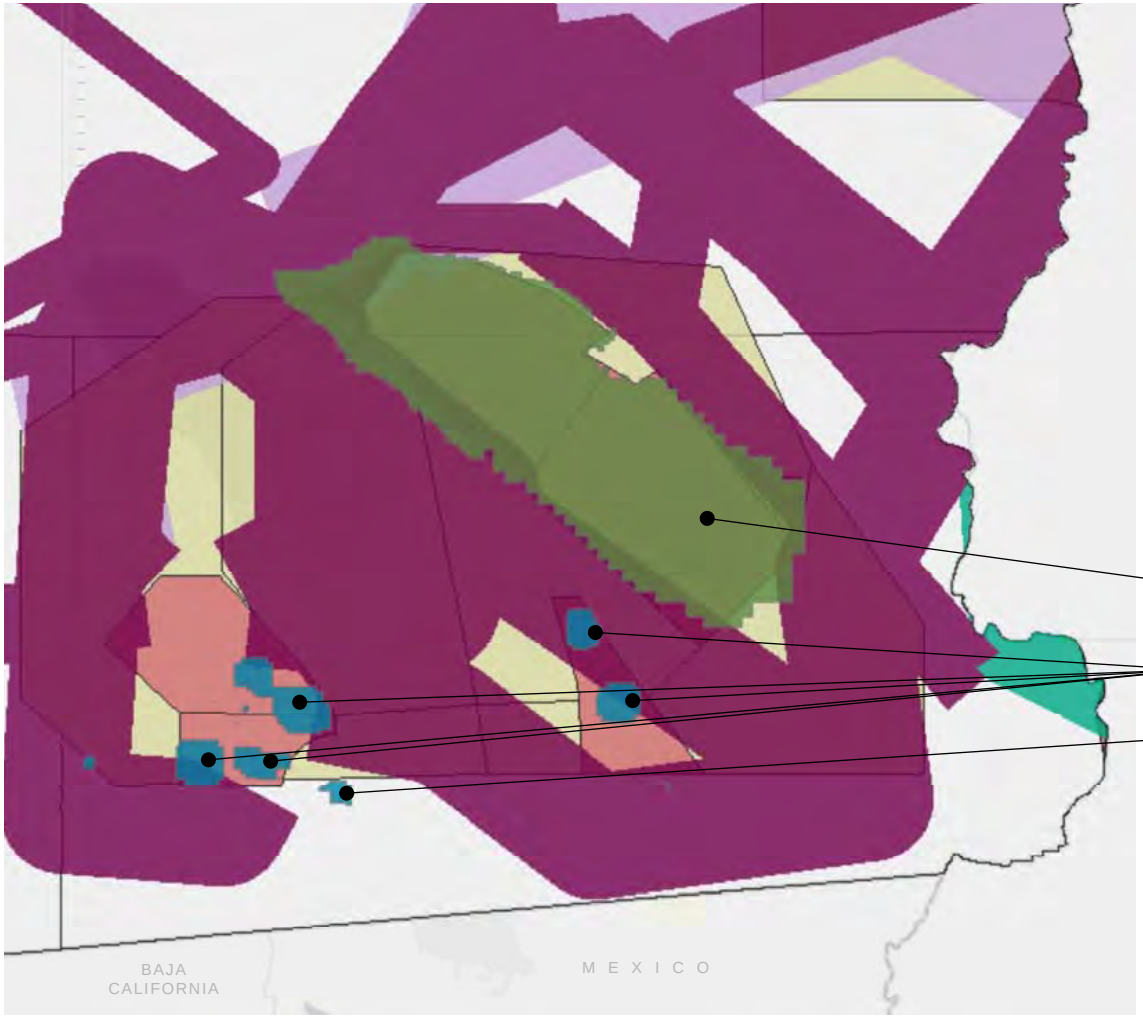
## EXISTING TOOLS

### California Military Land Use Compatibility Analyst

In the absence of official NAFEC GIS layers, the California Military Land Use Compatibility Analyst (CMLUCA) can serve as a useful mapping tool that identifies where a project is or may be located relative to military installations, use areas, or special use airspace. This enables communities to comply with state legislation (SB 1462) requiring local planning agencies to notify the military of any project that may affect military readiness.

The mapping tool illustrated in Figure 5-1 identifies essential military operating areas associated with NAFEC. This tool can be useful for developers, community planners, and land use management agencies to make a general assessment about a proposed project's compatibility with adjacent land uses, especially in the vicinity of NAFEC.

*Source: CMLUCA, 2010. http://cmluca.projects.atlas.ca.gov/*




**Legend**

**Installations Ranges**

- Navy
- Army

**MTR in California**

- IR - Instrument Route
- SR - Slow Route
- VR - Visual Route

**SUA in California**

- Military Operation Area (MOA)
- Restricted

Chocolate Mountain Gunnery Range (not part of JLUS)

NAF El Centro Ranges

NAF El Centro

0 10 20 mi

Source: CMLUCA, 2010. http://cmluca.projects.atlas.ca.gov/

**Figure 5-1**
**CMLUCA Tool: Military Operating Areas Over NAF El Centro**

*Fig_5-1_NAFEC_JLUS_CMLUCA_Tool_2013_10_29a_CML.pdf*

## COMPATIBILITY ASSESSMENT

| Issue COM-4 | **No formal procedures are established between the county, communities, and NAFEC to ensure appropriate coordination about planning matters.** There is no formal agreement delineating points of contact and protocols for communication (methods of contact, review and response timeframes, type of projects that require joint review, pre-application review, etc.) between the communities and the installation. |
|---|---|

Communities have an honor (informal unwritten) agreement with the U.S. Navy to notify them of development in the vicinity of the installation in compliance with state law. There are no general plan policies or inter-local agreements delineating points-of-contact for the base and communities for matters concerning interagency coordination and communication, i.e., proposed development applications or notification procedures in the incidence of found military equipment or unexploded ordnance (UXO).

The county has regulations for notifying property owners and individuals or stakeholders with a recorded interest of planning projects within unincorporated areas. However, the Bureau of Land Management (BLM), and not the U.S. Navy, is the owner of the NAFEC ranges as well as areas surrounding the ranges within Imperial County. The BLM and the Navy have adopted an MOA for the management of land uses located below the special use airspaces and ranges used for military training. While the BLM and the U.S. Navy formally coordinate BLM land withdrawn for military use, the county provides the Navy with both a mailed hard copy and electronic copy of development application packages that could potentially impact NAFEC military operations. The coordination between the Navy and the county is not formalized.

This becomes an issue when key positions are vacated due to voluntary leave, retirement, or replacement. When this happens and due to the lack of a continuity plan or formal interagency communication protocol, coordination of planning matters can become fragmented and ultimately result in missed opportunities for the U.S. Navy to provide critical feedback. The lack of appropriate coordination procedures could lead to encroachment adversely impacting the NAFEC mission.

## EXISTING TOOLS

### Senate Bill 1462

Senate Bill (SB) 1462 mandates local government notification to military installations of any proposed developments and planning activities if these developments and activities are located in areas where military training operations occur. The local governments are required to show compliance with the bill when a proposed development or planning activity occurs within the following areas associated with an active military installation:

- 1,000 feet of the boundary of a military installation.
- Beneath a low-level flight route.
- Within a Special Use Airspace (SUA).

While ICPDS complies with the state law by communicating via electronic mail with NAFEC in the instances of proposed projects or planning activities that occur in these areas, there is no formal communication process to ensure future compliance and tracking of notification of all planning matters that could potentially impact NAFEC and its ranges.

### Imperial County Land Use Ordinance, Title 9, Division 1, Section 90104.03

Imperial County is required by law to notify property owners on land use project decisions by the planning director, the planning commission, and the board of supervisors. For projects decided by the planning director and the planning commission, the county must advertise a one-time hearing notice in a newspaper of greatest circulation within the county at a minimum of 10 days prior to the hearing date. In addition, the county's LUO stipulates that direct mail notice must made to the applicant, all interested, recorded parties, all parties that have filed written request with the county to receive notices, all contiguous property owners of the proposed project that meet one of the following criteria:

a. *"In the R-1, R-2, R-3, R-4 Zones, all adjacent property owners whose property is within 500 feet of the exterior boundary of the subject parcel,*

b. *In the A-1, A-2, A-3, A-A, AM-1, AM-2, S-1 and S-2 Zone, all adjacent property owners whose property is within ½ mile of the exterior boundary of the subject parcel,*

c. *In all zones, except as specified in 'a' and 'b' above, all adjacent property owners whose property is within 1,000 feet of the exterior boundary of subject parcel."*

The county notifies property owners for projects decided by the Environmental Evaluation Committee (EEC). Projects reviewed by the EEC require only a one-time publication of notice of hearing in a newspaper of greatest circulation within the county a minimum of five days prior to the hearing date, and direct mail notice to the applicant and the parties that requested to be noticed in writing.

Although these regulations provide the framework for good compatibility planning, there are no formal communication protocols for early notification and notification of other planning matters such as UXO. The lack of formal communication procedures delineating points-of-contact associated with permanent positions makes it difficult for the community to promote compatible development surrounding the installation and the ranges.

| Issue COM-5 | **There is limited special disclosure statement required for properties near NAF El Centro.** The areas near NAF El Centro are subject to nuisances associated with a military airfield, such as overflight and noise. There is currently limited special requirement for disclosing this to potential purchasers, through real estate disclosure requirements, deed notifications, or other methods. |
|---|---|

Committee members and the public raised concerns about the overflight of helicopters associated with operations from Imperial County Airport and the NAFEC airfield. Low-level flights from aircraft associated with both airports cause public concern for potential accidents and noise and vibration impacts.

There is no local formal notification of aviation operations including overflight occurring within Imperial County. While the cities of El Centro and Imperial state in their general plans that the use of overflight disclosure notifications or avigation easements is encouraged, the County does not have similar policies in its general plan. This can potentially cause a nuisance issue relative to noise sensitive development proposed in areas near the installation airfield.

This is an issue for NAFEC since the installation is typically the entity notified due to the nature of the military operations. Each complaint the installation receives is tracked in a database and considered with several other variables when the DOD assesses the installations for potential realignment.

## EXISTING TOOLS

### Assembly Bill 2776

In 2002, the California State Assembly passed Bill (AB) 2776, the Aviation Noise Disclosure Legislation. The law requires sellers or lessors of real estate properties to provide notice that the property is located within an airport influence area and subject to noise, overflight, vibrations, odors, nuisances, and safety factors associated with aviation activities. This law was designed to protect real estate buyers by making them aware of these impacts. It is the local governments' responsibility to develop and enforce restrictions, regulations, and notifications to disclose to the public the impacts associated with typical aviation operations in the vicinity of airports and airfields.

Table 5-1 provides an analysis of existing policies and regulations relative to aviation / overflight easements. The City of Imperial is the only community that incorporates a policy in the Airport Element of its general plan to encourage the use of avigation easements.

**Table 5-1. Analysis of Policies and Regulations Encouraging Aviation / Overflight Easements**

| Jurisdiction | General Plan (GP) Policies | Zoning Ordinance | Consistent with ALUCP Policies |
|---|---|---|---|
| County of Imperial | Noise Element: Objective 1.4 Coordinate with airport operators to ensure operations are in conformance with approved Airport Land Use Environs.<br>No goals or objectives about aviation or overflight easements. | No regulations about avigation or overflight easements. | GP is consistent through Noise Element – Airport Environs – no specific policies exist;<br>Zoning is inconsistent |
| City of El Centro | Land Use Element: Incorporates the ALUCP Land Use Compatibility Criteria (which by default encourages the dedication of aviation / overflight easements for conditions of development). | Easements in the zoning code refer to public utility easements, rights-of-way.<br>No regulations about avigation or overflight easements. | GP is consistent through Land Use Element – no specific policies exist;<br>Zoning is inconsistent |
| City of Imperial | Airport Element: Policy 1 E. Require avigation easements to be granted whenever residential projects are constructed within the airport planning area. | No regulations about avigation or overflight easements. | GP consistent through Airport Element – specific policies exist;<br>Zoning is inconsistent |

*Source: County of Imperial GP, Cities of El Centro and Imperial GP, and County of Imperial Land Use Ordinance and Cities of El Centro and Imperial Zoning Ordinances.*

The City of El Centro generally encourages compliance with AB 2776 by incorporating the Airport Land Use Compatibility criteria from the Airport Land Use Compatibility Plan (ALUCP) into its general plan. However, there are no specific policies that encourage the use of avigation easements to disclose airport influence areas and protect the navigable airspace.

While Imperial County encourages compliance with AB 2776 by acknowledging the ALUCP and requiring consistency with ALUCP, there are no specific policies in its general plan to encourage the use of avigation easements in the selling or renting of property located within an airport influence area of the Imperial County Airport or the NAFEC airfield.

| Issue COM-6 | **There is a lack of public information available on military operations and associated compatibility issues.** Information on military operation areas, including areas subject to low overflight and range operations, is not readily available in a form that is suitable for public use. |
|---|---|

In addition to providing military mission footprint GIS layers to the communities if requested, NAFEC has developed 2010 AICUZ informational brochures available to the public only upon request. These information brochures depict noise contours and accident potential zones (APZs) that fall outside the base. The military footprint outside the base comprises more than noise contours and APZs found in the informational brochure. Many people are unaware that the AICUZ informational brochures are available and there is a lack of knowledge of the different components that comprise the military footprint outside the fence.

### NAF El Centro Encroachment Action Plan

The U.S. Navy uses encroachment action plans (EAP) to help identify military influence areas where community development could be incompatible with the military mission. Informational brochures are developed into a user-friendly pamphlet or executive summary that is used for general guidance in land use planning to mitigate community impacts on the installation.

NAFEC has developed an EAP information brochure available via the internet by typing "NAF El Centro Encroachment Action Plan" into an internet search engine. Unless the public is aware that the Navy develops an EAP they would not know to look for it or request it.

The lack of readily accessible informational publications in an easy-to-read format makes it difficult for the community to understand the entire NAFEC mission and actively engage in community planning that supports the long-term viability of the mission.

| Issue COM-7 | **Rotary-wing noise and low-level helicopter flights associated with Imperial County Airport cause public concerns and complaints.** Public information is needed to clarify that helicopters using the Imperial County Airport are not associated with NAF El Centro. Information on the appropriate points of contact should be part of public outreach / educational efforts. |
|---|---|

Overflights from helicopter refueling and transient aircraft are misinterpreted as originating from NAFEC. The County of Imperial has a contract with an aircraft fuel supplier to permit transiting pilots to refuel their aircraft, e.g. helicopters at the Imperial County Airport. Pilots transiting from San Diego, CA, to Yuma, AZ, and other areas coordinate with the air traffic control tower at Imperial County Airport to refuel their aircraft during late evening hours such as 11 pm and later.

This issue was identified due to a lack of information about the origins of aircraft associated with refueling operations and the noise the aircraft generated during refueling. Pilots of these aircraft do not shut the aircraft engines off during refueling creating noise and public disturbance. The noise generated by these aircraft in the late evening hours can impact sleep patterns and performance for school-aged children as well as working adults.

| Issue COM-8 | **There is no formal coordination between the Navy and local, state, federal agencies.** There is currently no formal communication with agencies such as local school districts, BLM, State Lands, irrigation districts, etc. |
|---|---|

There are approximately 10 agencies with land management authority within the NAFEC JLUS Study Area, as shown in Chapter 2, Figure 2-3 Land Ownership in the NAFEC JLUS Study Area. There are challenges associated with agency responsibilities and some possible overlap in responsibilities, e.g. where does one agency's authority stop and another agency's start? With multiple land management agencies and similar roles, land use planning and decisions can be delayed and lengthy due to coordination with several agencies. This can impede to military mission readiness, e.g.

delaying training operations and lost training hours. There is no formal document that delineates the coordination protocol for each agency within the Study Area other than resource management plans.

The county and cities do not have an Intergovernmental Coordination Element since it is not a required General Plan element pursuant to state requirements. California state law requires seven main elements in a general plan:

- Circulation
- Conservation
- Housing
- Land Use
- Noise
- Open Space
- Safety

*Source: California Government Code Section 65302, 2004. Chapter III The Required Elements of the General Plan.*

Despite the lack of formal intergovernmental coordination within the Imperial County General Plan, the county acknowledges the need for coordination between agencies. The policies outlined in Chapter 4, Existing Compatibility Tools, address intergovernmental coordination on a tertiary level.

## 2. Land Use

*The basis of land use planning and regulation relates to the government's role in protecting the public's health, safety, and welfare. Local jurisdictions' general plans and zoning ordinances can be the most effective tools for preventing or resolving land use compatibility issues. These tools ensure the separation of land uses that differ significantly in character. Land use separation also applies to properties where the use of one property may adversely impact the use of another. For instance, industrial uses are often separated from residential uses to avoid impacts from noise, odors, lighting.*

Land use planning around military installations is similar to the process for evaluating other types of land uses. For instance, local jurisdictions consider compatibility factors such as noise when locating residential developments near commercial or industrial uses. As the land between local municipalities is developed – or the land between a local municipality and the perimeter of a military installation is developed, both entities are affected. New residents, tenants, or building owners are typically not fully aware of the implications of locating in close proximity to an active military installation and / or training area.

### COMPATIBILITY ASSESSMENT

| Issue LU-1 | **There is no formal agreement that restricts development West of Austin Road.** Imperial County and the cities of El Centro and Imperial have a "gentleman's agreement" to limit development to the west of Austin Road. |
|---|---|

While the community general plans for the Cities of El Centro and Imperial delineate their spheres of influence ending at Austin Road and Imperial County encouraging development to remain within the confines of the urban corridor along State Routes 86 and 111, there are no inter-local agreements between the cities, county, and NAFEC promoting Austin Road as the western boundary for future development.

The county's general plan allows for specific area plans to be located beyond the urban corridor and within unincorporated Imperial County provided the specific area plan includes adequate and effective provision of water and infrastructure or at least, provides an effective alternative to enable public services to be extended to the proposed development. This feature of the Imperial County General Plan can unintentionally encourage development west of Austin Road within unincorporated Imperial County that is potentially incompatible with the NAFEC noise contours and associated training ranges.

Much of the concern related to development shifting west of Austin Road was due to some existing or proposed development plans located in the vicinity of NAFEC and the availability of land between the installation and Austin Road. The majority of land around NAFEC is agricultural or open space and intended to preserve the agriculture industry. However, the preservation of agricultural lands has a value-added benefit for the county since it preserves the airspace and ranges associated with military training operations. The land between NAFEC and Austin Road is subject to impacts from aviation operations performed in the military operating areas

(MOAs), both special use (SUAs) and restricted airspaces (RAs), and military training routes (MTRs). This means that military training operations occur in these areas and land uses should incorporate appropriate measures to secure the sustainability of these important national defense assets. If the current agricultural and open space land uses are rezoned for development, then the rezoning action can result in conditional use permits and possible additional rezoning applications. The new zoning could potentially allow incompatible development under these important military training areas. Community actions could potentially result in incompatible development that adversely impacts the viability of the NAFEC training ranges.

Current general plans (GPs) and zoning ordinances of affected jurisdictions provide some measure of protection for the installation, but due to the provisions of the documents, communities and developers may develop in the JLUS study area, posing a risk for incompatibility. Table 5-2 provides a summary of the existing tools to minimize development west of Austin Road. These tools either partially address compatibility or could be improved to be consistent with local planning documents and to formalize the Austin Road boundary.

*Source: County of Imperial General Plan, Revised 2008; City of El Centro General Plan, 2004; and City of Imperial General Plan.*

**Table 5-2. Analysis of Existing Tools to Mitigate Potential Development West of Austin Road**

| Jurisdiction | Existing Tools | Ability to Mitigate Development West of Austin Road |
|---|---|---|
| County of Imperial | GP Land Use Element:<br>Delineates the urban areas for the cities of El Centro and Imperial stating the cities are bound on the west by Austin Road.<br>The Seeley Urban area is bound on the west by the New River, the north by El Centro Street, the east by Bennett Road, and the south by Interstate 8. | Good tool with exceptions.<br>Areas for Improvement: "Development proposed outside of a designate urban area shall either require an amendment to an existing Urban area or be designated as a new specific area plan meeting full urban area improvement standards."<br>Specific area plans allow for control over land uses and development in the absence of traditional zoning and defined Urban areas. They also serve as GP amendments once adopted. Specific area plan criteria for approval does not specifically address impacts on nearby military training operations.<br>Glamis Specific Plan: Does not consider impacts on military training ranges and operations, i.e. trespassing. |
| | Zoning Ordinance:<br>§ 90201.01 Zoning Boundaries and § 90201.02 Zoning Maps identify the boundaries for each Urban area, unincorporated area, and specific area plans using the roadways and street names as boundaries. Where any uncertainty exists, the determination is made by Imperial County Planning and Development Services. | Good tool with exceptions.<br>Areas for Improvement:<br>The ordinance does not require or recommend review of proposed development projects considered west of Austin Road. The ordinance does not require a compatibility review of the development against the military training assets and operations in the area. |
| City of El Centro | GP Land Use Element:<br>Encourages the balance and compatibility of land uses with existing and future land uses, but the Land Use Element does not specifically outline the planning area for which the land use element covers. | Fair tool with exceptions.<br>Area for Improvement:<br>The city does not include specific boundaries for the Land Use Element to include the western boundary of Austin Road as described in the County's GP for the City's Urban area. |
| | Zoning Ordinance:<br>§ 29-1 and § 29-2. Chapter Purpose, Scope, and Applicability sections discuss the adoption of the official zoning map and the applicability to lands within the city identified on the zoning map. | Fair tool with exceptions.<br>Area for Improvement:<br>While this tool outlines the western boundary of the City of El Centro on the official zoning map; the western boundary is not codified in the zoning ordinance. |
| City of Imperial<br>(Land Use Element Update in progress) | Land Use Element:<br>The Land Use Element identifies the Local Agency Formation Commission (LAFCO) Sphere of Influence (SOI) as future growth boundaries; however, there is no delineation of specific boundaries of the SOI in the element. The only reference made to SOI boundaries is graphically represented on a map excluded from this GP Element. | Fair tool with exceptions.<br>Area for Improvement:<br>The SOI is not defined for the city in the Land Use Element nor is it graphically represented on the GP map. |
| | Zoning Ordinance:<br>§ 24.01 General Provisions identifies the boundaries for the zoning ordinance as the components that comprise the "official zoning map." The zoning map does indicate the city limit is Austin Road on the map. | Good tool with exceptions.<br>The zoning map does not include an "official" or an "adopted date" to indicate it is the official zoning map that coincides with § 24.01 in the regulations. |

*Source: County of Imperial General Plan, 2008. Land Use Element. County of Imperial, Land Use Ordinance, 2008. General Provisions and Zoning Areas; City of El Centro General Plan, 2004. Land Use Element. City of El Centro Zoning Ordinance, adopted 1989; amended 2007; City of Imperial General Plan. Land Use Element; City of Imperial Zoning Ordinance. General Provision*

| Issue LU-2 | **Potential for incompatible development occurring in the areas surrounding NAF El Centro installation and ranges.** There is no formal guidance or information on compatibility planning in current general plan documents to adequately protect the installation from encroachment. Concern includes the area west of Austin Road, and the Bennett Road and Ross Road areas. |
|---|---|

While the county and the cities of El Centro and Imperial have an honor agreement to restrict development west of Austin Road, there is no formal guidance in their general plans. The lack of guidance causes concern due to the lack of land use controls west of Austin Road and within unincorporated Imperial County near the installation and the ranges.

## Imperial County General Plan

The Imperial County general plan allows for existing land uses to be modified through the preparation of a specific plan area. The specific plan area must be in compliance with all aspects of the general plan, but the result of the specific area plan must also provide an economic benefit to the County and the region.

> *"Development proposed outside of a designate Urban area shall either require an amendment to an existing Urban area or be designated as a new Specific Plan Area meeting full Urban area improvement standards.*
>
> *Specific Plans should be utilized where existing conventional zoning regulations do not provide adequate controls over land use and development. Upon adoption, the Specific Plan serves as an amendment to the County General Plan for a very defined and detailed area."*

This policy allows for land uses to occur under these vital military operating areas and training routes without consideration of impacts on the military mission associated with NAFEC and its ranges.

Table 5-3 identifies the land use categories and associated development standards. The table provides a brief assessment of compatible and potentially incompatible land use categories based on densities and heights. This has been assessed for the land use categories found within the NAFEC JLUS Study Area and located within the prospective noise contours.

**Table 5-3. Imperial County General Plan Land Use Category Analysis**

| Land Use Category | Land Use Standards | Compatibility Assessment |
|---|---|---|
| Agriculture | Residential standards: 1 dwelling unit (du) / 40 acres (ac)<br>Height Standards: 50 feet (ft) | Compatible with conditions |
| Community Area | Residential standards:<br>Up to 4 du / ac<br>Height standards:<br>50 ft for commercial | Compatible with conditions |
| Government | None specified | Compatible with conditions |
| Open Space / Recreation / Preservation | Residential standards: 1 du / 20 ac or 1 du / ac and Specific Area Plan may grant greater densities for lands that cover 160 acres or more<br>Height standards: 35 ft | Compatible with conditions |
| Special | None specified | Compatible with conditions |
| Specific | None specified | Compatible with conditions |
| Urban | Residential standards:<br>1 du / ac up to 29 du / ac;<br>Height standards: 35 ft – residential; 75 ft – commercial | Compatible with conditions |

The following general plan land use categories could create potential adverse impacts for the military training operations conducted at NAFEC due to the land use standards delineated in the general plan:

- Government
- Open Space / Recreational
- Special
- Specific
- Urban

Since the government land use category does not specify intensity or height standards, it provides inadequate land use guidance. This lack of specificity could result in an incompatible development should a government facility locate within the 65 dB / CNEL or greater noise contours without sound attenuated construction.

For the Open Space / Recreation / Preservation land use category, there is potential incompatibility for Specific Plans regardless of acreage due to the types of activities occurring within these land uses. For example, if the Specific Plan proposes stadium lighting without specifying a shielded fixture, then this type of feature supportive of recreational activities could potentially impact night vision training at NAFEC depending on the proposed location. Activities on these land uses would also be incompatible based on the large concentrations of people attracted during events.

By contrast, the general plan includes standard provisions for land use categories that safeguard against potential incompatibilities and preserve the viability of the NAFEC mission:

- Agriculture Standards: Land shall not be subdivided for residential development.
- Open Space / Recreation / Preservation Standards: Agricultural uses are prohibited on all areas administered by the BLM and the US Fish and Wildlife Service (USFWS), and on in-holdings in Areas of Critical Environmental Concern (ACEC).
- Specific Area Plan Standards: Future development within the vicinity of the Holtville Airport shall not preclude the long-term viability of the airstrip to be developed as a regional airport.

*Source: Imperial County General Plan, 2008. Land Use Element.*

Current agricultural and rural residential land uses are located approximately two miles south of the NAFEC located near Bennett and Ross Roads in Imperial County. These uses are compatible with the current NAFEC mission. If the mission at NAFEC changes to allow increased training exercises using different types of aircraft, potential future land uses similar to the rural residential could be incompatible with the new missions. This incompatibility would result from noise exposure and aircraft accident potential associated with the approach and departure zones of the NAFEC airfield.

There is concern over future development expanding south of Ross Road. Current land uses are incompatible with noise associated with the NAFEC mission. Mobile homes are located in the unincorporated community of Seeley and a recreational vehicle (RV) resort located within the 65 dB/CNEL and 70 dB/CNEL noise contours of the NAFEC airfield. To partially address this issue, the Imperial County General Plan Noise Element includes policies to mitigate noise impacts for existing and future land uses in the vicinity of county airports:

**Goal 1.** Provide an acceptable noise environment for existing and future residents in Imperial County.

**Objective 1.1.** Adopt noise standards which protect sensitive noise receptors from adverse impact.
**Objective 1.2.** Ensure that noise standards and policies are compatible with the standards and policies of other General Plan Elements and other County agencies.
**Objective 1.5.** Identify sensitive receptors with noise environments which are less than acceptable, and evaluate measures to improve the noise environment.

**Goal 2.** Review proposed projects for noise impacts and require design which will provide acceptable indoor and outdoor noise environments.

**Objective 2.1** Adopt criteria delineating projects which should be analyzed for noise impact to sensitive receptors.

**Objective 2.3** Work with project proponents to utilize site planning, architectural design, construction, and noise barriers to reduce noise impacts as projects are proposed.

**Goal 3.** Provide for environmental noise analysis inclusion in long range planning activities which affect the County.

**Objective 3.1** Adopt procedures for the preparation of Specific Plans which include the requirement for a noise impact analysis.

The Imperial County General Plan Noise Element also delineates acceptable and unacceptable land uses associated with aviation operations and airfields. Table 8 of the Imperial County General Plan Noise Element delineates these acceptable land uses based on the noise contours defined by DOD AICUZ report. Table 5-4 classifies land use types based on noise assessment and criteria.

**Table 5-4. Noise Compatibility Criteria for Assessing Potential Developments in the Vicinity of NAFEC Airfield**

| Noise Compatibility Land Use Assessment and Criteria | | | | | |
|---|---|---|---|---|---|
| | CNEL, dBA | | | | |
| **Land Use Category** | **50-55** | **55-60** | **60-65** | **65-70** | **70-75** |
| **Residential** | | | | | |
| Single family, nursing homes, mobile homes | + | o | - | -- | -- |
| Multi family, apartments, condominiums | ++ | + | o | -- | -- |
| **Public** | | | | | |
| Schools, libraries, hospitals | + | o | - | -- | -- |
| Churches, auditoriums, concert halls | + | o | o | - | -- |
| Transportation, parking, cemeteries | ++ | ++ | ++ | + | o |
| **Commercial and Industrial** | | | | | |
| Offices, retail trade | ++ | + | o | o | - |
| Service commercial, wholesale trade, warehousing, light industrial | ++ | ++ | + | o | o |
| General manufacturing, utilities, extractive industry | ++ | ++ | ++ | + | + |
| **Agricultural and Recreational** | | | | | |
| Cropland | ++ | ++ | ++ | ++ | + |
| Livestock breeding | ++ | + | o | o | - |
| Parks, playgrounds, zoos | ++ | + | + | o | - |
| Golf courses, riding stables, water recreation | ++ | ++ | + | o | o |
| Outdoor spectator sports | ++ | ++ | + | o | o |
| Amphitheaters | + | o | - | -- | -- |

Legend:
++ Clearly Acceptable
The activities associated with the specified land use can be carried out with essentially no interference from the noise exposure.

| | |
|---|---|
| + Normally Acceptable | Noise is a factor to be considered in that slight interference with outdoor activities may occur. Conventional construction methods will eliminate most noise intrusions upon indoor activities. |
| o Marginally Acceptable | The indicated noise exposure will cause moderate interference with outdoor activities and with indoor activities when windows are open. The land use is acceptable on the conditions that outdoor activities are minimal and construction features which provide sufficient noise attenuation are used (e.g., |
| - Normally Unacceptable | Noise will create substantial interference with both outdoor and indoor activities. Noise intrusion upon indoor activities can be mitigated by requiring special noise insulation construction. Land uses which have conventionally constructed structures and/or involve outdoor activities which would be disrupted by |
| -- Clearly Unacceptable | Unacceptable noise intrusion upon land use activities will occur. Adequate structural noise insulation is not practical under most circumstances. The indicated land use should be avoided unless strong overriding factors prevail and it should be prohibited if outdoor activities are involved. |

*Source: Imperial County General Plan, Noise Element, 2008.*

Mobile and manufactured homes are development types with construction materials that cannot adequately mitigate for noise impacts to an interior level of 45 dB. The Department of Housing and Urban Development discourages such uses in locations where interior noise will be greater than 45 dB.

| Issue LU-3 | **Imperial County Conditional Use Permit regulations allow for land uses incompatible with NAF El Centro and its associated ranges and airspace**. The list of land uses allowed by conditional use permit includes sensitive land uses that are inappropriate in all areas surrounding NAF El Centro. |
|---|---|

There are three types of conditional use permits that Imperial County utilizes to allow for land uses that are not permitted by right within the county's zone districts. Conditional use permits are discretionary and may be approved, approved with conditions, or denied by the decision making bod. The conditional use permits are:

- Minor Conditional Use Permit (CUP-1)
- Intermediate Conditional Use Permit (CUP-2)
- Major Conditional Use Permit (CUP-3)

The intermediate and major CUPs present a greater concern than the minor CUP due to the uses allowed by the permits. Noise sensitive uses and uses that encourage higher densities and tall structures are allowed in Imperial County with a CUP. This can result in encroachment if military compatibility is not considered during the permitting process. The intent of CUPs is to allow uses requiring special consideration and to add economic benefit to the community. Increased economic benefit to Imperial County is beneficial for both the county and the military but must be done in a compatible manner to ensure the sustainability of the NAFEC mission.

## EXISTING TOOLS

### Imperial County Land Use Ordinance

The Imperial County LUO permits uses requiring special consideration in certain zones. The CUP is a mechanism to permit these uses within the unincorporated county based on economic benefit. Table 5-5 identifies the project valuation and allowable uses under a CUP. The table provides a brief compatibility assessment of CUPs based on allowable uses and relative compatibility with the NAFEC training mission.

**Table 5-5. Imperial County Conditional Use Permit Regulations and Compatibility Assessment**

| Permit | Value of Project | Allowable Uses | Compatibility |
|---|---|---|---|
| CUP-1 | < $100,000 | Second dwelling (one additional unit); Domestic water well (less than 1.5 acre feet/year); Commercial water well (less than five ac ft /year); Pre-school < 20 children; Day care facility < 20 children (under the age of 6 years); Limited care facility < 5 users; Home occupations; Facilities for the abused < 5 users; Temporary Real Estate, construction and other offices; and Temporary special events. | Yes – if noise sensitive uses are avoided in noise contours. Low density may be acceptable but site plans should not locate noise sensitive uses in noise contours |
| CUP-2 | $100,001 < $1,000,000 | Churches; Educational Institutions (except preschools under the CUP-1); Hospitals, sanitariums and rest homes, including limited care facilities > 5; people; Facilities for the abused > 5 users; and Non-profit service organizational facilities | Feasible – if noise sensitive uses and higher densities are avoided in noise contours. Tall structures should be avoided in the vicinity of training routes and the airfield. |
| CUP-3 | > $1,000,000 | Any uses that do not fit within the parameters of CUP-1 or CUP-2. | Feasible – if noise sensitive land uses and higher densities are avoided in noise contours. Tall structures should be avoided in the vicinity of training routes and the airfield. |

*Source: Imperial County Land Use Ordinance, Title 9, Division 2 (Amended October 2006). Conditional Use Permit Regulations.*

The CUP-2 and CUP-3 permits could allow incompatible development depending on specific land uses, the heights associated with those uses, proposed densities, and most importantly, the location. Noise sensitive land uses such as residential development in higher densities, churches, and schools can be subjected to noise, vibration, and safety concerns if located within the vicinity of training ranges. Heights of structures such as cell towers and energy development facilities like wind energy conversion facilities exceeding heights of 200 feet can be incompatible with the NAFEC training mission. Towers exceeding 200 feet pose a threat to the safety of pilots who train at low-levels. The low-level flight training activities need unobstructed, navigable airspace to perform and complete flight operations. This is important for pilots required to complete a certain number of hours in training.

## City of El Centro City Code

In addition to county CUPs, the cities of El Centro and Imperial also regulate land uses through condition use permits. The City of El Centro allows for some land uses to be permitted by CUP that could otherwise interfere with the NAFEC mission. Table 5-6 identifies the permitted land uses that may be approved by CUP in the City of El Centro. The table also assesses these uses against the AICUZ recommendations for compatibility associated with the noise contours and accident potential zones of the NAFEC airfield.

**Table 5-6. City of El Centro Conditional Use Permit Regulations and Compatibility Assessment for Noise and Accident Zones**

| Project Value | Allowable Uses | Compatibility Assessment for Noise Zones | Compatibility Assessment for Accident Zones |
|---|---|---|---|
| No minimum; No maximum | Airports and heliport | Compatible with restrictions – Land uses where public gathers occur, noise level reduction (NLR) 25, 30, 35 should be achieved | Compatible with restrictions – Terminals and above ground transmission lines not allowed in APZ I |
| | Cemeteries, columbaria, crematories, and mausoleums | Compatible with restrictions – Land uses where public gathers occur, NLR 25 dB, 30, 35 should be achieved | Compatible with restrictions: Chapels are incompatible in APZs I and II |
| | Hospitals and sanitariums | Compatible with restrictions – Land uses where public gathers occur, NLR 25 dB, 30, 35 should be achieved | Incompatible |
| | Public utility structures and installations | Compatible with restrictions – Land uses where public gathers occur, NLR 25 dB, 30, 35 should be achieved | Compatible with restrictions – Terminals and above ground transmission lines not allowed in APZ I |
| | Radio or television transmitters | Compatible with restrictions – Land uses where public gathers occur, NLR 25 dB, 30, 35 should be achieved | Compatible with restrictions – Terminals and above ground transmission lines not allowed in APZ I |
| | Temporary establishments or enterprises in excess of 10 calendar days, involving large assemblages of people or automobiles, including circuses, open air theaters (excluding drive-in theaters), tent revivals and race tracks | Compatible with restrictions – Land uses where public gathers occur, NLR 25 dB, 30, 35 should be achieved | Incompatible |
| | Buildings or structures with heights than permitted by the zone | Compatible with restrictions – Heights should be assessed based on possible impacts that may be experienced from nearby military operations. | Incompatible in CZs; Compatible with restrictions in APZs I and II |
| | A density bonus pursuant to article IV, division 4, of this chapter of the El Centro zoning ordinance | Incompatible in noise zones of 65 CNEL and greater | Incompatible 1-2 du/ac is maximum density and sound attenuation must be integrated into construction materials |
| | Mobile home parks | Incompatible in noise zones of 65 CNEL and greater; Compatible with restrictions in 55-64 CNEL noise zones – If determined by community this development must occur in this location, then interior noise levels for mobile homes and RV parks should be attenuated to reduce noise by 5dB when located in areas with CNEL of 55 – 64 according to AICUZ guidance. | Incompatible |
| | Planned unit developments | Compatible with restrictions – Land uses where public gathers occur, NLR 25 dB, 30, 35 should be achieved | Incompatible in CZs; Compatible with restrictions in APZs I and II |
| | Recreational vehicle parks | Incompatible in noise zones of 65 CNEL and greater | Incompatible |

| Project Value | Allowable Uses | Compatibility Assessment for Noise Zones | Compatibility Assessment for Accident Zones |
|---|---|---|---|
| | Clustered single family development within the residential airport (RAP) zone may achieve the maximum density in the R1 zone so long as the average density within the portion(s) of the site designated "extended approach / departure zone" does not exceed one du per net ac. | Compatible with restrictions – Land uses where public gathers occur, NLR 25 dB, 30, 35 should be achieved | Incompatible 1-2 du/ac is maximum density and sound attenuation must be integrated into construction materials |

*Source: City of El Centro Conditional Use Permit Regulations, Division 6 § 29-319; NAF El Centro AICUZ, December 2010.*

The City of El Centro allows uses by the approval of CUP incompatible with aviation operations in the airfield noise contours and safety zones per recommendation of the AICUZ.

### City of Imperial City Code

The City of Imperial issues conditional use permits, but does not delineate specific land uses. The lack of specific, allowable uses permitted by a CUP can potentially conflict with the NAFEC mission if the use is located within airfield noise contours.

| Issue LU-4 | **Concern regarding the potential for incompatible land uses around NAFEC ranges and under associated airspace.** Development of facilities or approval of use permits to allow certain types of land uses in certain locations can represent a potential encroachment for the NAF El Centro training mission due to safety concerns. |
|---|---|

## COMPATIBILITY ASSESSMENT

The majority of land in Imperial County is managed by various federal and state agencies. Additionally, private lands in Imperial County make up about 30 percent of the land. These land ownership patterns not only provide a unique setting for the NAF El Centro mission by enabling year-round capabilities for training, but they also can present some challenges associated with balancing military training and operations with community activities and development due to the current permitted uses of the land as designated by ownership and general plans and zoning regulations.

Table 5-7 identifies the zone districts within the RCZs that are permitted by right or conditional use permit that could be potentially incompatible with the NAFEC mission.

**Table 5-7. Zone Districts within the RCZs**

| County Zone District | Land Uses Permitted by Right or CUP that could Potentially be Incompatible | Compatibility Assessment |
|---|---|---|
| Agricultural, General (A-2)<br>Agricultural, General Rural Zone (A-2-R) | ■ Strictly prohibited unless approved by CUP are: livestock feed lots; hog ranches, dairies, animal sales yards, cotton gins, dehydration units, labor camps, packing plants and other similar intense uses.<br>■ Aquaculture to allow for the growing and harvesting of algae, fish, frogs, shrimp and similar aquatic products. This includes shipping but does not include processing.<br>■ Fish farms and frog farms (no processing)<br>■ Mineral exploration<br>■ Oil, gas and geothermal exploration<br>■ The growing and harvesting of all types of crops including but not limited to the following: Berry crops, Bush crops, Field crops, Fish farms and Frog Farms, Flowers and horticultural Specialties, Green house, Nursery, Nut and fruit trees, Timber, Vegetables, Vine crops<br>■ Wildlife Preserve<br>■ Wind driven electrical generator for on-site consumption of electricity<br>■ Airports or aircraft landing fields Airport for private non-commercial use and agricultural air applicators<br>■ Circus or carnival, Country Club, or other amusement facilities<br>■ City, County, State, and Federal enterprises, including buildings, facilities and uses of departments or institutions thereof which are necessary or advantages to the general welfare of the community<br>■ Communication Towers: including radio, television, cellular, digital, along with the necessary support equipment such as receivers, transmitters, antennas, satellite dishes, relays, etc. (subject to requirements of this zone and Division 24; Section 92401 “Communications Facilities Ordinance” et al).<br>■ Equestrian establishments, stables and riding academies<br>■ Farm equipment rental agencies<br>■ Geothermal test facilities, Intermediate projects, and major exploratory wells<br>■ Gun club<br>■ Heliports<br>■ Hunting and fishing clubs<br>■ Major Geothermal projects overlay zone<br>■ Mining and Mineral Extraction<br>■ Racetrack or Test track including automobile, bicycle, horse or motorcycle,<br>■ Resource extraction and energy development<br>■ Trade Fairs and Exhibits (temporary, less than 10 days) | Conditional due to heights allowed and safety hazard for public |

| County Zone District | Land Uses Permitted by Right or CUP that could Potentially be Incompatible | Compatibility Assessment |
|---|---|---|
| Agricultural, Heavy (A-3) | ■ The breeding and raising of animals including, bee keeping, cattle or livestock grazing, birds, dairy stock, fish and frogs, hogs, horse, donkeys, mules, poultry, rabbits, and sheep.<br>■ The growing and harvesting of all agricultural crops, including berry crops, bush crops, field crops (both dry and irrigated), flowers, and horticultural specialties, greenhouse, nursery, nut, timber, vegetable and vine.<br>■ Agricultural animal products processing including, meat packing, canning and shipping, provided the livestock is produced or grown by the owner of the process facility on the premise or on land, leased, rented or owned by the owner of the processing facility. This section does not allow for slaughterhouses, rendering plants or tanning operations or any similar animal or agricultural waste or by product processing.<br>■ Agricultural related trucking facility (hauling primarily agricultural products)<br>■ Airports or aircraft landing fields for private non-commercial use and agricultural air applicators<br>■ Animal slaughter and/or meat packing facilities<br>■ Bio-mass energy conversion plant<br>■ City, County, State and Federal enterprises, including buildings, facilities and uses of departments or institutions thereof which are necessary or advantageous to the general welfare of the community<br>■ Communication Towers: including radio, television, cellular, digital, along with the necessary support equipment such as receivers, transmitters, antennas, satellite dishes, relays, etc. (subject to requirements of this zone and Division 24; Section 92401 “Communications Facilities Ordinance” et al)<br>■ Equestrian establishments, stables and riding academies<br>■ Explosive material storage and handling<br>■ Government office or public buildings<br>■ Guest ranches<br>■ Heliport<br>■ Major facilities relating to the generation and transmission of electrical energy, provided such facilities are not, under state or federal law, to be approved exclusively by an agency or agencies of the state and/or federal governments and provided that such facilities shall be approved subsequent to coordination and review with the Imperial Irrigation District for electrical matters.<br>■ Major geothermal projects in overlay zones<br>■ Meat and fish packing plants<br>■ Mining and mineral extraction or rock, gravel, sand and crushing processing | |

| County Zone District | Land Uses Permitted by Right or CUP that could Potentially be Incompatible | Compatibility Assessment |
|---|---|---|
| Recreation / Open Space (S-1) | ■ Accessory Structure including cargo container (provided they have an approved building permit and are subordinate to a primary building/use)<br>■ Crop and tree farming (not allowed in the Ocotillo/No mirage Community Area Plan – ONCAP)<br>■ Directional signs not to exceed six square feet in area but not including commercial advertising<br>■ Duck clubs (not allowed in ONCAP)<br>■ Fish farms (not allowed in ONCAP)<br>■ Forest industries<br>■ Grazing<br>■ Gun clubs<br>■ Harvesting of any wild crop<br>■ Hotels and motels<br>■ Marinas, boat liveries and boat launching ramps<br>■ Mobile home/RV Park provided 50% of the total use is for RV use<br>■ Residence (one per legal parcel)<br>■ RV park Airports<br>■ Churches and other places used exclusively for religious worship<br>■ City, county, state and federal enterprises including buildings and facilities<br>■ Communication Towers<br>■ Day-care or nursery school<br>■ Establishments or enterprises involving large assemblages of people or automobiles including amusement parks, circuses, carnivals, expositions, fairs, open air theatres, race tracks, recreational and sport centers<br>■ Major facilities relating to the generation and transmission of electrical energy provides such facilities are not under State or Federal law, to approved exclusively by an agency, or agencies of the State or Federal government, and provided such facilities shall be approved subsequent to coordination review of the Imperial Irrigation District for electrical matters. Such uses shall include but be limited to the following:<br>■ Electrical generation plants (less than 50 mw)<br>■ Facilities for the transmission of electrical energy (100-200 kV)<br>■ Electrical substations in an electrical transmission system (500 kv/230 kv/161 kV)<br>■ Oil, gas & geothermal exploration<br>■ Planned unit development<br>■ Surface mining operations | Conditional due to heights allowed and safety hazard for public |

A number of uses identified above become incompatible with low-level flight operations due to the concentrations of people that some land uses attract and / or because of the heights of uses. While the county's LUO permits a maximum of 35 feet for a majority of the uses in this zone, communication towers are permitted to 100 feet. This height could be a potential incompatibility with the NAFEC mission and a safety hazard to the public.

The BLM typically allows for natural resource exploration and mining on public lands and discourages residential and commercial uses unless it is in the best interest of the public. Residential and commercial uses authorized by BLM are lower in density and intensity, making them compatible uses with NAFEC training areas. However, the mining and renewable resource activities authorized by BLM can potentially create adverse impacts to the military mission due to heights associated with associated equipment and activities and construction materials used in renewable energy development.

## EXISTING TOOLS

### OPNAV Instruction 3550.1A Range Air Installations Compatible Use Zones Program

The OPNAV Instruction 3550.1A provides recommendations for compatible land uses associated with military training range activity and range compatible use zones (RCZs). These recommendations considered the military operations that occur on military training ranges and their potential impact on safety relative to land uses. These instructions also prescribe land uses that are incompatible for various reasons including types of land uses, heights of land uses, and densities and intensities of certain land uses.

The RCZ I is the area where the weapon impacts the target. Similarly to an airfield clear zone (CZ), development of any type is discouraged from this area as this is the area most susceptible to significant impacts from military target and bombing practice.

The RCZ II is the area of armed overflight where the weapon has been activated and is in the air over the target at a prescribed distance. While the majority of land uses are not recommended for this area, golf courses, riding stables, water recreation, and cemeteries are generally compatible provided they do not attract large groups of people. Agricultural uses such as livestock, farming, animal breeding and other uses such as mining and fishing are also generally compatible in this area, except in the instance where they attract large congregations of people. Other considerations for agricultural land uses in the RCZ II area include labor intensity and structural coverage. Generally, land uses that encourage large congregations of people are incompatible in the RCZ II area. The RAICUZ guidelines recommend no development within 500 feet on either side of the centerline of the activated overflight area. Recreational uses and wilderness areas are generally compatible in this area, except as they relate to tall structures or when the military training mission requires low-level flight operations. Low-level flight operations are defined as anything less than 500 feet.

The RCZ III is defined as the maneuvering area combined with the restricted airspace associated with military training. Various land uses are generally compatible with military operations in this area; however, there are exceptions associated with certain land uses, such as single-family residential. Single-family residential is generally acceptable in RCZ III with a recommended density of no more than two dwelling units per acre. Other exceptions for this area include height limits for commercial, retail, industrial / manufacturing uses relative to low-level military flight operations. As previously mentioned, land uses are incompatible in RCZ III when heights interfere with military training operations including heights less than 500 feet. Table 5-8 identifies the land uses recommended by the Navy Instruction 3550.1A as compatible and incompatible for the three RCZs including a justification of why certain land uses are incompatible.

**Table 5-8. RAICUZ Recommended Compatible Land Uses for the RCZs**

| Land Use | RCZ I | RCZ II | RCZ III |
|---|---|---|---|
| Single-Family Residential, Duplex, Mobile Homes | N | N | Y[3] |
| Multi-Family Residential | N | N | N |
| Transient Lodging | N | N | N |
| School Classrooms, Libraries, Churches | N | N | N |
| Hospitals | N | N | N |
| Nursing Home | N | N | N |
| Auditoriums, Concert Halls | N | N | N |
| Office Buildings - Personal, Business, Professional | N | N | Y[2] |
| Commercial, Retail | N | N | Y[2] |
| Manufacturing | N | N | Y[2] |
| Utilities | N | N | Y |
| Playgrounds, Neighborhood Parks | N | N | Y[2] |
| Golf Courses, Riding Stables, Water Recreation, Cemeteries | N | Y[4] | Y[2] |
| Outdoor Spectator Sports | N | N | Y[2] |
| Industrial, Warehouse, Supplies | N | N | Y |
| Livestock, Farming, Animal Breeding | N | Y[1] | Y[2] |
| Agricultural (Except Livestock), Mining, Fishing | N | Y[1] | Y |
| Recreational, Wilderness Areas | N | Y[2] | Y[2] |

1. RCZ-II is an area of armed overflight. Land uses that have the potential to attract congregations of people are not compatible. For scored targets, no development within 500 feet on either side of the run-in line centerline. For tactical targets, further analysis is required. Factors to be considered: labor intensity, structural coverage.

2. Incompatible when the training mission requires low-altitude overflight (less than 500 feet).

3. Suggested maximum density in RCZ-III is no more than 1-2 dwelling units per acre.

4. Clubhouses, chapels and other facilities where people congregate are not compatible in RCZ-III.

*Source: OPNAVINST 3550.1A, Range Air Installation Compatible Use Zone Program, 2008.*

## Air Installations Compatible Use Zones for NAF El Centro

The RCZs are similar to the accident potential zones (APZs) of the NAFEC airfield. The DOD has recommended land uses compatible in areas adjacent and proximate to the airfield. Conversely, the 2010 NAFEC AICUZ identifies incompatible land uses adjacent and proximate the airfield. Table 5-9 identifies these land uses that are compatible and incompatible for the APZs near the NAFEC airfield including the recommended density or intensity. Per the 2010 NAFEC AICUZ study, recreational land uses that attract large groups of people are not recommended for the CZ and APZ I. While there is an exception for land uses such as nature exhibits, recreational activities including golf courses, riding stables, and water recreation, parks, and other entertainment facilities, these uses should be low intensity where congregations of people would not typically gather. The CZ and APZ is statistically where aircraft accidents are more likely to occur due to lower speeds and altitudes. Land uses that attract large congregations of people should be discouraged in these areas near the NAFEC airfield.

Although APZ II is less restrictive since it is further away from the ends of the runway, recreational uses are still considered incompatible if the facility attracts large groups of people. The primary concern regarding recreational land uses in APZs and RCZs is safety for the general public should an aircraft accident occur in these areas.

**Table 5-9.** **AICUZ Recommended Land Use for Accident Potential Zones**

| SLUCM No. | Land Use Name | Recommended Land Uses in Clear Zone | Recommended Land Uses in APZ I | Recommended Land Uses in APZ II | Recommended Density |
|---|---|---|---|---|---|
| *10* | *Residential* | | | | |
| 11 | Household units | | | | |
| 11.11 | Single units: detached | N | N | Y[2] | Max. density of 1-2 du/ac |
| 11.12 | Single units: semidetached | N | N | N | |
| 11.13 | Single units: attached row | N | N | N | |
| 11.21 | Two units: side-by-side | N | N | N | |
| 11.22 | Two units: one above the other | N | N | N | |
| 11.31 | Apartments: walk-up | N | N | N | |
| 11.32 | Apartments: elevator | N | N | N | |
| 12 | Group quarters | N | N | N | |
| 13 | Residential hotels | N | N | N | |
| 14 | Mobile home parks or courts | N | N | N | |
| 15 | Transient lodgings | N | N | N | |
| 16 | Other residential | N | N | N | |
| *20* | *Manufacturing*[3] | | | | |
| 21 | Food and kindred products; manufacturing | N | N | Y | Max. FAR of 0.56 APZ II |
| 22 | Textile mill products; manufacturing | N | N | Y | Same as above |
| 23 | Apparel and other finished products; products made from fabrics, leather, and similar materials; manufacturing | N | N | N | |
| 24 | Lumber and wood products (except furniture); manufacturing | N | Y | Y | Max. FAR of 0.28 APZ I; 0.56 APZ II |
| 25 | Furniture and fixtures; manufacturing | N | Y | Y | Same as above |
| 26 | Paper and allied products; manufacturing | N | Y | Y | Same as above |
| 27 | Printing, publishing, and allied industries | N | Y | Y | Same as above |

| SLUCM No. | Land Use Name | Recommended Land Uses in Clear Zone | Recommended Land Uses in APZ I | Recommended Land Uses in APZ II | Recommended Density |
|---|---|---|---|---|---|
| 28 | Chemicals and allied products; manufacturing | N | N | N | |
| 29 | Petroleum refining and related industries | N | N | N | |
| *30* | *Manufacturing[3] (continued)* | | | | |
| 31 | Rubber and misc. plastic products; manufacturing | N | N | N | |
| 32 | Stone, clay, and glass products; manufacturing | N | N | Y | Max. FAR 0.56 APZ II |
| 33 | Primary metal products; manufacturing | N | N | Y | Same as above |
| 34 | Fabricated metal products; manufacturing | N | N | Y | Same as above |
| 35 | Professional scientific, and controlling instruments; photographic and optical goods; watches and clocks | N | N | N | |
| 39 | Miscellaneous manufacturing | N | Y | Y | Max. FAR of 0.28 APZ I; 0.56 APZ II |
| *40* | *Transportation, communication, & utilities[4,5]* | | | | |
| 41 | Railroad, rapid rail transit, and street railway transportation | N | Y[5] | Y | Same as above |
| 42 | Motor vehicle transportation | N | Y[5] | Y | Same as above |
| 43 | Aircraft transportation | N | Y[5] | Y | Same as above |
| 44 | Marine craft transportation | N | Y[5] | Y | Same as above |
| 45 | Highway and stree right-of-way | N | Y[5] | Y | Same as above |
| 46 | Auto parking | N | Y[5] | Y | Same as above |
| 47 | Communication | N | Y[5] | Y | Same as above |
| 48 | Utilities | N | Y[5] | Y | Same as above |

| SLUCM No. | Land Use Name | Recommended Land Uses in Clear Zone | Recommended Land Uses in APZ I | Recommended Land Uses in APZ II | Recommended Density |
|---|---|---|---|---|---|
| 485 | Solid waste disposal (landfills, incineration, etc.) | N | N | N | |
| 49 | Other transport, communication, and utilities | N | Y[5] | Y | See Note 5 below |
| *50* | *Trade* | | | | |
| 51 | Wholesale trade | N | Y | Y | Max. FAR of 0.28 APZ I; 0.56 APZ II |
| 52 | Retail trade-building materials, hardware and farm equipment | N | Y | Y | See Note 6 Below |
| 53 | Retail trade[7] - shopping centers | N | N | Y | Max. FAR of 0.16 APZ II |
| 54 | Retail trade - food | N | N | Y | Max. FAR of 0.24 APZ II |
| 55 | Retail trade - automotive, marine craft, aircraft and accessories | N | Y | Y | Max. FAR of 0.14 APZ I; 0.28 APZ II |
| 56 | Retail trade - apparel and accessories | N | N | Y | Max. FAR of 0.28 APZ II |
| 57 | Retail trade - furniture, home furnishings and equipment | N | N | Y | Same as above |
| 58 | Retail trade - eating and drinking establishments | N | N | N | |
| 59 | Other retail trade | N | N | Y | Max. FAR of 0.16 APZ II |
| *60* | *Services*[6] | | | | |
| 61 | Finance, insurance, and real estate services | N | N | Y | Max. FAR of 0.22 for "General Office / Office Park" APZ II |
| 62 | Personal services | N | N | Y | Office use only. Max. FAR of 0.22 APZ II |
| 62.4 | Cemeteries | N | Y[9] | Y[9] | |
| 63 | Business services (credit reporting; mail, stenographic, reproduction; advertising) | N | N | Y | Max. FAR of 0.22 APZ II |

| SLUCM No. | Land Use Name | Recommended Land Uses in Clear Zone | Recommended Land Uses in APZ I | Recommended Land Uses in APZ II | Recommended Density |
|---|---|---|---|---|---|
| 63.7 | Warehousing and storage services | N | Y | Y | Max. FAR of 1.0 APZ I; 2.0 APZ II |
| 64 | Repair services | N | Y | Y | Max. FAR of 0.11 APZ I; 0.22 APZ II |
| 65 | Professional services | N | N | Y | Max. FAR of 0.22 APZ II |
| 65.1 | Hospitals, nursing homes | N | N | N | |
| 65.1 | Other medical facilities | N | N | N | |
| 66 | Contract construction services | N | Y | Y | Max. FAR of 0.11 APZ I; 0.22 APZ II |
| 67 | Government services | N | N | Y | Max. FAR of 0.24 APZ II |
| 68 | Educational services | N | N | N | |
| 69 | Miscellaneous | N | N | Y | Max. FAR of 0.22 APZ II |
| *70* | *Cultural, entertainment, and recreational* | | | | |
| 71 | Cultural activities | N | N | N | |
| 71.2 | Nature exhibits | N | Y[10] | Y[10] | |
| 72 | Public assembly | N | N | N | |
| 72.1 | Auditoriums, concert halls | N | N | N | |
| 72.11 | Outdoor music shells, amphitheaters | N | N | N | |
| 72.2 | Outdoor sports arenas, spectator sports | N | N | N | |
| 73 | Amusements - fairgrounds, mini-golf, driving ranges; amusement parks | N | N | Y | |
| 74 | Recreational activities (including golf courses, riding stables, water recreation) | N | Y[10] | Y[10] | Max. FAR of 0.11 APZ I; 0.22 APZ II |
| 75 | Resorts and group camps | N | N | N | |
| 76 | Parks | N | Y[10] | Y[10] | Same as 74 |

| SLUCM No. | Land Use Name | Recommended Land Uses in Clear Zone | Recommended Land Uses in APZ I | Recommended Land Uses in APZ II | Recommended Density |
|---|---|---|---|---|---|
| 79 | Other cultural, entertainment, & recreation facilities | N | Y[9] | Y[9] | Same as 74 |
| *80* | *Resource production and extraction* | | | | |
| 81 | Agriculture (except livestock) | Y[4] | Y[11] | Y[11] | |
| 81.5, 81.7 | Livestock farming and breeding | N | Y[11,12] | Y[11,12] | |
| 82 | Agriculture-related activities | N | Y[11] | Y[11] | Max. FAR of 0.28 APZ I; 0.56 APZ II - no activity that produces smoke, glare, or involves explosives |
| 83 | Forestry activities[13] | N | Y | Y | Same as above |
| 84 | Fishing activities[14] | N[14] | Y | Y | Same as above |
| 85 | Mining activities | N | Y | Y | Same as above |
| 89 | Other resource production or extraction | N | Y | Y | Same as above |
| *90* | *Other* | | | | |
| 91 | Undeveloped land | Y | Y | Y | |
| 93 | Water areas | N[15] | N[15] | N[15] | |

*Source: NAF El Centro AICUZ, 2010.*

**1.** A "Yes" or a "No" designation for compatible land use is to be used only for general comparison. Within each, uses exist where further evaluation may be needed in each category as to whether it is clearly compatible, normally compatible, or not compatible due to the variation of densities of people and structures. In order to assist installations and local governments, general suggestions as to FARs are provided as a guide to density in some categories. In general, land use restrictions that limit commercial, services, or industrial buildings or structure occupants to 25 per acre in APZ I and 50 per acre in APZ II are the range of occupancy levels considered to be low density. Outside events should normally be limited to assemblies of not more that 25 people per acre in APZ I and not more than 50 people per acre in APZ II.

**2.** The suggested maximum density for detached single-family housing is one to two Du/Ac. In a planned unit development (PUD) of singlefamily detached units where clustered housing development results in large open areas, this density could possibly be increased provided the amount of surface area covered by structures does not exceed 20 percent of the PUD total area. PUD encourages clustered development that leaves large open areas.

| SLUCM No. | Land Use Name | Recommended Land Uses in Clear Zone | Recommended Land Uses in APZ I | Recommended Land Uses in APZ II | Recommended Density |
|---|---|---|---|---|---|

**3.** Other factors to be considered: labor intensity, structural coverage, explosive characteristics, air pollution, electronic interference with aircraft, height of structures, and potential glare to pilots.

**4.** No structures (except airfield lighting), buildings, or aboveground utility/ communications lines should normally be located in Clear Zone areas on or off the installation. The Clear Zone is subject to severe restrictions. See UFC 3-260-01 "Airfield and Heliport Planning and Design" dated 10 November 2001 for specific design details.

**5.** No passenger terminals and no major aboveground transmission lines in APZ I.

**6.** Within SLUCM code 52, Max FARs for lumber yards (SLCUM code 521) are .20 in APZ – I and 0.40 in APZ – II. For hardware/paint and farming equipment stores, SLUCM Code 525, the Max FARs are 0.12 in APZ I and 0.24 in APZ II.

**7.** A shopping center is an integrated group of commercial establishments that is planned, developed, owned, or managed as a unit. Shopping center types include Strip, Neighborhood, Community, Regional, and Super Regional facilities anchored by small businesses, supermarket or drug store, discount retailer, department store, or several department stores, respectively. Included in this category are such uses as Big Box Discount Clubs, Home Improvement Superstores, Office Supply Superstores, and Electronics Superstores. The maximum recommended FAR for SLUCM 53 should be applied to the gross leasable area of the shopping center rather than attempting to use other recommended FARs listed in Table 3 under Retail or Trade.

**8.** Low-intensity office uses only. Accessory uses such as meeting places and auditoriums are not recommended.

**9.** No chapels are allowed within APZ I or APZ II.

**10.** Facilities must be low intensity, and provide no tot lots, etc. Facilities such as clubhouses, meeting places, auditoriums, and large classrooms are not recommended.

**11.** Includes livestock grazing but excludes feedlots and intensive animal husbandry. Activities that attract concentrations of birds, creating a hazard to aircraft operations, should be excluded.

**12.** Includes feedlots and intensive animal husbandry.

**13.** Lumber and timber products removed due to establishment, expansion, or maintenance of Clear Zones will be disposed of in accordance with appropriate DOD Natural Resources Instructions.

**14.** Controlled hunting and fishing may be permitted for the purpose of wildlife management.

**15.** Naturally occurring water features (e.g., rivers, lakes, streams, wetlands) are compatible.

| Issue LU-5 | **Mobile homes within noise contours.** Mobile homes are considered sensitive land uses due to occupancy type and construction materials used in their manufacture. These dwelling units cannot adequately mitigate noise through sound attenuation. |
|---|---|

The community of Seeley is located within an unincorporated part of Imperial County managed by the urban area plan within the county general plan. Seeley is situated within the 65 dB/CNEL and the 70 dB/CNEL noise contours modeled for the NAFEC airfield.

The land use compatibility recommendations provided in the 2010 NAFEC AICUZ report indicates that mobile home parks and transient lodgings, i.e. recreational vehicles, should not be permitted in these noise zones. In addition, the Department of Housing and Urban Development (HUD) stipulates that noise mitigation measures are inadequate for these dwelling units due to the types of construction materials used in their manufacture.

## EXISTING TOOLS

### Seeley Urban Area Plan

The Seeley Urban Area Plan allows for mobile homes in the area where noise levels from aircraft operations reach 65 dB / CNEL and 70 dB / CNEL. Based on the 2010 AICUZ report and the HUD standards, mobile homes are not a compatible use near an active airfield. The Seeley Plan reports that additional mobile home housing is likely to occur in this community:

> *"Lots which are currently vacant are likely to be sold and single family dwelling units (conventional/manufactured housing) are likely to continue to be built."*

The Seeley Urban Area Plan sets goals and objectives for housing in this community. While the housing goals and objectives for the Seeley community comply with overall sustainable community planning for housing; it does not consider the compatibility of nearby military training operations and associated aviation exercises. The goal and objectives that guide the housing development for the Seeley community are:

**Goal 1.** Promote the inclusion of energy conservation features in new and existing housing as required.

**Objective 1.1** Work towards ensuring that the quality, safety, and viability of the housing stock in the Seeley Urban Area is continually maintained or upgraded, and that dilapidated housing which cannot be improved is appropriately and where necessary replaced.
**Objective 1.2** Upgrade affordable low and moderate income housing to meet the needs of these residents who cannot afford safe housing through the improvement of existing housing units by bringing them up to code as found necessary.
**Objective 1.3** Encourage existing and projected housing needs of all income levels are met.

| Issue LU-6 | **Avigation Easements.** Avigation easements are encouraged by the City of Imperial, but not by other jurisdictions in the area. This should be reviewed for applicability in the Study Area. |
|---|---|

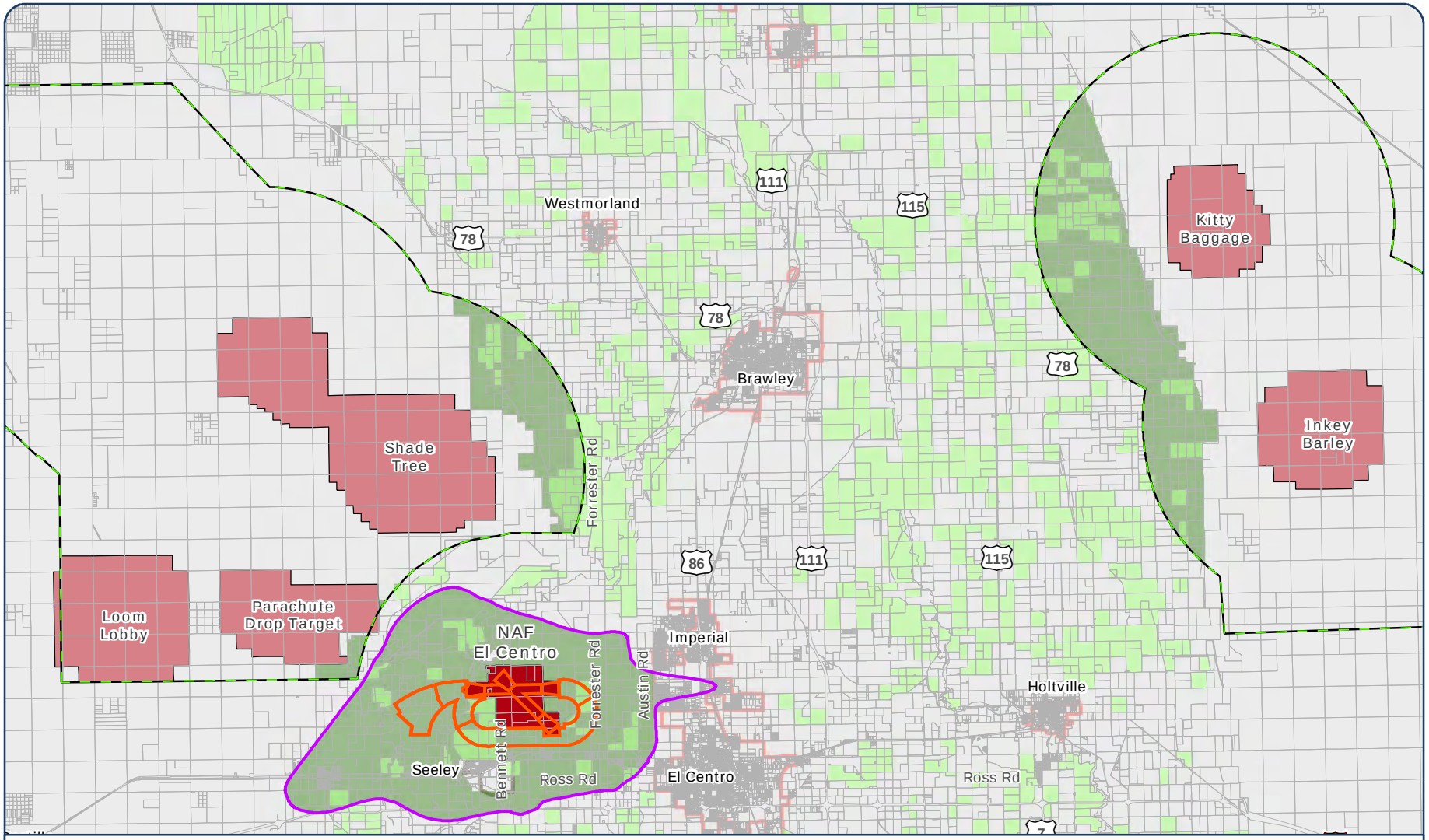
This issue is addressed under Interagency Coordination / Communication COM-5 which provides an analysis of community policy and regulations that encourage or need improvement regarding the use of avigation easements.

| Issue LU-7 | **Decommissioning of Agricultural Lands.** Land that is decommissioned due to removal, transfer or other loss of water rights increases its potential to be reused for urbanized uses, which could create an incompatibility depending on location. |
|---|---|

Imperial County became the first county in the State of California to vote down the renewal of the state's law that preserves its primary industry, agriculture. This decision was made based on the reduction of subvention monies from the state in recent years, and ultimately a complete elimination of these subsidies to the county. Without subsidies to local governments, it is difficult for the county to provide continued adequate public services to these areas.

Decommissioning agricultural lands in the area around NAFEC can create future incompatibilities due to potential for intensified development. As illustrated in Figure 5-2, there are multiple parcels of land near NAFEC proper and within NAFEC training ranges that were decommissioned from agriculture preserve lands in January 2011. These lands still remain in preserve until the non-renewal contracts expire after a period of nine years from the effective date of the BOS decision to rescind the Williamson Act.

After the nine-year non-renewal period, though the agricultural restriction is no longer enforceable, the land remains zoned for agriculture. The land may be developed after an effective rezoning on a property-by-property basis per the procedures applicable to other agriculturally-zoned property. While there is no immediate urgency with the decommissioning of this agricultural land, property owners will have the right to develop their land and recover property taxes without any additional enforceable agricultural restrictions. Although agriculturally-zoned lands are typically compatible with military operations, caution must be exercised since some crops and agricultural activities are incompatible with aviation operations such as those conducted at NAFEC airfield. Activities and attractants that entice birds and wildlife and the generation of dust or other impacts may make it difficult for a pilot to visibly discern the runway and other features needed to perform various approach and departure operations.




Source: Imperial County, 2013.

*Fig_5-2_NAFEC_JLUS_Williamson_Act_20140217_JKC.pdf*

**Figure 5-2**
**Williamson Act Non-Renewal Lands**

| Issue LU-8 | **Disposal of BLM lands.** Disposal of BLM lands near ranges could open these areas to private development that may be incompatible with the range operations. |
|---|---|

The BLM administers over 1.2 million acres of land in Imperial County, some of which is vacant / undeveloped parcels located adjacent to the NAFEC military training ranges. The BLM has the authority to dispose of land if the land creates management inefficiencies per the Federal Land Policy and Management Act, Section 102 as described below.

### Federal Land Policy and Management Act, Section 102

Pursuant to Federal Land Policy and Management Act (FLPMA), Section 102 Congress declared that public lands remain within federal ownership unless it is determined by policy and planning procedure prescribed in the law that it is in the nation's best interest to dispose of the land.

If the disposal, acquisition or exchange is determined in the best interest, then it must be reviewed and approved by an act of Congress. The following FLPMA excerpt specifies that:

> *"(1) the public lands be retained in Federal ownership, unless as a result of the land use planning procedure provided for in this Act, it is determined that disposal of a particular parcel will serve the national interest;*
>
> *…*
>
> *(10) uniform procedures for any disposal of public land, acquisition of non-Federal land for public purposes, and the exchange of such lands be established by statute, requiring each disposal, acquisition, and exchange to be consistent with the prescribed mission of the department or agency involved, and reserving to the Congress review of disposals in excess of a specified acreage;"*

The primary concern associated with disposal of BLM lands in Imperial County is that the majority of the county is covered with various types of military operating areas (MOAs) or airspaces. Some of these MOAs, special use airspaces, and military training routes have an active floor for which military aviation operations can begin at ground level. If BLM disposes of land to a private or local government stakeholder without coordination with the military in the JLUS study area, then a potential for incompatible development such as mining activities could occur. Incompatible development on the disposed land could render some of the military training activities ineffective or no longer viable compromising training missions which could be ripe for realignment to other locations in the country where encroachment is mitigated.

## EXISTING TOOLS

### California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) Plan includes a goal for the Land-Tenure Adjustment Program that provides guidance for BLM land disposals:

> *"The Land-Tenure Adjustment Element is designed to direct the acquisition and disposal of public lands to maximize efficiency and consistency of public land management. Such actions will be taken in accordance with the Federal laws and regulations."*

Although the BLM El Centro District Field Office has no current plans for disposal of lands near NAF El Centro ranges, the CDCA Plan does not have any policies addressing military compatibility when reviewing development applications.

The CDCA Plan provides general guidance for coordination with the military relative to implementation of the CDCA Plan:

> *"The BLM will also have to maintain a close coordination with the Department of Defense and with local military bases in the CDCA to insure that implementation of the California Desert Plan will be consistent as possible with the missions and purposes of these bases.*
>
> *The BLM will also work toward encouraging assistance from these military bases in managing public uses on public lands within the vicinity of the bases."*

While these provisions set an initial standard for coordination with the military, it does not provide specific guidance to coordinate with the military and communities to address any potential future disposal of lands in this area.

As authorized by FLMPA, BLM has the authority to dispose of land for the purposes of creating land management efficiencies or to meet or secure mission objectives such as resource management and exploration, development, and testing. The BLM may dispose of land through several methods including but not limited to:

- Fee simple acquisition transaction
- Land exchanges
- Conservation Easements

In order to procure land exchanges, BLM has regulatory measures it must comply with before a final transaction of disposal of public lands. These regulatory measures include but are not limited to the following:

- Evaluation of the feasibility of land exchanges
- Public notice and participation requirements
- Documentation standards
- Protest and appeal processes
- Conveyance requirements

| Issue LU-9 | **Incompatible General Plan and Zoning Land Use Designations.** Certain designations within the AICUZ noise contours allow land uses that are potentially incompatible with NAF El Centro air operations. |
|---|---|

### COMPATIBILITY ASSESSMENT

The land uses adjacent and proximate to NAFEC proper and the training ranges were assessed for compatibility based on the 2010 NAFEC AICUZ report and the results from the U.S. Navy's range compatibility assessment and the U.S. Navy Instruction for RAICUZ programs from the Office of the Chief of Naval Operations (OPNAV Instruction 3550.1A). A detailed discussion of these tools is provided in Chapter 4, Existing Compatibility Tools.

It should be noted that NAFEC is currently preparing their RAICUZ report. Based on the operations and activities performed on NAFEC ranges, compatibility zones (or safety zones) and noise contours were modeled for the range and recommended land uses provided to local jurisdictions to assist in compatible planning around military ranges. Detailed information about the range compatibility zones is provided in Chapter 3, Military Profile. Due to the nature of the military operations, the potential for future incompatible development is a concern for the military and the viability of NAFEC ranges.

### General Plan-Designated Land Uses

Figure 5-3 illustrates the evaluation of General Plan-Designated land uses under the aircraft safety zones. The land extending off of Runway 08 is the only area where development of any kind is completely incompatible. This area is designated as restricted due to the potential for aircraft accidents. While the majority of this area is riverbank, development of any type including any activities, such as commodity stacking is strongly discouraged. This issue is discussed in detail in Issue SA-2.

Land within the APZs is considered conditional, meaning uses within the APZs are typically compatible, but may require some consideration and / or consultation by the Navy. The conditional designation is based on the potential for aircraft accidents in these areas. The AICUZ study recommends these areas be less restrictive than the CZ, but greater densities, tall structures, and certain types of land uses are discouraged in the APZs. While agriculture is typically a compatible use, the concern about the agriculture-designated areas near NAFEC involving certain types of activities could represent an incompatibility if located in the safety zones, such as, activities that attract birds and other wildlife that could increase the risk of bird and wildlife collisions with aircraft flying at lower speeds and altitudes.

## EXISTING TOOLS

### Imperial County General Plan

The Imperial County GP currently allows animal keeping and feed lot land uses in agriculturally-designated land. The GP does not consider compatibility with aircraft safety zones, i.e. crops that attract birds and wildlife.

Similarly, a majority of the agricultural lands surrounding the installation within the noise contours are compatible with conditions based on the AICUZ study as illustrated in Figure 5-4 which indicates a noise level reduction (NLR) of either 25 dB to 30 dB for residential uses on designated agriculture land depending on which noise contour the residential use is located. Table 5-8 identifies land uses that could potentially present incompatible development relative to exceptions for agricultural land uses in the APZs.

It should be noted that in the community of Seeley, there are mobile homes and areas designated to allow future mobile homes. Mobile homes are typically incompatible within the 65 dB / CNEL noise contour and the greater noise contours due to the construction materials used in these types of structures. Mobile homes in the Seeley Community are discussed in Issue LU-5.

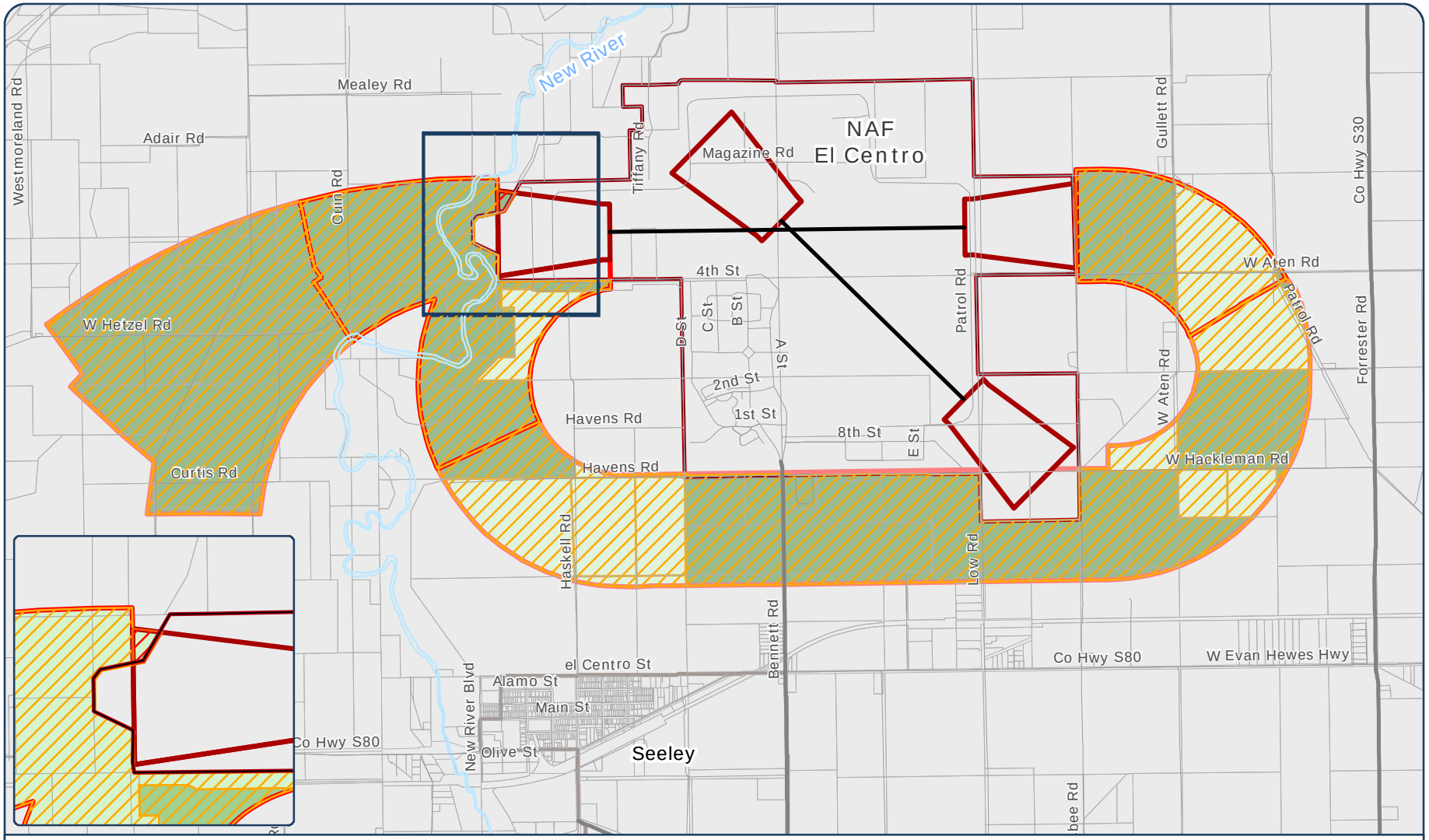
Figures 5-5A and 5-5B show the GP-Designated land uses under the range compatibility zones for the West and East Mesa Ranges. Table 5-7 identifies the recommended compatible land uses in the RCZs. This table was used to determine compatibility for land uses located within the RCZs of the NAFEC ranges.

### *Public Law 104-201 Memorandum of Understanding El Centro NAF El Centro Ranges Withdrawal*

Development is restricted within RCZ I; however, RCZ I is entirely within military-controlled lands. Figures 5-5A and 5-5B illustrate the areas where RCZ II extends off of the military-controlled ranges onto other public lands. These lands are subject to land use controls by other governmental agencies. Currently, there are general plan-designated land uses within RCZ II associated with the Shade Tree and Kitty Baggage Targets. The incompatible land uses are designated for government / special public use and administered by BLM.

Public Law 104-201 (PL 104-201) allows potentially incompatible uses such as mining and energy resources development. However, PL 104-201 requires coordination with the Navy's Commanding Officer before an approval is granted by BLM.

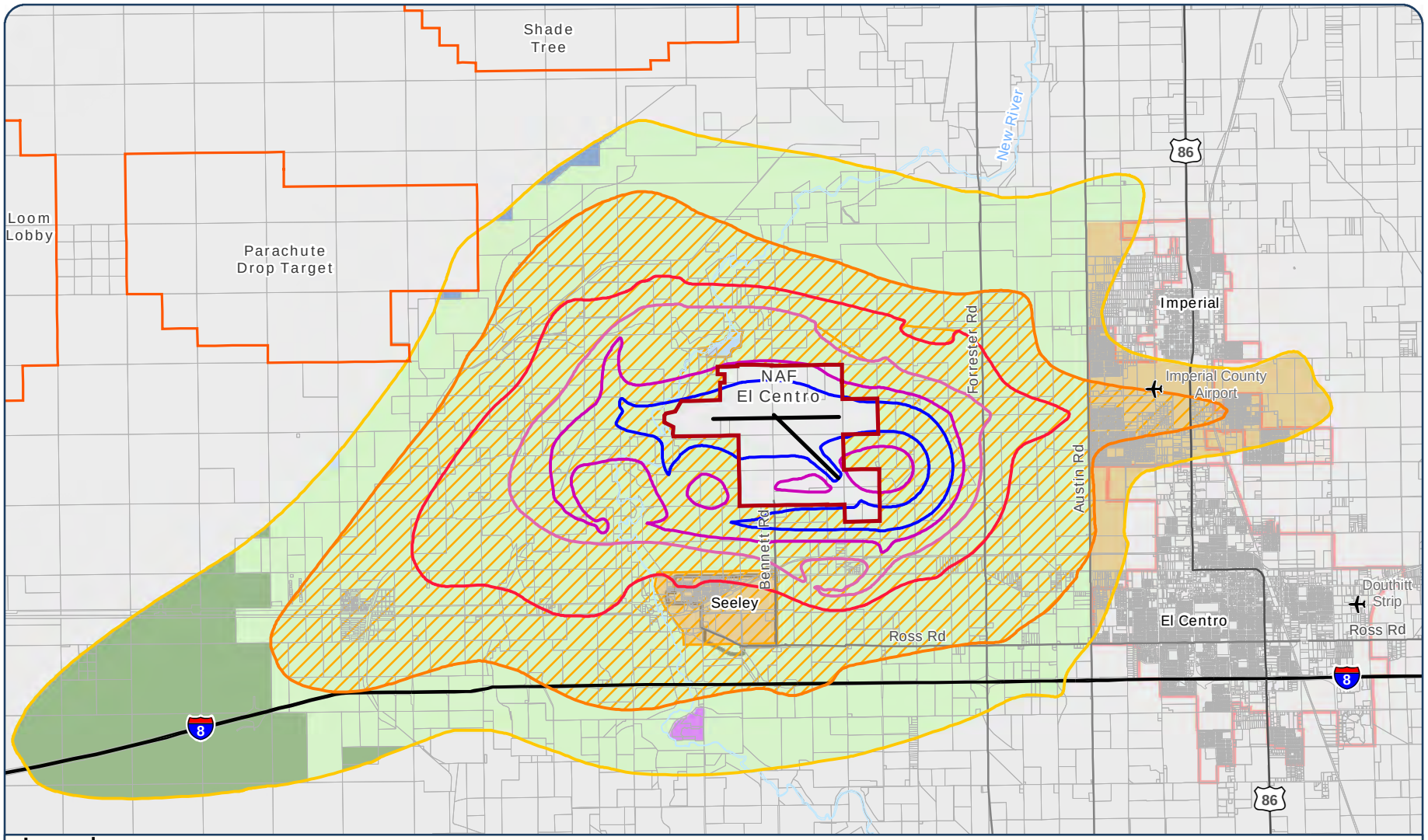
Figure 5-5C illustrates the land ownership and as shown, a majority of the land within the RCZ II and III is owned by BLM. In fact, BLM owns 87 percent of the land comprising RCZ II for the West and East Mesas, while only nine percent is designated as private land. In RCZ III, BLM land comprises 62 percent while private land is 19 percent. As previously mentioned, the PL 104-201 requires BLM and the Bureau of Reclamation to coordinate with the Navy for any land use activities associated with BLM lands within the RCZs.




Sources: Imperial County, 2013; NAF El Centro, 2013.

*Fig_5-3_NAFEC_JLUS_Compat_ASZ_FLU_20140109_JKC.pdf*

**Figure 5-3**
**Evaluation of General Plan-Designated Land Uses Under Aircraft Safety Zones**

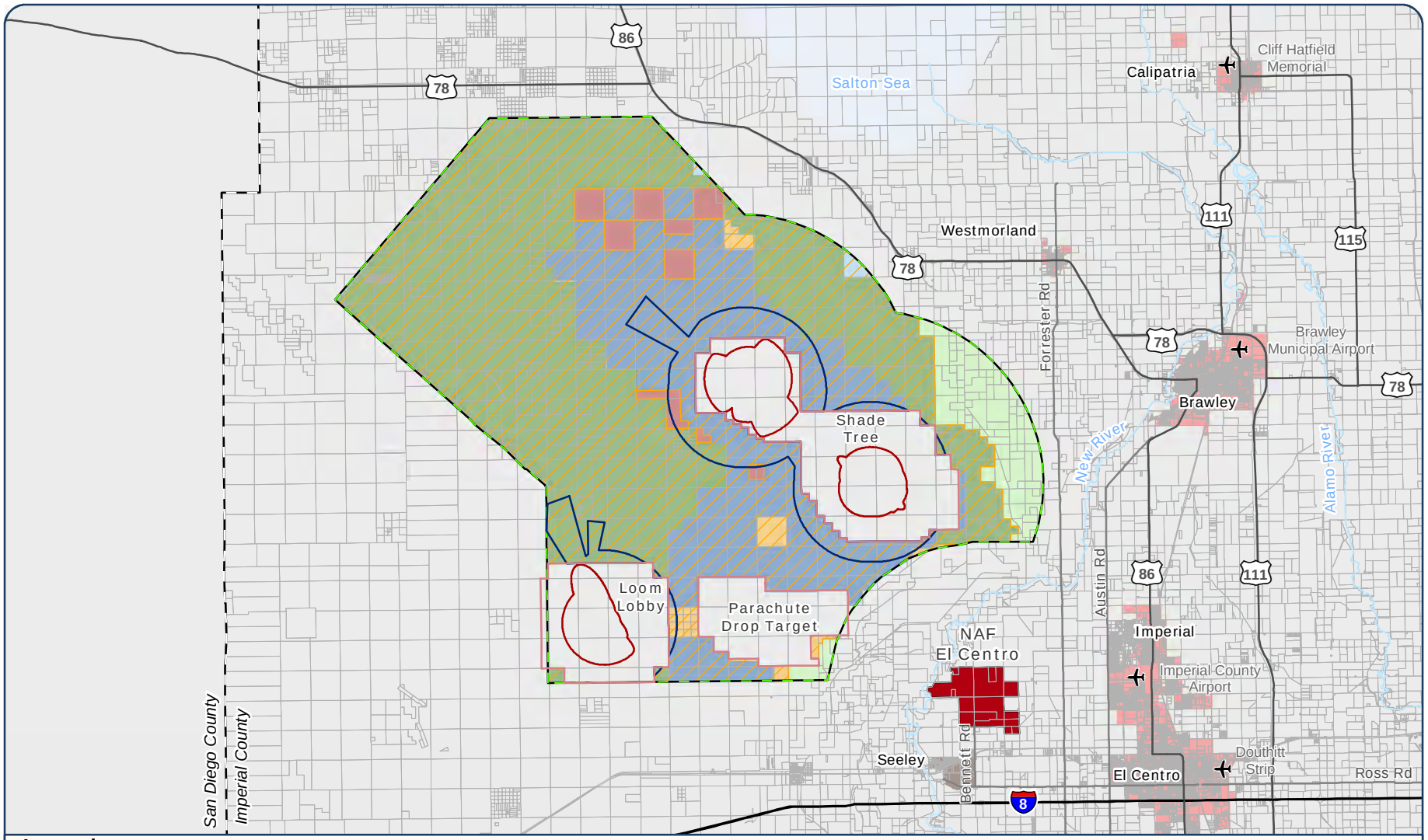



Source: Imperial County, 2013; NAF El Centro, 2013.

*Fig_5-4_NAFEC_JLUS_Compat_Noise_FLU_20140121_JKC.pdf*

**Figure 5-4**

## Evaluation of General Plan-Designated Land Uses Under Noise Contours

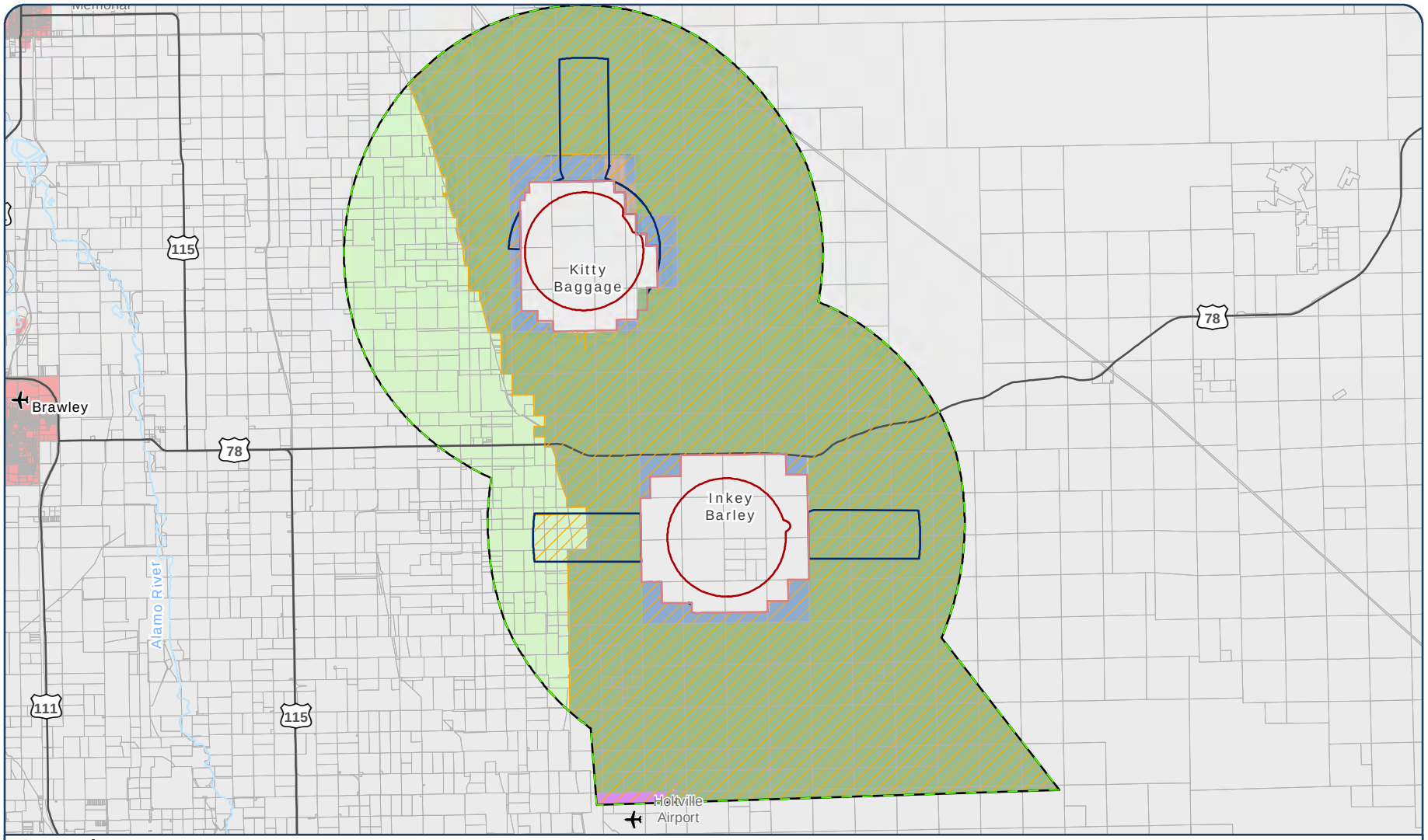



Sources: Imperial County, 2013; NAF El Centro, 2013.

**Figure 5-5A**

## Evaluation of General Plan-Designated Land Uses Under West Mesa Range Zones

*Fig_5-5A_NAFEC_JLUS_Compat_Range_FLU_West_Mesa_20140118_JKC.pdf*

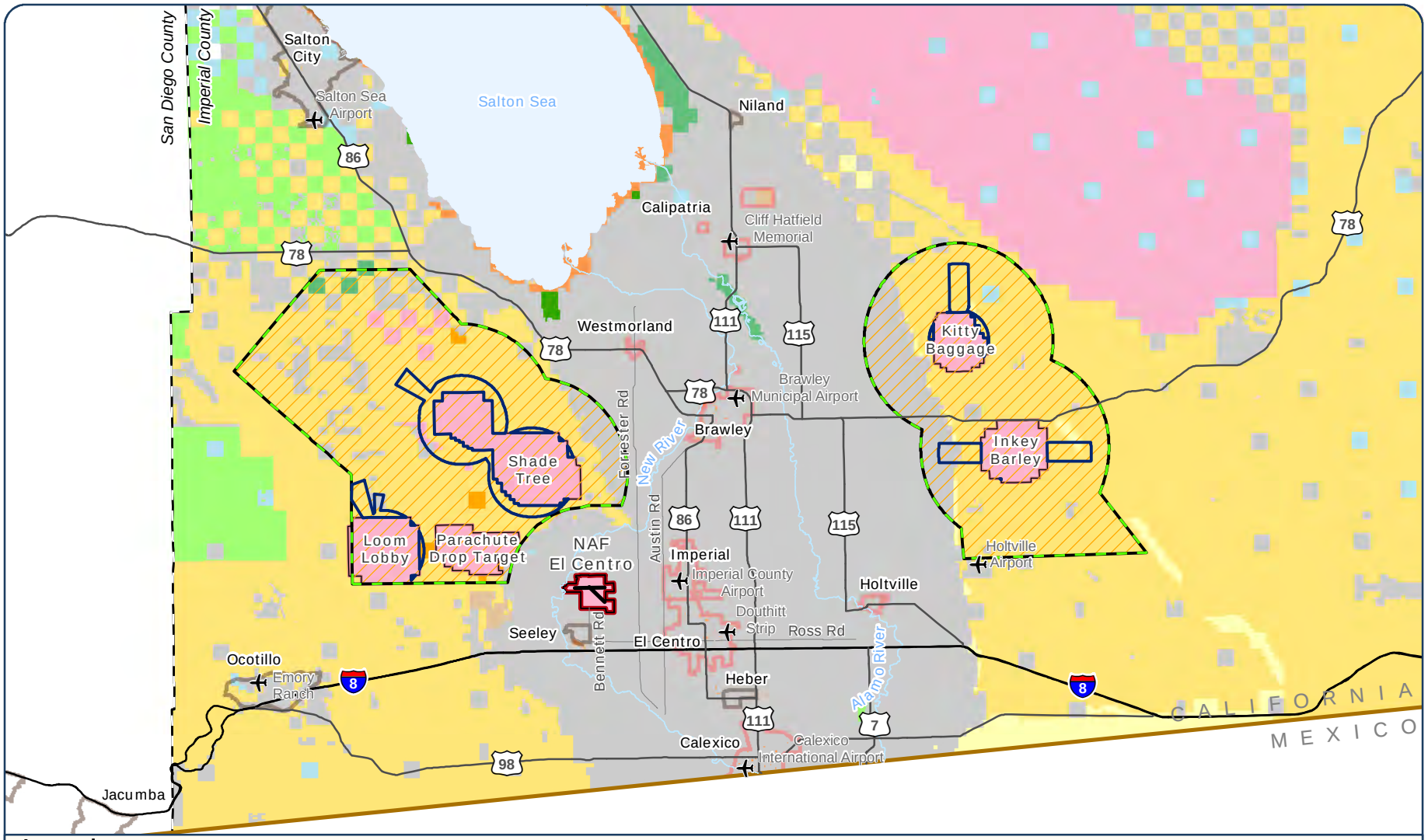



Sources: Imperial County, 2013; NAF El Centro, 2013.

**Figure 5-5B**

**Evaluation of General Plan-Designated Land Uses Under East Mesa Range Zones**

*Fig_5-5B_NAFEC_JLUS_Compat_Range_FLU_East_Mesa_20140218_JKC.pdf*




**Legend**

**Compatibility**
- Conditional

**Range Compatibility Zone**
- RCZ-II
- RCZ-III

**Federal Land**
- Bureau of Land Management
- Bureau of Reclamation
- Department of Defense
- Fish and Wildlife Service

**State Land**
- Department of Fish and Game
- Department of Parks and Recreation
- State Lands Commission
- Other

**Other Ownership**
- Local Government
- Private

- NAF El Centro
- Range
- Incorporated City
- Unincorporated Community
- International Boundary
- County Boundary
- Interstate
- US Highway
- Major Ro
- River
- Airport

0 5 10 Miles

Matrix Design Group

Sources: Imperial County, 2013; NAF El Centro, 2013; Caltrans, 2013; CAL FIRE, 2013.

*Fig_5-5C_NAFEC_JLUS_LandOwnership_20140219a_JKC.pdf*

**Figure 5-5C**
**Evaluation of Land Ownership under West and East Range Zones**

The RCZ III encompasses the restricted airspace and maneuvering area used to perform weapons delivery and training exercises. The majority of the GP-designated uses within the RCZ III are generally compatible with exceptions. Agricultural land uses are compatible within the RCZ III as illustrated in Figures 5-5A and 5-5B. There are parcels within the RCZ III identified in Figure 5-2 as Williamson Act lands where the agriculture preserve designation and associated restrictions will be retired in nine years. This can potentially represent an incompatibility in the future should a property owner desire to develop the land and recover market value.

## Zoning

Figure 5-6 illustrates the incompatible zoning within aircraft safety zones. The area identified with a "No" as incompatible is zoned for agriculture. This area is within the CZ of Runway 08 and recommended to be free of any development including the stacking of hay bales.

Figure 5-7 illustrates the incompatible zoning within airfield noise contours. The majority of the lands within the noise contours are generally compatible with exceptions. There are residential uses zoned and located within the 65 dB/CNEL noise contour compatible with exceptions. The exceptions are defined as recommending an interior NLR of 25 dB to 30 dB depending on which noise contour the residential uses are located.

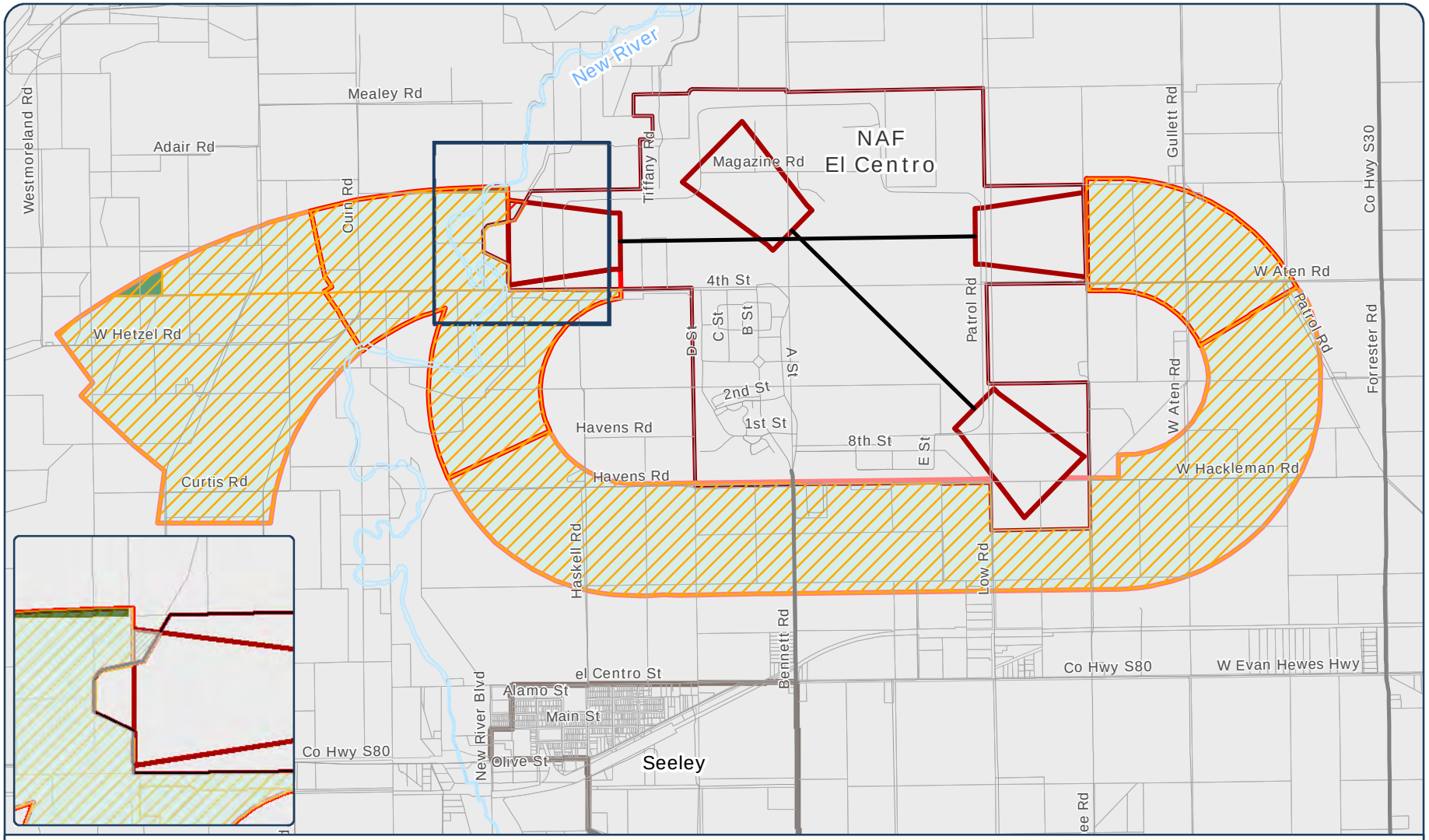
Figure 5-8 illustrates the zoning within the noise contours located over Seeley. Within the 65 dB/CNEL and 70 dB/CNEL noise contours residential uses are incompatible. However, the 65 dB may be compatible with exceptions provided an interior NLR of 25 dB is achieved for single-family residences. Multi-family residential is incompatible in these noise contours.

Portions of the city of El Centro are located within the 65 dB/CNEL noise contours shown on Figure 5-9. Based on the Navy Instruction for RAICUZ Programs (OPNAV Instruction 3550.1A) and as identified in Table 5-4, the land uses identified as compatible with exceptions include multi-family residential provided the structures achieve an interior NLR of 25 dB.

Figure 5-10, illustrates the zoning within the noise contours of the NAFEC airfield for the city of Imperial. Like the city of El Centro, the multi-family residential use is compatible with exceptions provided the structures achieve a NLR of 25 dB.

Figures 5-11A and 5-11B illustrate the evaluation of zoning within the RCZs of the West and East Mesa Ranges. This figure shows land zoned for government use, designated within RCZ II and incompatible rather than compatible with exceptions. This incompatibility is specific to safety concerns since RCZ II is the armed overflight run-in areas. This area should not contain development where densities and intensities are higher as the safety risk increases.

The zoning within RCZ III contains land zoned for recreational and open space and government use. This, however, does not significantly impact the compatibility for this area. The land uses within RCZ III are compatible with exceptions, except for the land zoned agriculture which is compatible. The land zoned for government use has exceptions due to low-level flight activity. All development is considered incompatible with low-level flight activities in these areas.

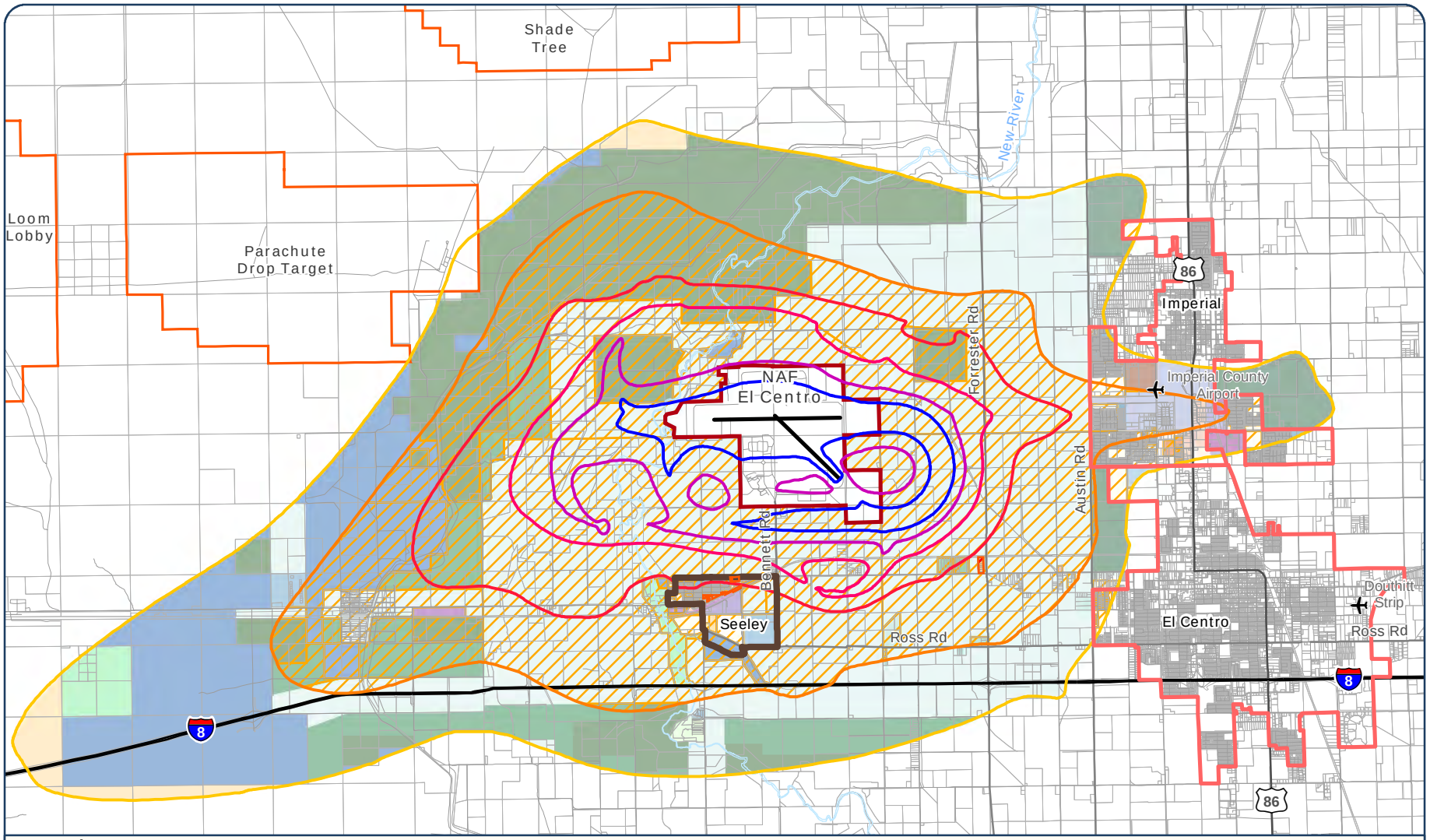



Sources: Imperial County, 2013; NAF El Centro, 2013.

*Fig_5-6_NAFEC_JLUS_Compat_ASZ_Zoning_20140110_JKC.pdf*

**Figure 5-6**

## Evaluation of Zoning Under Aircraft Safety Zones

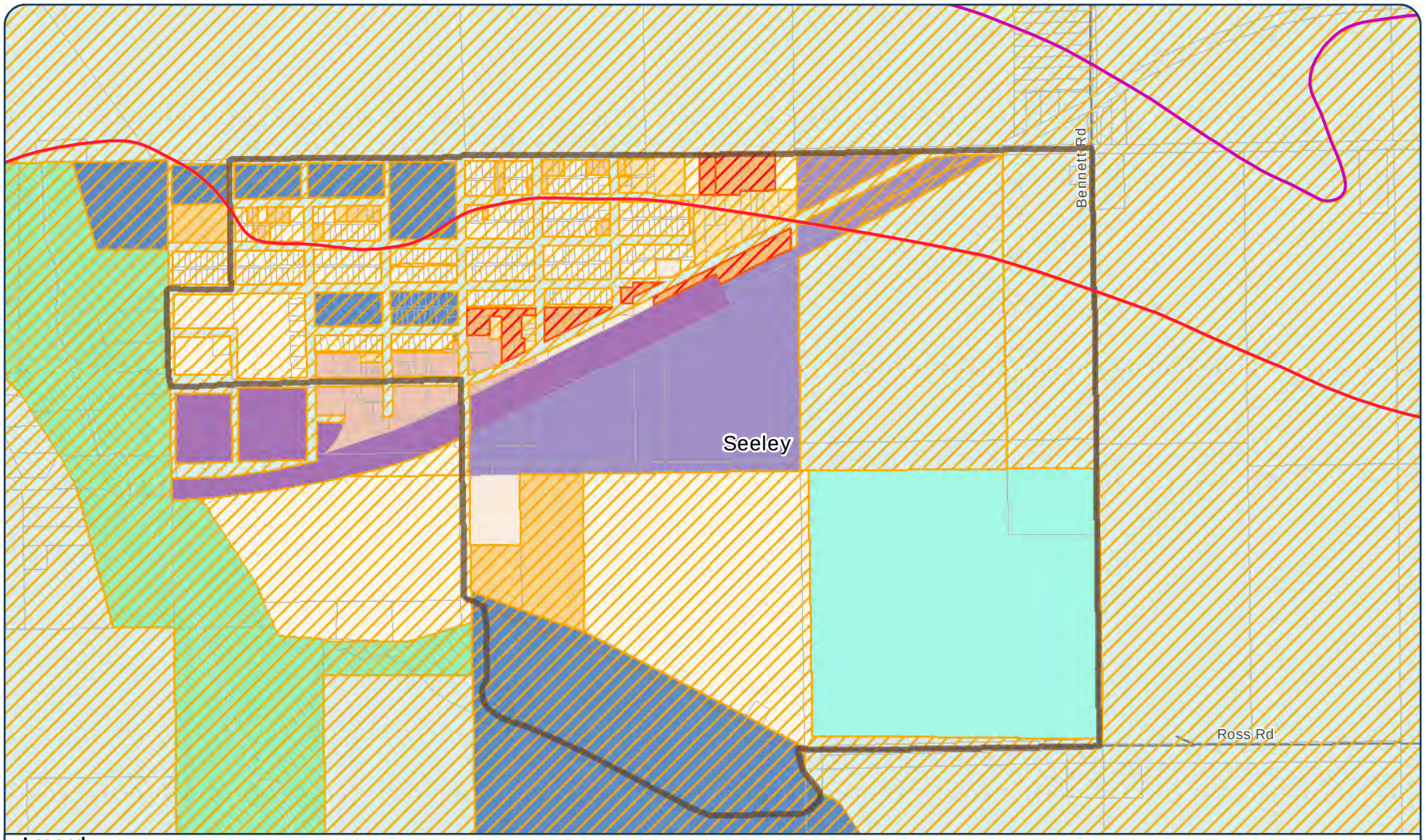



Source: Imperial County, 2013; City of Imperial, 2013; City of El Centro, 2013; NAF El Centro, 2013.

*Fig_5-7_NAFEC_JLUS_Compat_Noise_Zoning_20140113_JKC.pdf*

**Figure 5-7**

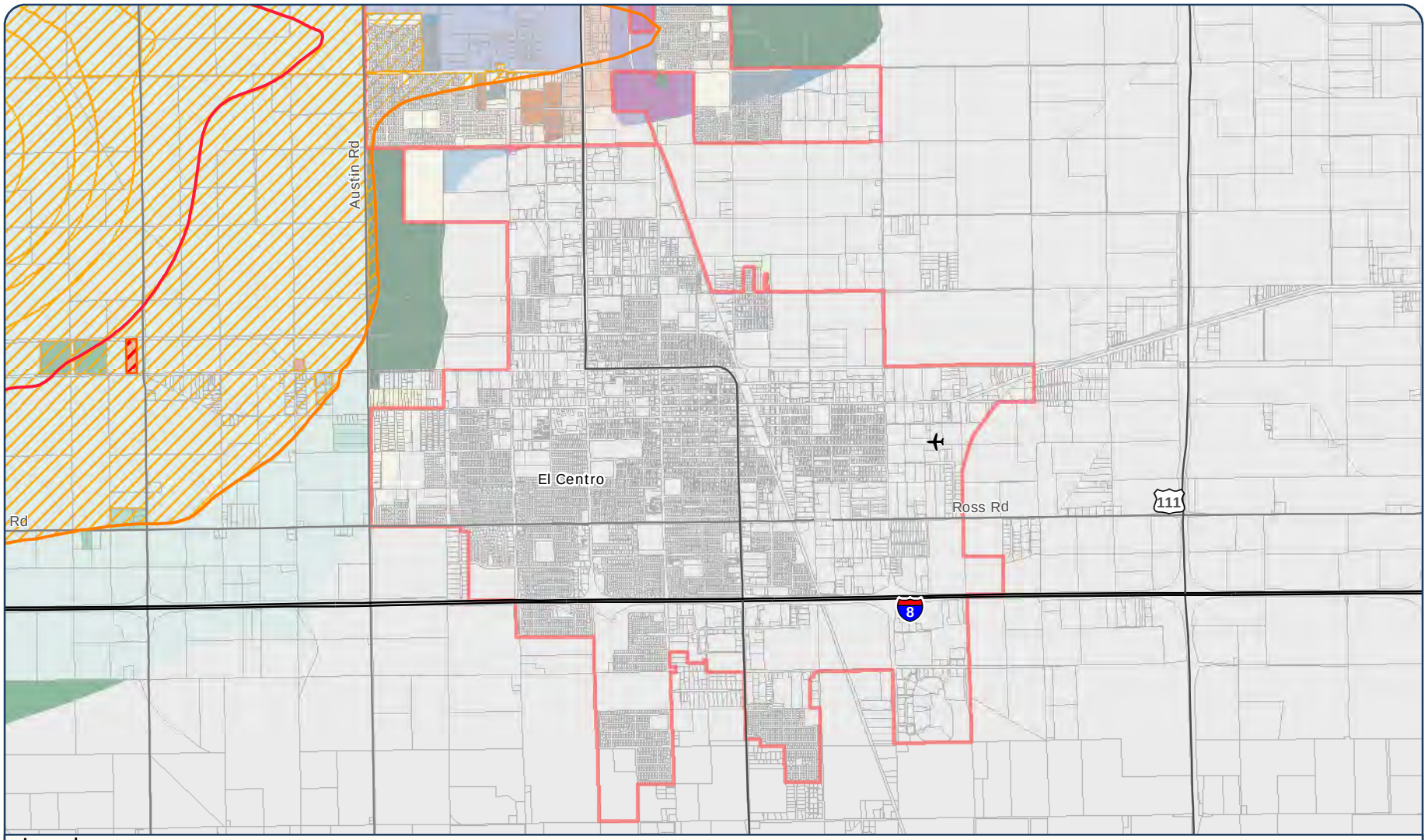
## Evaluation of Zoning Under Airfield Noise Zones




Source: Imperial County, 2013; NAF El Centro, 2013.

**Figure 5-8**
**Evaluation of Zoning in Seeley Under Airfield Noise Zones**

*Fig_5-8_NAFEC_JLUS_Seeley_Noise_Comp_20140122_JKC.pdf*

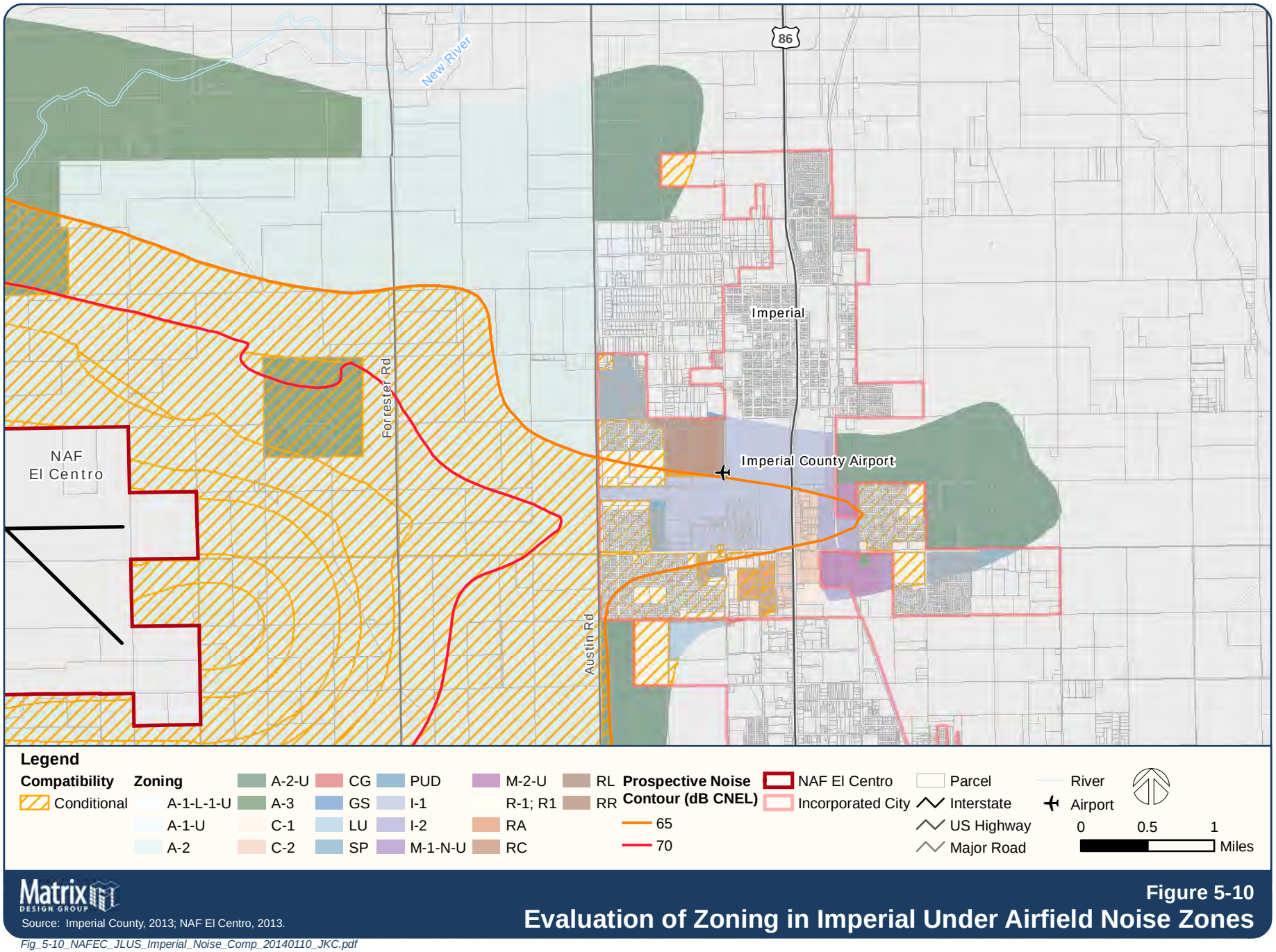



Source: Imperial County, 2013; NAF El Centro, 2013.

**Figure 5-9**

## Evaluation of Zoning in El Centro Under Airfield Noise Zones

*Fig_5-9_NAFEC_JLUS_ElCentro_Noise_Comp_20140110_JKC.pdf*

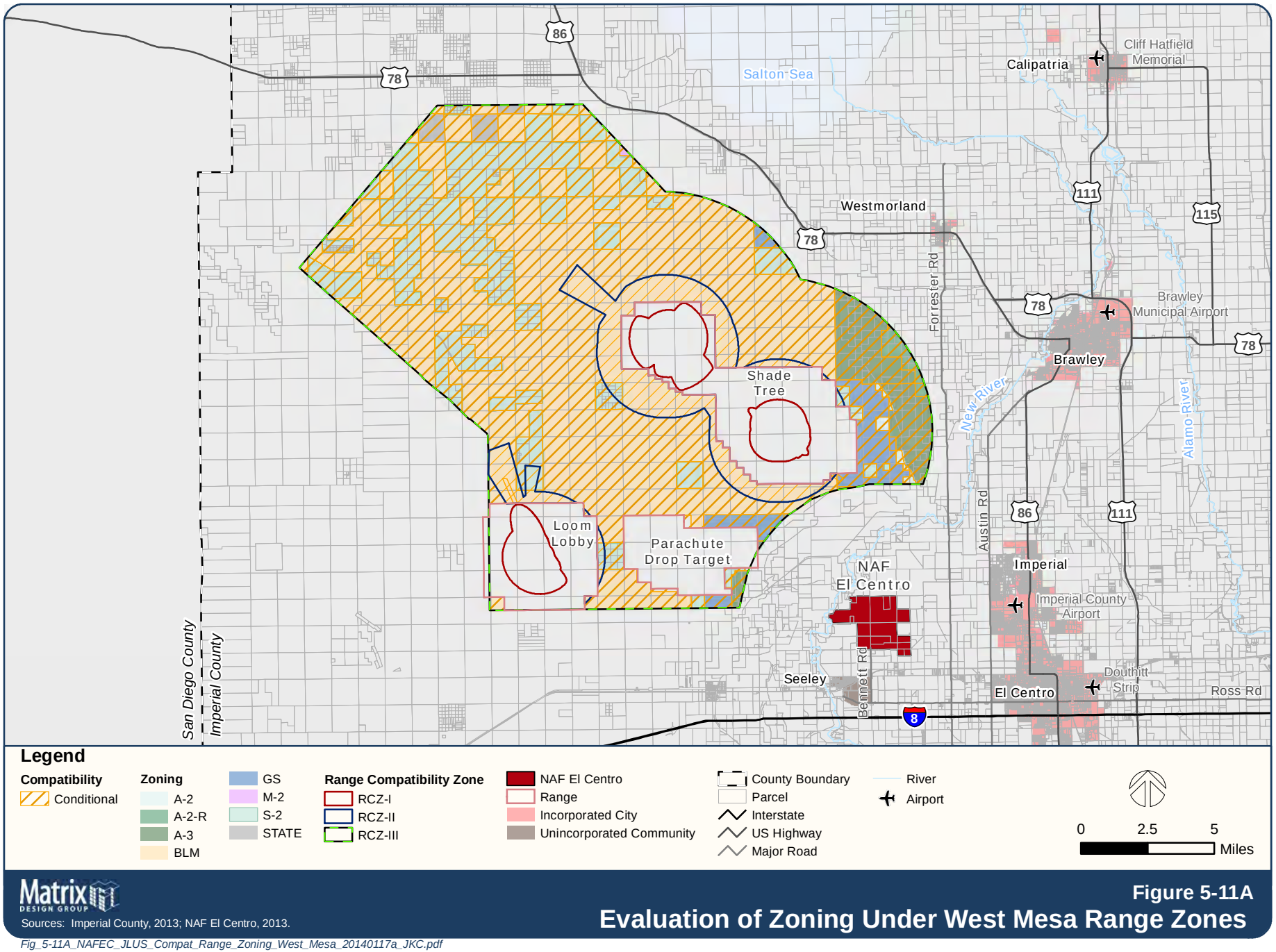



Source: Imperial County, 2013; NAF El Centro, 2013.

*Fig_5-10_NAFEC_JLUS_Imperial_Noise_Comp_20140110_JKC.pdf*

**Figure 5-10**

## Evaluation of Zoning in Imperial Under Airfield Noise Zones

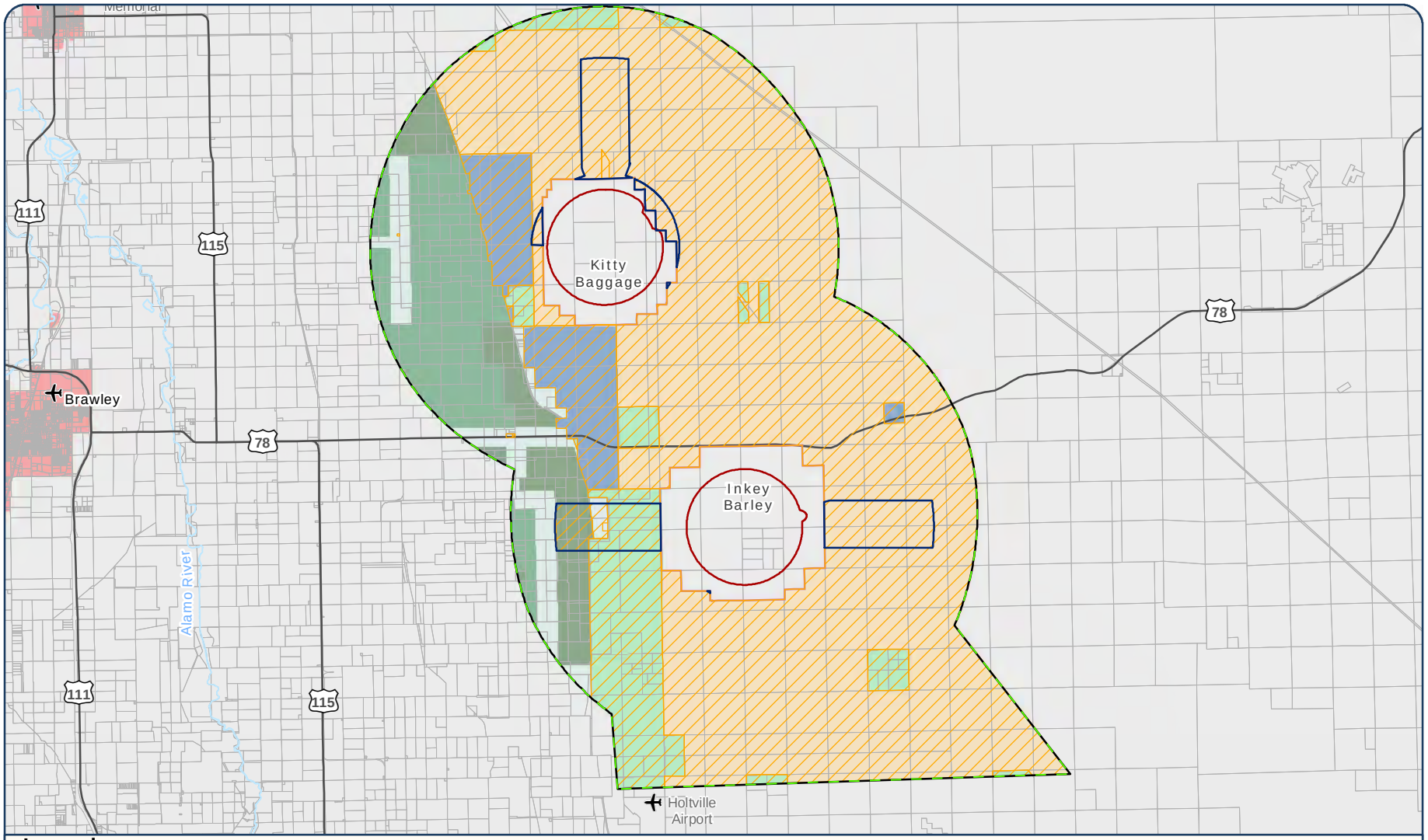



Sources: Imperial County, 2013; NAF El Centro, 2013.

*Fig_5-11A_NAFEC_JLUS_Compat_Range_Zoning_West_Mesa_20140117a_JKC.pdf*

**Figure 5-11A**

## Evaluation of Zoning Under West Mesa Range Zones




Sources: Imperial County, 2013; NAF El Centro, 2013.

**Figure 5-11B**
**Evaluation of Zoning Under East Mesa Range Zones**

*Fig_5-11B_NAFEC_JLUS_Compat_Range_Zoning_East_Mesa_20140117a_JKC.pdf*

## 3. Safety

*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, weapons firing range safety zones, and explosive safety zones.*

### BACKGROUND

Military installations 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 airfields to minimize damage from potential aircraft accidents and reduce air navigation hazards. To help mitigate potential issues, DOD has delineated Clear Zones (CZ) and Accident Potential Zones (APZ) in the vicinity of airfield runways. The APZ is divided into APZ I, II and III. Each zone was developed based on the statistical review of aircraft accidents. Studies show that most mishaps occur on or near the runway, predominately along its extended centerline.

In consideration of the CZ and APZs where aircraft tend to fly at slower speeds and lower altitudes, bird and wildlife air strike hazards (BASH) are more likely to occur in the APZs. Federal Aviation Administration (FAA) statistics have shown that a majority of bird and wildlife strikes associated with aircraft occur below 3,000 feet above ground level (AGL) and within five miles of the airfield. Airfields, when combined with migratory patterns of birds and wildlife and land uses that attract birds, can potentially cost the U.S. Navy millions of dollars in equipment.

### COMPATIBILITY ASSESSMENT

| | |
|---|---|
| **Issue SA-1** | **Restoration projects on the New River could attract birds into critical flight operation areas at end of NAF El Centro runways.** The New River Restoration Project is proposing wetlands restoration that could encourage increased populations of water fowl and wildlife in BASH risk areas associated with NAFEC runways. |

In 2009, the New River Restoration Project was initiated by Assembly Bill (AB) 1079 to bring the river into compliance with the Clean Water Act and California's Porter-Cologne Water Quality Act. Senate Bill 1079 requires the California-Mexico Border Relations Council to develop a strategic plan for studying, monitoring, remediating, and enhancing New River water quality. The goal of this strategic plan is to protect human health and provide a foundation for the creation of a water resource / recreation amenity suitable for public use. The Council appointed a Technical Advisory Committee to oversee the strategic plan development.

The New River originates in Mexicali and runs north through the Imperial Valley, west of NAFEC to an outfall in the Salton Sea. The proposed restoration area is approximately 3,000 feet from the end of Runway 8/26. The runway is oriented in an east-west direction and used for night training activities since it is equipped with lighting at both runway ends which simulates an aircraft carrier landing. Although NAFEC supports the New River restoration, there is a concern that if the restoration does not incorporate mechanisms to deter birds the risk of a bird strike may increase.

The 2010 NAFEC AICUZ study reported a total of seven bird strikes between the years 2003 and 2009. While loss of human life is rare in these BASH incidents, the damage to aircraft and federal property is costly for the U.S. Navy. Wetland restoration along the New River without Navy consultation or consideration could result in increased aircraft equipment and maintenance costs.

There are several types of restoration methods available that will deter birds including aeration projects created by artificial rapids.

## EXISTING TOOLS

### New River Improvement Strategic Plan

As a result of Assembly Bill 1079 and to achieve compliance with the Clean Water Act and California's Porter-Cologne Water Quality Act, the New River Improvement Strategic Plan was developed to address the water quality issues associated with the New River. As part of the implementation of the New River Strategic Plan, a wetlands restoration project is proposed along New River.

The wetland restoration project is intended to improve water quality at several proposed sites near the NAFEC airfield, military targets, and associated ranges that could potentially attract an increased population of waterfowl and other wildlife posing a threat to the safety of pilots and aircraft. Figure 5-12 illustrates locations of the restoration projects proximate to Runway 8/26 and training ranges.

| Issue SA-2 | **Portion of Clear Zone lies off installation lands.** The northwest corner of Runway 08/26 lies off lands controlled by NAF El Centro, which allows objects to be placed in this area in violation of safety standards. |
|---|---|

A total of eight acres of the CZ associated with Runway 08 extends off of the installation and into unincorporated Imperial County as shown on Figure 5-13. This land is not owned by the U.S. Navy and subject to the land use controls employed by the Imperial Irrigation District. While this area is along the banks of the New River and virtually undevelopable, this can represent a potential incompatibility if development, i.e. utilities, or other activities such as stacking of commodities, i.e. hay bales, occurs because this area is designated as restricted from development.

The 2010 NAFEC AICUZ report identifies this as an area for increased risk of aircraft accidents due to slower aircraft speeds and low-level altitudes while performing approach or departure operations. Accordingly, the U.S. Navy and U.S. Air Force AICUZ guidelines recommend the CZ remain an area restricted from development.

## 4. Vertical Obstructions

*Vertical obstructions are created by buildings, trees, structures, or other features that may encroach into the navigable airspace used for military 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.*

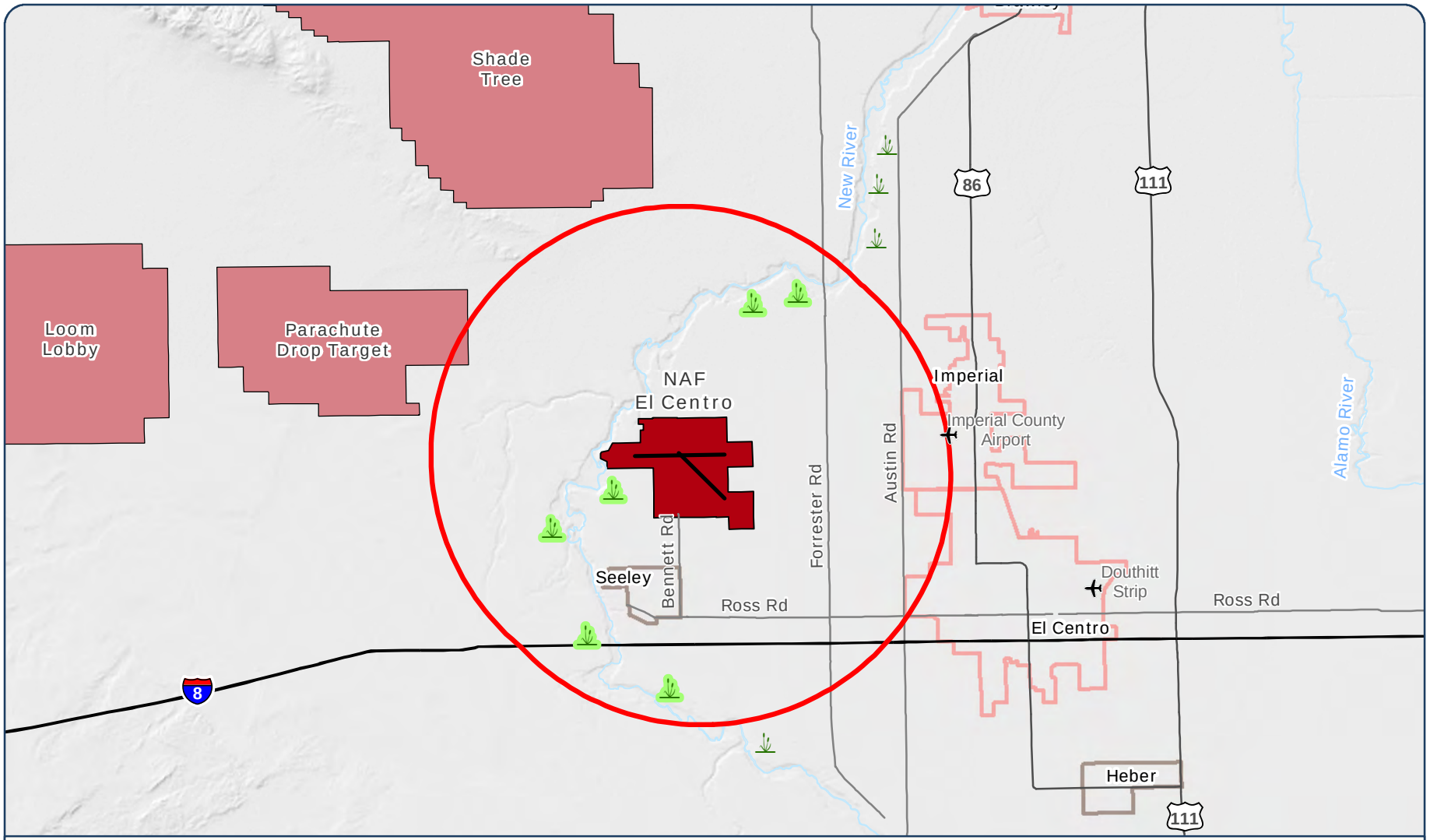
## BACKGROUND

Vertical obstructions can compromise the value of low-level flight training by limiting the areas where such training can occur. These obstructions include a range of man-made and natural objects including telephone poles and radio antennae, and tall trees and land features.

Vertical obstructions are addressed through compliance with Federal Regulation Title 14 Part 77, which establishes standards and notification requirements for objects affecting navigable airspace. Commonly referred to as Part 77 compliance, this regulation provides provisions to evaluate the potential for a vertical obstruction based on the elevation of the airfield, the height and resulting elevation of the new structure or facility, and the location of the structure or facility relative to the airfield in question.

To determine when structures or facilities should be evaluated for vertical obstruction, Part 77 states the following:

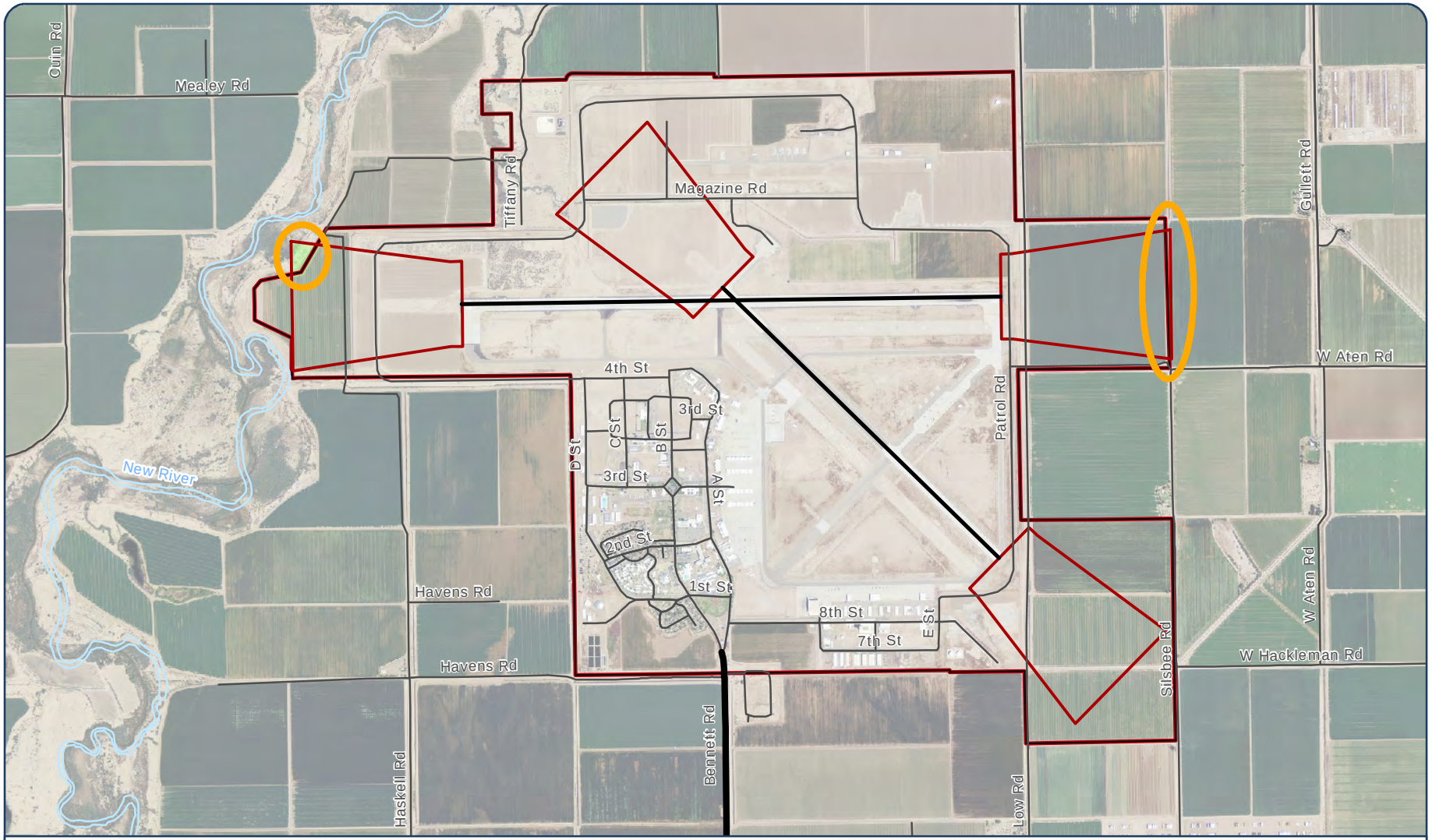
> *§77.9 - Any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA:*
>
> *Any construction or alteration exceeding 200 feet above ground level*
>
> *Any construction or alteration:*
>
> *- within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 feet.*




Source: Matrix Design Group, 2013.

*Fig_5-12_NAFEC_JLUS_BASH_20131104_JKC.pdf*

**Figure 5-12**
**Potential BASH Concerns**




Sources: Imperial County, 2013; NAF El Centro, 2013.

**Figure 5-13**
**Safety Concerns for Clear Zone Off-Installation Lands**

*Fig_5-13_NAFEC_JLUS_Safety_CZ_20131101_JKC.pdf*

*- within 10,000 feet of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 feet.*

*- within 5,000 feet of a public use heliport which exceeds a 25:1 surface*

*Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed the above noted standards*

*When requested by the FAA*

*Any construction or alteration located on a public use airport or heliport regardless of height or location*

*Part 77 identifies the height at which an object may be considered an obstruction at a designated distance. An excerpt from Section 77.17 follows:*

*§77.17- Obstruction standards.*

*(a) An existing object, including a mobile object, is, and a future object would be an obstruction to air navigation if it is of greater height than any of the following heights or surfaces:*

*(1) A height of 499 feet above ground level at the site of the object.*

*(2) A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet.*

*(3) A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.*

*(4) A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.*

*(5) The surface of a takeoff and landing area of an airport or any imaginary surface established under § 77.19, 77.21, or 77.23. However, no part of the takeoff or landing area itself will be considered an obstruction.*

*(b) Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by*

*(1) 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance.*

*(2) 15 feet for any other public roadway.*

*(3) 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.*

*(4) 23 feet for a railroad.*

*(5) For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it.*

The FAA identifies certain imaginary surfaces around runways to assess whether structures and facilities pose a vertical obstruction relative to the airspace surrounding a runway. The levels of imaginary surfaces build upon one another and are designed to eliminate obstructions to air navigation and operations, either natural or man-made. The dimension or size of an imaginary surface depends on the runway classification.

| | |
|---|---|
| **Issue VO-1** | **Concern about the expansion of large-scale solar energy and other alternative energy projects in the area.** Expansion or renovation of additional renewable energy facilities or units could present height issues, radar interference / impedance, and/or visual impairments (glare) associated with navigable airspace. |

Imperial County is situated in the Imperial Valley, which has a unique geography comprising a small portion of the larger Sonoran Desert and agricultural lands. This geography combined with surplus available land is ideal for large-scale solar and other alternative energy development. The Imperial Valley is also home to several species of concern managed by the USFWS and the NAFEC training ranges where aviators from all over the country and worldwide participate in target bombing practice, field carrier landing practice, and other aviation training exercises. This geography provides a multi-faceted environment for various operational, environmental, and developmental opportunities.

Energy projects can present potential incompatibility if development is uncoordinated and managed without a multi-jurisdictional approach. Construction materials used in the development of solar energy infrastructure may employ reflective surfaces causing visual impairment for pilots in training. Transmitting or tracking towers installed at a solar array have the potential to reach heights in excess of 200 feet and could create a vertical obstruction and safety hazard for pilots and aircraft. Steam plumes generated from geothermal cooling towers can also create vertical obstructions for pilots and interfere with radar and satellite communications.

## EXISTING TOOLS

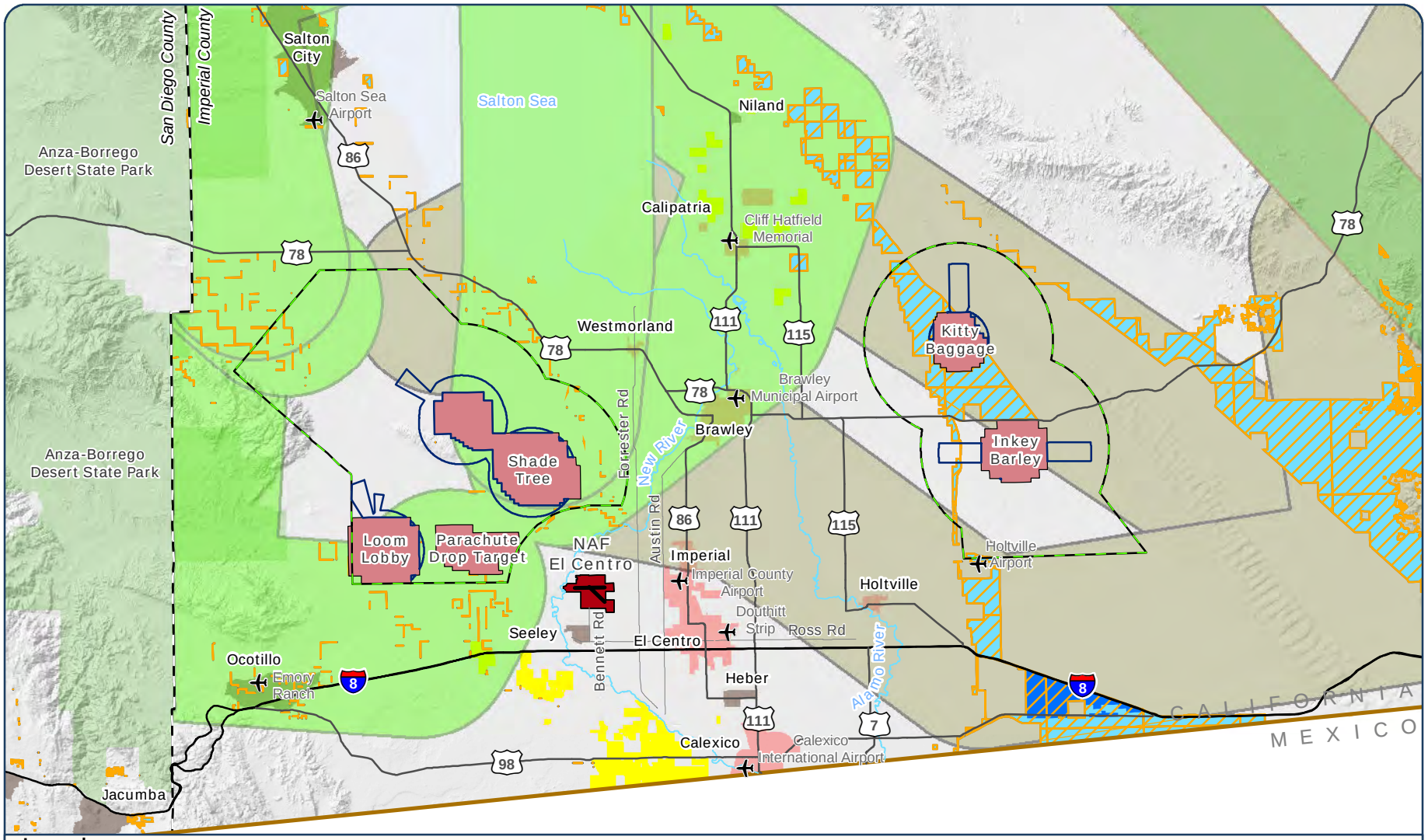
### Solar Energy Development in Six Southwestern States Resource Management Plan

The Solar Energy Development in the Six Southwestern States Resource Management Plan (RMP) includes Arizona, California, Colorado, Nevada, New Mexico, and Utah and requires developers proposing large-scale utility solar energy projects [generating 20 or more Megawatts (MW)] on public land to do so on areas identified in the Solar Energy Program in combination with the identified priority land in the Solar Energy Zones (SEZs). The BLM has also identified potential suitable locations labeled as variance land, in this Plan. Environmental assessments including hydrological assessments have been conducted on the BLM-administered lands within the SEZs. Evaluations have also been conducted by pertinent groups and agencies including Native American tribes to determine suitability and minimize adverse impacts on historical and cultural resources. Since the variance lands have not received the same level of environmental and cultural resource evaluation, additional analysis may be required prior to the issuance of permits and authorized rights-of-way.

During the draft environmental impact statement (EIS) process for this RMP, BLM also identified land prohibited from solar energy development and labeled them as exclusionary land. Figure 5-14 shows the SEZs, variance lands acceptable for application of development, and current solar projects in Imperial County. Within the Imperial East SEZ, there are approximately 5,717 acres available for solar energy development.

The RMP, pursuant to the EIS and subsequent Record of Decision, includes objectives to streamline the processing and permitting of solar energy development projects proposed on public lands administered by BLM. The objectives include, but are not limited, to the following:

- Minimize potential adverse impacts on environmental resources.
- Provide flexibility to the solar industry when considering solar energy projects (i.e. location, facility size, technology, etc.).
- Standardize and streamline the authorization process for utility-scale solar energy projects proposed for BLM-administered lands.
- Meet projected demand for solar energy development.




Source: BLM, 2013.

*Fig_5-14_NAFEC_JLUS_Solar_Potential_20140219b_CJM.pdf*

**Figure 5-14**

## Evaluation of Solar Energy Potential Development Areas

The BLM has also incorporated procedures, design features, and action items for coordinating development with military and civilian aviation operations in the area:

> *"A.4.1.7.1 Design Features for Military and Civilian Aviation (MCA) – General*
> ***MCA1-1** Project developers shall coordinate with the BLM, military personnel, and civilian airspace managers early in the project planning process to identify and minimize impacts on military and civilian airport and airspace use.*
>
> *(a) Identifying impacts on military and civilian airport and airspace use shall include, but is not limited to, the following:*
>
> - *Submitting plans for proposed construction of any facility that is 200 ft (~61 meters) or taller and plans for other projects located in proximity to airports to the Federal Aviation Administration (FAA) to evaluate potential safety hazards."*
> - *Consulting with the U.S. Department of Defense (DOD) to minimize and/or eliminate impacts on military operations, and encouraging compatible development. This consultation will be initiated by the BLM and will include both general discussions for early planning and detailed assessments of specific proposals at the local level. The BLM will accept formal DOD submissions once they have been vetted through both the Military Departments and the DOD Siting Clearinghouse.*
> - *Evaluating impacts on military and civil aviation as part of the environmental impact analysis for the project and considering options to avoid, minimize, and/or mitigate adverse impacts in coordination with the BLM."*

This provides a multi-jurisdictional approach when proposing solar energy development in the Imperial Valley portion of Imperial County but does not provide guidance to local government agencies.

### California Desert Conservation Area Resource Management Plan

The California Desert Conservation Area (CDCA) Resource Management Plan (RMP) provides guidance and policy on the siting of geothermal and other alternative energy infrastructure in the Imperial Valley. The plan encourages the siting of geothermal plants and other alternative energy development projects within existing rights-of-way, (existing and proposed) transmission corridors, and joint-use utility corridors.

The CDCA RMP outlines criteria for approving alternative energy plant applications in the California Desert, including, but not limited to:

- Minimizing the number of separate rights-of-way by utilizing existing rights-of-way as basis for planning corridors.
- Encouraging joint use of corridors for transmission lines, canals, pipelines, and cables.
- Providing for alternative corridors to be considered during application processing.

These criteria encourage the collocation of alternative energy development projects with existing utility infrastructure to limit the footprint of infrastructure to existing rights-of-way and corridors. This assists the military indirectly by minimizing the impact of potential vertical obstructions in new areas located under the NAFEC MOAs and MTRs. This RMP does not provide guidance for agencies and developers to coordinate with the military in the siting of these projects to minimize or prevent vertical obstructions associated with military training operations.

### Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan was developed to protect the California Desert's natural environment including species within the planning area. The plan identifies potential renewable energy development issues that could impact military training operations, including:

- Wind energy development on vertical obstruction.
- Solar power towers on vertical obstruction.
- Presence of telecommunication, solar, wind, and meteorological towers in the line-of-sight of communication waves, such as microwave line-of-sight on vertical obstructions and / or an interference to communication frequencies.

The plan acknowledges issues associated with alternative energy development and the military missions in the planning area and recognizes the need to coordinate and communicate with the DOD when siting renewable energy development projects but provides minimal guidance in addressing the impacts of renewable energy development on military training operations. This guidance only references areas where DOD may require incorporation of buffers in conjunction with any renewable energy development in areas where military training and operations occur.

### Imperial County General Plan

Imperial County establishes policy for renewable energy development in its Geothermal / Alternative Energy Development Element of its General Plan including the implementation of provisions in the Six Southwestern RMP. The county is the designated lead agency by the California State Department for Conservation Division of Oil, Gas, and Geothermal Resources for regulating and issuing geothermal permits for the purposes of exploration and development. Pursuant to state authority, the county is charged with conducting any environmental reports associated with such projects. In compliance with the California Environmental Quality Act (CEQA), the project must meet CEQA standards prior to the county issuance of permits for renewable energy development in unincorporated portions of the county.

As the lead agency for regulating and issuing geothermal energy permits within unincorporated Imperial County, the county must ensure that all permits have been secured from the regulating agencies including, but not limited to:

- State agencies such as California Energy Commission, i.e. for construction of power plants with a capacity of 50MW (net) or greater.
- Public Utilities Commission.
- State and Regional Water Resources Control Board.
- Imperial County Air Pollution Control District (APCD).

Due to the numerous agencies that must review and regulate renewable energy development projects, the county has a six-month review period before a project can be fully permitted for construction and production. This review period is reduced to between one and six months if the project is strictly for exploration.

To control the siting and expansion of large-scale renewable energy projects, the county guides renewable energy developers to utilize existing transmission and joint use corridors for new and expanding projects. These guidelines are in the Geothermal / Alternative Energy Development Element of the general plan:

**Goal 5.** When planning and designing transmission lines, the County will consider impacts to agricultural lands, wildlife, and natural desert landscape.

**Objective 5.1.** Require all major transmission lines to be located in designated federal and IID corridors or other energy facility corridors such as those owned by investor owned utilities and merchant power companies.

**Objective 5.2.** Design lines for minimum impacts on agriculture, wildlife, urban areas, and recreational activities.

**Objective 5.3.** Construct transmission lines in accordance with this Element.

**Objective 5.4.** Design transmission lines to be joint use with transportation and other infrastructure corridors within or external to the County.

Because the county is the lead agency for renewable energy development projects generating up to 50 MW, this guidance provides the development community with expectations for project development.

### Imperial County Land Use Ordinance

The County implements the goals and objectives through the Land Use Ordinance (LUO), specifically, the Geothermal Overlay Zone. The Imperial County LUO prescribes the requirements for issuing permits to developers.

While the LUO requires the siting of major geothermal development projects within the Geothermal Overlay Zone, the LUO also states that minor or exploratory geothermal projects may be located in any zone through approval of a conditional use permit. This overlay zone is based upon the location of an identified viable geothermal resource.

| Issue VO-2 | **Height regulations are not adequate to protect flight operations.** Current Imperial County zoning regulations do not reflect elevations appropriate for imaginary surfaces guidance. BLM planning guidelines also do not provide guidance on appropriate height. |
|---|---|

Height regulations relative to ground elevation are a concern for mission compatibility. The terrain is characterized by desert and agricultural land of varying elevations. Elevation variations create an additional review consideration when determining a vertical obstruction based on the imaginary surfaces associated with an active airfield and the surface floors of the MTRs and the SUAs.

Terrain elevation is a factor approximately 8.5 miles outward in all directions from the runway based upon the imaginary surfaces associated with the NAFEC airfield for determining a vertical obstruction.

The surface floors for several MTRs are at 200 feet and 300 feet ground floor level, respectively. The SUA for R-2510A and R-2512 are at surface floor. Height regulations do not currently consider this surface floor for the MTRs and SUAs within the county. There is concern for development adjacent or proximate to these military training areas since aircraft can fly very close to the ground in MTRs and SUAs. Tall structures and development of any type are subject to noise and vibration impacts from aircraft flying at lower altitudes which present a safety hazard for pilots navigating through obstructed airspace and pose an increased risk to the public.

Existing development is located within the surface floor MTR in the western portion of the county. Due to this development, the Navy modified their training patterns relative to this area. While the majority of the county is undeveloped, development pressures are a concern, especially alternative energy development projects under the surface floor MTRs and SUAs. This would adversely impact the NAFEC training mission.

The AICUZ study recommends slope (horizontal and vertical distance) calculations to establish appropriate building and structure heights in the vicinity of an airfield within each imaginary surface boundary to prevent the creation of vertical obstructions and preserve navigable airspace.

## EXISTING TOOLS

### Six Southwestern State for Solar Energy Development Resource Management Plan

The Six Southwestern State for Solar Energy Development RMP establishes policy for identification of suitable public lands viable for renewable energy development projects, but does not include provisions for height restrictions of tracking or cooling towers associated with solar energy and geothermal energy projects. The RMP expressly states that developers must coordinate with all pertinent agencies across all levels of government including the DOD Siting Clearinghouse and local agencies.

### Imperial County Land Use Ordinance

The Imperial County LUO regulates building and structure height within each zoning district in unincorporated areas. Table 5-10 provides an overview of the existing height regulations. This table includes a compliance analysis with FAA standards because the County's LUO does not consider varying terrain elevations. These height regulations are all conditionally compatible if located within MTRs and SUAs with a ground floor level for very low altitude military training and operations.

**Table 5-10. Imperial County Land Use Ordinance Height Restrictions and Compatibility Analysis with FAA Standards**

| Zoning District | Height Restrictions | Compatibility with FAA Standards |
|---|---|---|
| R-1, R-2 | 3 stories or 40 feet; Detached structures: 2 stories or 25 feet; Incidental antennae: 60 feet | Compatible with conditions |
| R-3 | 6 stories or 80 feet; Detached structures: 2 stories or 25 feet; Incidental antennae: 60 feet | Compatible with conditions |
| R-4 | 2 stories or 30 feet; Incidental antennae: 60 feet | Compatible with conditions |
| A-A, A-1, A-2, A-2-R, A-3, AM-1, AM-2 | None specified; None specified; None specified; 30 feet; 40 feet; 60 feet; 80 feet; 100 feet; 120 feet based on zone district | Compatible with conditions |
| C-1, C-2, C-3 | 50 feet; 75 feet; 75 feet | Compatible with conditions |
| M-1, M-2, M-3 | None specified; none specified; 80 feet | Compatible with conditions |
| S-1, S-2 | None specified | Compatible with conditions |
| G/S | None specified | Compatible with conditions |

| Issue VO-3 | **Communications Towers Outside Scenic Corridors.** Current zoning regulations in Imperial County allow for telecommunications tower heights up to 300 feet along scenic corridors. |
|---|---|

Zoning regulations for telecommunications towers are potential incompatibility with NAFEC and civilian aviation activities. The zoning regulations currently allow towers up to a maximum height of 300 feet outside of the county's scenic corridors by approval of a CUP and variance. The CUP and variance allow for a 20-foot height bonus for each collocated operator on wireless communication tower up to the maximum permitted height. While collocating wireless communications operations reduces the overall number of towers, the maximum height of 300 feet can create a vertical obstruction for both military and civilian aviation operations, particularly if towers are located within the military operating areas where operations occur between ground level and 300 feet.

Since a vertical obstruction can be classified as an obstruction when it reaches 200 feet above ground level or above the runway elevation, whichever is higher, the 300-foot allowable maximum height can create violations of the FAA regulations.

The zoning regulation is a concern since designated scenic corridors in Imperial County traverse the SUA and are within NAFEC training range areas.

## EXISTING TOOLS

### Imperial County General Plan

The Imperial County General Plan has identified the scenic corridors as the following routes:

- *"**Interstate 8 (I-8).** The initial segment for future Scenic Highway Designation status lies between the San Diego County line and its junction with State Route 98. This segment known as Mountain Springs Grade has a long, rapid elevation change, remarkable rock and boulder scenery, and plant life variations.*
- ***State Route 78.** The portion of SR-78 from the junction with SR-86 to the San Diego County line is eligible for future Scenic Highway Designation. The area is considered scenic because of its desert characteristics and view of Salton Sea.*

- ***State Route 111.*** *SR-111 travels along the northeast shore of the Salton Sea and is eligible for future Scenic Highway Designation from Bombay Beach to the County line. The drive along this body of water is a study in primitive beauty and an interesting and startling anomaly. The contrast between the flat, wide Salton Sea with its sandy beach and the rugged rise of the Chocolate Mountains has many variations. The panoramic view of the opposite (southwest) shore and its backdrop of mountains is also a sight of pre-historic beauty."*

### Imperial County Land Use Ordinance

The Imperial County LUO permits telecommunication facilities up to 300 feet using 20-foot bonuses per collocated users. Title 9, Division 24 of the Imperial County LUO allows for the following heights outside of the scenic corridors:

- **E. 3.** Outside of the 3/4-mile range of a designated scenic corridor, communication facility, except an exempt facility, may exceed 120 feet. A bonus of 20 additional feet per facility, up to a maximum height of 300 feet, is permissible for operators co-locating on a single facility.

Figure 5-15 illustrates the designated scenic corridors in Imperial County within NAFEC training range operational areas including the bounded area (¾ mile distance from either side of the scenic corridor) where the Imperial County LUO regulates the heights of telecommunications towers.

## 5. 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.*

It was expressed during the stakeholder interviews for the JLUS, that when and if the mission at NAFEC changes or is expanded, additional personnel and those with dependents may find the availability of suitable, nearby affordable housing difficult.

| Issue HA-1 | **Providing future housing demand information to local jurisdictions in timely manner.** Significant changes in housing demand by NAF El Centro need to be clearly defined to enable local communities to plan accordingly. |
|---|---|

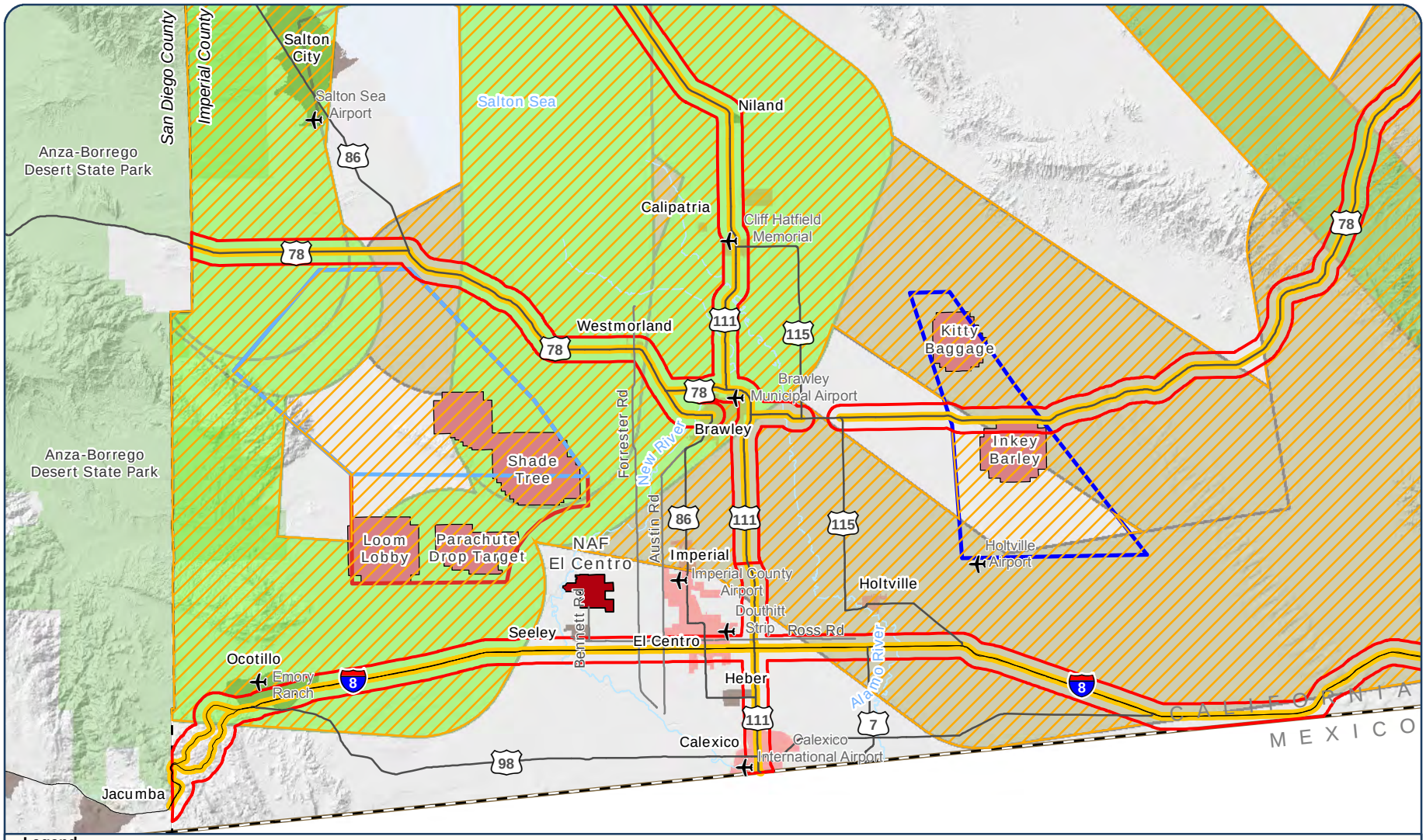
Housing needs for employees, full-time military personnel and those stationed temporarily at the base are adequately accommodated by the base and local communities. A future mission change with a large number of personnel requirements, could potentially affect housing availability.

In 2012, NAFEC had an average of 1,305 personnel on board at any given time. Of these, 216 were civilian employees, 259 were contractors, and 830 were service members stationed on-base, though temporary increases are not reflected in these numbers. As many as 13,886 transient service members and 978 transient contractors are employed at the base in a year with over 1,200 of these in any one month. These numbers are increasing since 2009.

NAFEC provides housing accommodations for service personnel consisting of 141 single family homes and Bachelors Quarters - Bachelor Officer Housing (BOH) and Bachelor Enlisted Housing (BEH). The BOH and BEH facilities can accommodate up to 855 personnel with 162 units for permanent, non-transient personnel. The demand for full-time military and non-military personnel fluctuates but is adequately addressed by the existing inventory of homes available in the surrounding communities. The type and scope of mission changes at NAFEC are unknown creating a concern whether the current housing stock is adequate to absorb the added permanent personnel and their dependents.

### EXISTING TOOLS

The California Government Code Section 65580-66589 requires local communities to address housing needs within their General Plan, Housing Element.




Sources: NAF El Centro, 2013; Caltrans, 2013.

**Figure 5-15**
**Vertical Obstruction Potential along Scenic Corridors**

*Fig_5-15_NAFEC_JLUS_VertObs_20140218_JKC.pdf*

## Imperial County General Plan

The Imperial County Housing Element was prepared in 2008 and is currently being updated. The existing Housing Element identifies adequate residential sites for a variety of housing types and income levels. While the majority of housing programs identified in the element address low and moderate-income housing needs, programs also attempt to focus on the planned residential development approach as a method to achieve innovative configurations and reduce infrastructure costs. According to the Housing Element, this effort has become successful through the provision of incentives such as density bonuses for multi-family residential in a rural county. While the element identifies various programs to encourage the development of housing for extremely low, very low, low and moderate-income persons as a percentage of all new housing built, it does not consider transient housing needs generated by NAFEC.

Housing vacancy trends are an indicator of supply and demand. If housing demand is greater than the supply, the vacancy rate is likely to be low and the price of housing increases. According to the 2007-2011 American Community Survey conducted for the California Department of Finance, there are an estimated 55,688 total housing units in Imperial County: 48,117 occupied units and 7,551 vacant units with a vacancy rate of 13.6 percent. The rental vacancy rate is estimated to be 5.4%. Based on these figures, the quantity of housing is sufficient to absorb modest increases in NAFEC personnel from potential mission enhancements.

## City of El Centro General Plan

The city of El Centro General Plan Housing Element was recently updated and adopted in September 2013 and provides the goals, objectives, and policies that address the housing needs of the city and the programs for implementation. These programs primarily address the need to construct affordable housing to serve extremely low, very low, low, moderately low, and moderate-income residents. The element documents the trends impacting the city's housing stock and the development of new housing:

- A continued demand for subsidized rental units.
- A continued demand for housing homeless persons and those threatened with homelessness.
- A demand for large family multi-family units.
- A tight supply of appropriately zoned vacant land.
- An increase in difficulty in realizing the potential for redevelopment opportunities.
- El Centro increases (long term) the cost of housing in the region (in the past two years, El Centro as elsewhere in the state has experienced decreasing housing and land values).

According to the 2007-2011 American Community Survey there are an estimated 14,527 housing units in the City of El Centro: 13,092 occupied housing units and 1,435 vacant units with a vacancy rate of 9.9 percent. The rental vacancy rate is estimated to be 5.4%. The quantity of housing is sufficient to absorb modest increases in NAFEC personnel from potential mission enhancements.

While the City established a goal of constructing 100 affordable housing units (five, extremely low income, 25 very low income, 30 low income, and 40 moderate income units) between the 2013-21 planning horizon; the city generally acknowledges the transient nature of the military personnel at NAFEC but does not consider transient housing needs generated by NAFEC.

## City of Imperial General Plan

The city of Imperial recently completed an update to its Housing Element for the 2008-2014 planning period. The element analyzes affordable housing and defines seven goals, policies, and actions to implement affordable housing efforts. It states that 1,016 affordable units are to be constructed or rehabilitated or otherwise price supported during the 2008-14 planning period. The Housing Element does not address transient housing needs generated by NAFEC.

According to a 2007-2011 American Community Survey there are an estimated 4,775 housing units in the city: 4,409 occupied housing units and 366 vacant units with a vacancy rate of 7.7 percent. The rental vacancy rate is estimated to be 0.7%. While the vacancy rate in the city of Imperial is very low, the quantity of housing can absorb modest increases in NAFEC personnel from potential mission enhancements.

The housing supply in communities surrounding NAFEC appears to be adequate and reasonably priced based on available data. The current regional growth rate suggests that the existing housing stock (and the current pace of construction) will continue to accommodate the projected population growth anticipated in the region. Mission changes or enhancements that create large numbers of additional personnel may create upward pressure on prices and rent.

*Sources: Imperial County General Plan, Housing Element, 2008-14; City of El Centro General Plan, Housing Element, 2009; City of Imperial General Plan, Housing Element, 1992; NAFEC Master Plan, Draft Existing Conditions, 2012; California Department of Finance, Demographic Division, ACS 2007-2011.*

## 6. Infrastructure Extensions

*Infrastructure refers to public facilities and services such as sewers, water, electric, and roadways that are required to support development (existing and proposed).*

Public facilities and services should be appropriate for the type of urban or rural development they serve, but also limited to the existing and planned needs and requirements of the area. For example, the provision of a safe transportation system, including all modes of transportation (automobile, mass transit, railway, highway, bicycle, pedestrian, air, water, etc.), is an important infrastructure component. Adequate transportation infrastructure contributes to local, regional, and state accessibility.

Infrastructure plays an important role in land use compatibility. Infrastructure can enhance the operations of an installation and community by providing needed services, such as sanitary sewer treatment and transportation systems. Conversely, infrastructure can create encroachment issues if expanded without consideration of the consequences of future development. The extension or expansion of community infrastructure to a military installation or areas proximate to an installation has the potential to induce growth, potentially resulting in incompatible uses and conflicts between a military mission and communities. Within comprehensive planning, infrastructure extensions can serve as a mechanism to guide development into appropriate areas, protect sensitive land uses, and improve opportunities for compatibility between community land uses and military missions.

### COMPATIBILITY ASSESSMENT

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|---|---|
| **Issue IE-1** | **Potential extension of electrical, wastewater or water services to installation.** The extension of additional / new services to the installation to supplement (add redundant capacity or access) or replace current facilities could extend infrastructure into undeveloped areas, creating induce growth near the installation. |

There is a concern that infrastructure extensions or enhancement to the base that provide redundant sources of energy and water in times of emergency can create opportunities for multiple permits to enable additional users of the infrastructure. The additional permits could potentially encourage growth west of Austin Road and create incompatible development near NAFEC and its associated ranges.

The Imperial Irrigation District (IID) is the electric and water agency for Imperial County and provides for the production, storage, and efficient distribution of energy to residents. The IID is responsible for the infrastructure extension to the base but the project proponent is responsible for funding. If NAFEC determines desires to connect to IID's infrastructure, an agreement would be required between the base and the agency acknowledging that NAFEC will fund the improvement.

### EXISTING TOOLS

#### Imperial County General Plan

The Imperial County General Plan's Geothermal-Transmission Element establishes policy for extension of infrastructure in the County. While the element addresses the impacts of locating transmission line corridors adjacent to agricultural lands, wildlife, and other natural landscapes, the County does not directly address impacts of siting transmission line corridors proximate to the NAFEC military installation. The County General Plan Element states:

**Goal 5.** When planning and designing transmission lines, the County will consider impacts to agricultural lands, wildlife, and the natural desert landscape.

**Objective 5.4.** Design transmission lines to be joint use with transportation and other infrastructure corridors within or external to the County.

The County has developed programs that assist in encouraging and enforcing to implement this goal and objective. These programs include general coordination procedures with other governmental agencies and power distribution agencies, periodic review of transmission plans with the IID to ensure adequacy of plans, and the development of and encouraged joint-use of transmission corridors. Joint-use transmission corridors encourage any extension of electrical and water infrastructure to occur where existing infrastructure is located, such as major highways and roadways. The transportation corridor is considered a joint-use infrastructure corridor if electrical and water infrastructure is collocated. The County encourages the concept of joint-use transmission corridors in long-range planning.

### City of El Centro General Plan

In the city of El Centro General Plan Public Facilities Element, the city provides for water treatment and distribution services to land uses within the city limits and to some areas in unincorporated Imperial County. The water treatment plant was recently upgraded enabling the infrastructure to serve a build-out population of 80,000. The distribution system for the city has capacity for a population of 80,000. As of 2010, the City's population was 42,598 with a 1.5 percent annual increase. At this annual rate of change, the city will have adequate infrastructure capacity to service its projected population through 2020.

While the city of El Centro has some ability to expand infrastructure, the General Plan does not contain policies that encourage coordination of infrastructure planning with NAFEC should proposed infrastructure extensions occur within their jurisdiction. One city policy for the sewer system can potentially encourage incompatible development outside the existing service area:

**Policy 9.2.** Allow new development to occur outside the existing service area only if new sewer services will be provided by the developer or City.

If a developer agrees to fund sewer improvements, without adequate policy and regulatory controls to coordinate expansion, the infrastructure can catalyze growth in areas where military operations may be impacted.

### City of Imperial General Plan

The city of Imperial General Plan Public Facilities Element establishes provisions for supplying adequate water and sanitary sewer services to its residents. The plan states that the extension of water service facilities should not exceed one-half mile across an undeveloped area. The City's policy for the extension of sanitary sewer services discourages service extensions in undeveloped areas, unless otherwise deemed necessary. These policies reduce the risk of uncontrolled infrastructure extensions by developers.

| Issue IE-2 | **Forrester Road expansion between Worthington Road and Highway 8 could increase development pressure east of the installation.** The additional roadway capacity and changing of traffic patterns could increase development pressure in this area. |
|---|---|

## COMPATIBILITY ASSESSMENT

Forrester Road is a north-south prime arterial in Imperial County. The roadway provides an alternate route for commercial traffic originating from the Mexico border to California and serves as an inter-regional corridor for trade traffic. Improvements are planned for various segments of the roadway. This expansion is a concern for the roadway segment near NAFEC that begins at Worthington Road and runs north and south to I-8. Significant improvements to this segment can potentially induce development in this area, and encourage urban development near the installation.

## EXISTING TOOLS

### Forrester Road Interregional Corridor Study

The Forrester Road Interregional Corridor Study provides a comprehensive analysis of the roadway existing conditions based on level of service (LOS) for vehicle type and population counts. In addition, the study provides an analysis of LOS based on projected populations developed by the California Department of Transportation (CALTRANS). The study also considers the impacts of proposed developments by tabulating increases in the traffic

volume for key intersections and roadway segments, intersections and segments most likely impacted by traffic increases.

For the purposes of this JLUS study, the area of concern includes five roadway areas:

- Worthington Road and Evan Hewes Highway.
- Evan Hewes Highway and Ross Road.
- Ross Road and I-8.
- I-8 westbound (WB) and eastbound (EB) ramps.
- South of I-8 EB ramp.

The existing infrastructure conditions associated with Forrester Road in the area of concern are:

- Intersection at Worthington Road and Forrester Road consists of two through lanes, and two-way stop running north and south on Forrester Road.
- Segment between Worthington Road and Evan Hewes Highway consists of two through lanes.
- Intersection at Evan Hewes Highway and Forrester Road consists of two through lanes and a four-way stop.
- Segment between Evan Hewes Highway and Ross Road consists of two through lanes.
- Intersection at Ross Road and Forrester Road consists of two through lanes and two-way stop running north and south on Forrester Road.
- Segment between Ross Road and I-8 is composed of two through lanes.
- Segment / Intersection at Forrester Road and WB ramp from I-8 consists of one-way stop.
- Segment / Intersection at Forrester Road and EB ramp south of I-8 consists of one-way stop.

While improving these areas of Forrester Road would be beneficial to users of the roadway, proposed development in the overall area could potentially create incompatible roadway issues such as capacity problems. This study analyzed the proposed developments along this corridor to measure the future potential impact to this roadway.

Table 5-11 outlines the average daily traffic (ADT) increases on Forrester Road based on proposed development. With the additional traffic associated with the proposed developments, the ADT 2015 projection jumped to more than six times the current traffic at the EB ramp South of I-8 in the most extreme scenario. The segment least impacted by proposed development is projected to increase of a little more than 30 percent; this segment is located between Worthington Road and Evan Hewes Highway. By 2035, the projected ADT significantly increases correlated with population and traffic increases; the most severely impacted segment is the EB ramp south of I-8 with a traffic increase of over 100 percent.

**Table 5-11. Traffic Count Increases for Forrester Road at Various Segments in the Roadway.**

| Forrester Road Segment of Concern | Current Average Daily Traffic (ADT) Counts | ADT Counts Considering Proposed Developments (2015) | ADT Counts Considering Proposed Developments (2035) |
|---|---|---|---|
| Worthington Road between Evan Hewes Highway | 9,900 | 13,800 | 21,900 |
| Evan Hewes Highway between Ross Road | 9,300 | 12,700 | 20,700 |
| Ross Road between I-8 | 10,600 | 15,000 | 23,900 |
| I-8 WB ramps between EB ramps | 5,200 | 14,600 | 21,000 |
| South of I-8 EB ramps | 1,300 | 8,800 | 10,800 |

*Source: Forrester Road Interregional Corridor Study, 2009. Southern California Association of Governments.*

Due to the projected growth of the region over the next 20 years, Forrester Road will experience significant increases in traffic and use. Without improvements to this roadway the existing roadway will operate at a LOS F which is an unacceptable rating for ease of mobility and safety.

| Issue IE-3 | **Concern about Evan Hewes Highway expansion between Silsbee Road and Austin Road.** This infrastructure extension could increase development and potentially incompatible development with the NAF El Centro mission. This expansion could become a catalyst for development west of Austin Road, increasing the risk for incompatible development within and / or near military training ranges and the installation. |
|---|---|

Improvements are planned for Evan Hewes Highway between Silsbee and Austin Roads. Silsbee Road is located one block east of the NAFEC and Austin Road is located further east of NAFEC. It is the western boundary for the cities of El Centro and Imperial. Segment improvements for Evan Hewes Highway between Silsbee and Austin Roads include, but are not limited to:

- Resurfacing
- Resurfacing with conventional asphalt at intersections
- Paint striping and signage

While these improvements should enhance mobility and access along this roadway segment, they are not likely to encourage major development that could act as a catalyst for development west of Austin Road.

*Source: Regional Transportation Plan 2012-2035, Southern California Association of Governments, 2012.*

Due to the nature of this project and its completion, this issue should be considered addressed without the need for additional evaluation.

| Issue IE-4 | **Concern about Austin Road expansion from McCabe Road to SR-78 / 86.** A long-term project to expand Austin Road to a six-lane primary arterial road has been identified. This expansion could potentially spur development in areas east of NAF El Centro affecting the training mission. |
|---|---|

A long-range plan to expand Austin Road to a six-lane primary arterial road has been identified. Concern for this roadway expansion is based on the notion that infrastructure expansion will induce development. This expansion is proposed beyond the horizon year 2022, but expands Austin Road to a six-lane prime arterial roadway from the segment beginning at McCabe Road extending to SR 86. This roadway segment is currently a two-lane roadway.

Adding four vehicle lanes would not only increase mobility and access relative to incoming traffic from Mexico, but, combined with the Forrester Road expansion, increase the probability for development between Forrester and Austin Roads. This potential development could catalyze development west of Austin Road and result in incompatible land uses with the NAFEC mission depending on the type of and location of development.

## 7. Anti-Terrorism / Force Protection

*AT/FP relates to the safety of personnel, facilities, and information on an installation from outside threats.*

Security risks and trespassing can present immediate compatibility concerns for installations. Due to current world conditions and recent events, military installations are required to meet more restrictive standards to comply with AT/FP directives. These standards include increased security checks at installation gates and physical changes, such as new gate / entry designs. Additional emphasis on credential and vehicle checks can create capacity and queuing issues at access control points that are inadequate to support the high volume of vehicles requiring access on a daily basis. Reduced processing throughput time can create circulation issues and general safety concerns external to the installation and within local communities.

| Issue AT-1 | **Concern over the location of new development near the fenceline.** The base is required to comply with the new ATFP guidelines including additional setbacks and barriers. However, these guidelines do not address potential issues relative to development outside the base, i.e. development outside the fence on at higher elevations can allow views on installation activities posing an operational threat to national security. |
|---|---|

Imperial County is an ideal local for alternative energy development due to abundance of resources based on its geographic location and rich soils. These resources, siting of new development - alternative energy and associated residential development, and the county's proximity to the Calexico port of entry which serves as a pathway for the distribution of food stuffs and other commodities throughout the U.S, create the potential for regional development. In addition to Calexico serving as a hub for commodities, this area serves as passage point for hundreds of workers from Mexico to Imperial County during harvest seasons. The individuals associated with commodities distribution into the U.S. and the influx of persons into Imperial County can increase populations within the county.

Proximity to Calexico can increase development for various types of businesses, homes, and retail and recreational uses that potentially result in incompatibilities near the NAFEC and its associated ranges. NAFEC is located approximately 20 miles north-northwest of Calexico. The main roadways used for distribution of goods from Mexico to the U.S. include:

- US Highway 8
- SR 111
- SR 86

These roadways traverse the NAFEC ranges in northern Imperial County. The manufacturing and agricultural industries, for which Imperial County and Calexico are known for, provide the opportunity for increased development in the area of the installation and ranges. The agriculture and manufacturing businesses, proposed and planned projects within unincorporated Imperial County have included locations near ranges. There are recreational sites administered and managed by BLM located

adjacent or proximate to NAFEC targets and ranges. These opportunities and multiple uses cause concern near the fence lines.

The U.S. Navy is required by the new anti-terrorism force protection (AT/FP) regulations to incorporate adequate setbacks and barriers inside the fence, on the installation. However, these new regulations do not identify recommended compatibility planning guidelines outside the fence line within communities. There are no recommended land uses associated with the security of installation borders. The absence of recommended land uses and guidelines is a challenge for communities to plan compatibly near military installations and ranges.

## 8. Noise

*The total noise associated with an existing environment (built or natural) and usually comprising sounds from many sources, both near and far, is referred to as ambient noise.*

Due to the technical nature of this resource topic and its importance to the JLUS process, this section provides a discussion of the characteristics of sound and the modeling process used to evaluate noise impacts.

### Characteristics of Sound

It is important to understand that there is no single perfect way of measuring sound, due to variations used by different entities when conducting sound studies or sound modeling. Sound is characterized by various parameters that include the oscillation rate of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary by over one trillion times within the range of human hearing, a logarithmic loudness scale, i.e. the dB scale, is used to present sound intensity levels in a convenient format.

The human ear is not equally sensitive to all frequencies within the entire spectrum, so noise measurements are weighted more heavily within those frequencies of maximum human sensitivity in a process called “A-weighting” written as dBA. The human ear can detect changes in sound levels of approximately 3-dBA under normal conditions. Changes of 1 to 3-dBA are typically noticeable under controlled conditions, while changes of less than 1dBA are only discernible under controlled, extremely quiet conditions.

A change of 5-dBA is typically noticeable to the general public in an outdoor environment. Figure 5-16 summarizes typical A-weighted sound levels for a range of indoor and outdoor activities.

Environmental noise fluctuates over time. While some noise fluctuations are minor, others can be substantial. These fluctuations include regular and random patterns, how fast the noise fluctuates, and the amount of variation. Weather patterns can have a strong effect on how far sound travels and how loud it is. Certain weather events can change the consistency of the air and either cause sound to travel further and be louder or reduce the distance traveled and the level at which the sound can be heard. Temperature and wind velocity are prime examples of factors that can affect sound travel. Sound tends to travel further in cold temperatures. Specific combinations of temperature and wind direction can create atmospheric refraction. Atmospheric refraction occurs when atmospheric conditions bend and/or focus sound waves towards some areas and away from others. When describing noise impacts, it is common to look at the average noise levels over an entire average day.

The sources of noise for the area around NAFEC include operations and training activities associated with aircraft and air-to-ground ordnance delivery associated with firing and weapons delivery on NAFEC ranges.

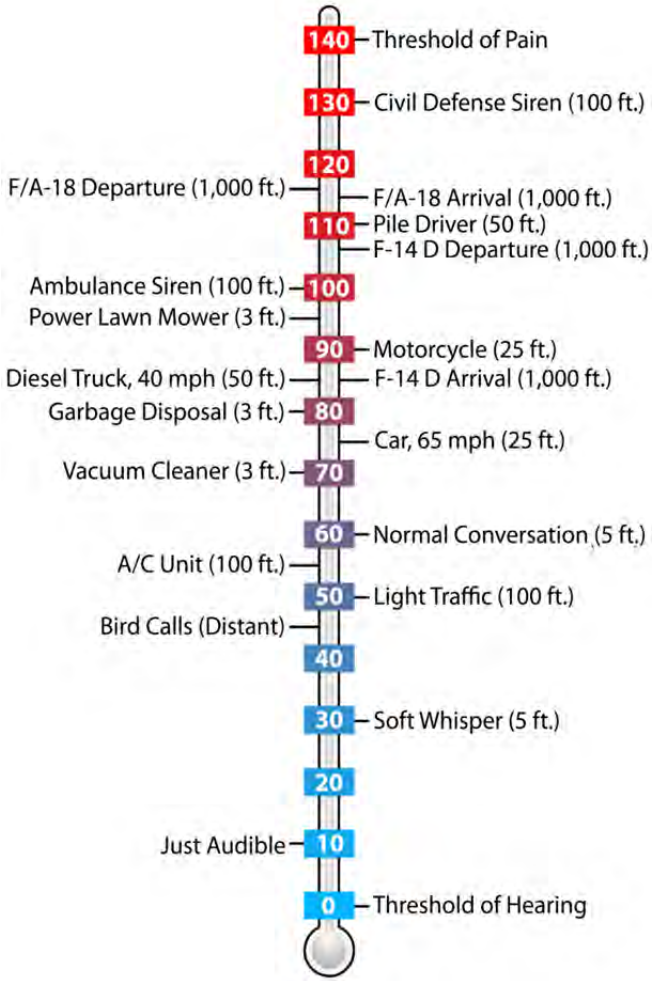



**Figure 5-16. Sound Levels Comparison in dB**

| Issue NV-1 | **Low-level helicopter flights to NAF El Centro.** Helicopters flying to NAF El Centro do not always follow established routes closely which causes noise complaints from the public. |
|---|---|

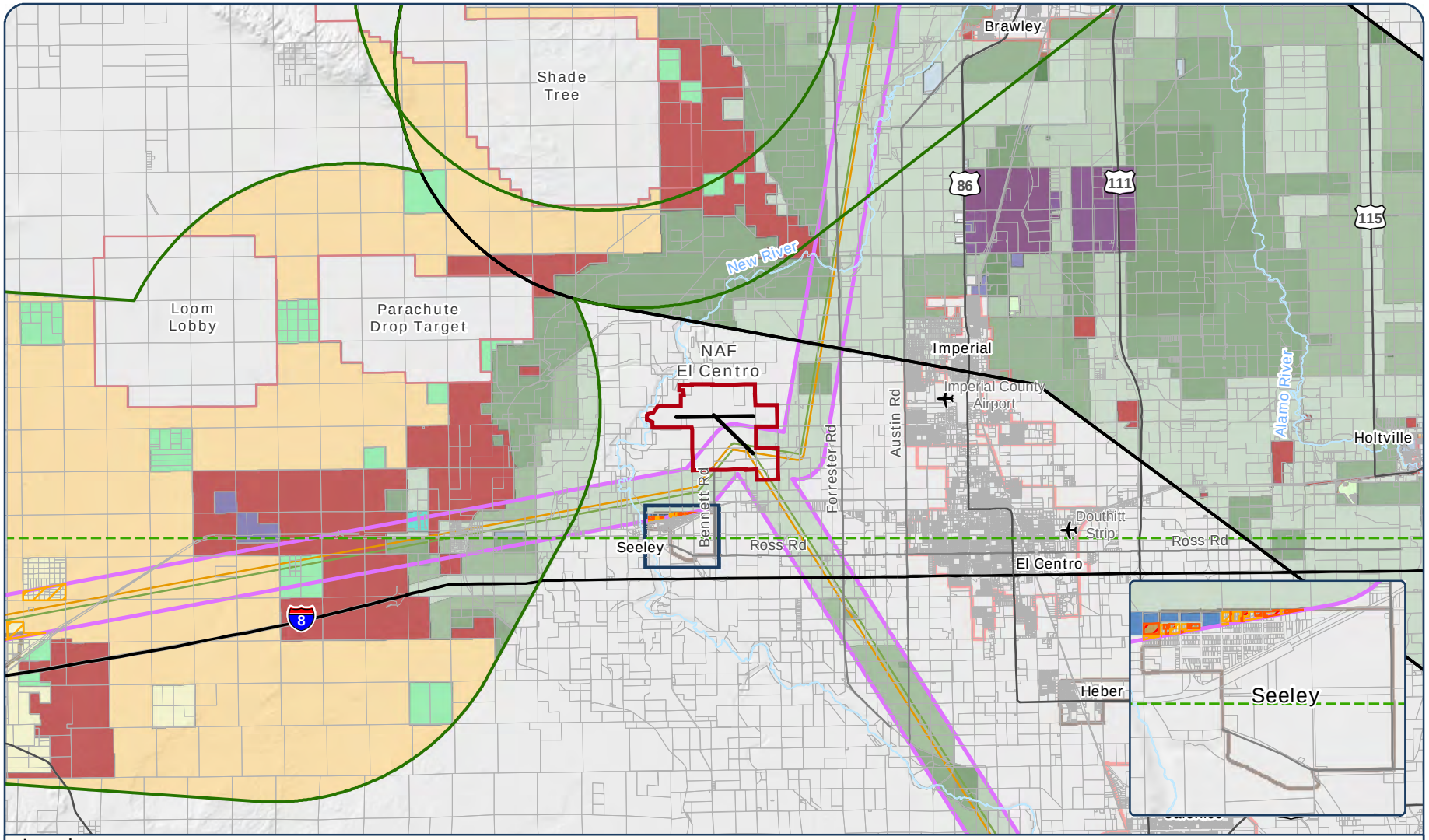
## TECHNICAL BACKGROUND

Military Training Routes (MTRs) are established training routes and must be activated to allow flight activity within the routes. These are classified into three categories, instrument flight rule (IFR), visual flight rule (VFR), and slow route (SR). While SRs are not MTRs, they are treated similarly but are typically for slower aircraft such as helicopters. Due to the maneuvers performed in these MTRs at various speeds and altitudes, the IFRs and VFRs range in width from two to 10 nautical miles (NM) from each side of the centerline. The SRs tend to be smaller in width ranging from one to five NM on either side of the centerline. This allows for sufficient space to maneuver considering other concurrent aviation operations.

## COMPATIBILITY ASSESSMENT

The primary concern with low-level helicopter flights to NAFEC is pilots imprecisely following established flight tracks and MTRs. Pilots are assumed to have about a half mile on either side of the flight track to maneuver. This mile-wide area allows flight variables to be factored into the training exercise. Flight variables (discussed below) may affect the pilot's ability to maintain a steady, plotted path. Flight tracks are typically developed and established to avoid urban development and reduce noise and vibration impacts. Deviations from the flight tracks can cause noise and vibration impacts to land uses outside prescribed flight tracks.

Pilots may need to deviate from established routes to de-conflict aviation operations (military and civilian) and avoid weather or areas that may cause greater impact to the public and pilot such as a mid-air collision. Figure 5-17 illustrates the military training routes and flight tracks used by pilots who train in aircraft and helicopters to perform their mission. This figure also shows the mile-wide buffer for each flight track and the property zoning under each flight track.




Sources: Imperial County, 2013; NAF El Centro, 2013.

*Fig_5-17_NAFEC_JLUS_Compat_LowLevelFlightTracks_Zoning_20140121_JKC.pdf*

**Figure 5-17**

## Evaluation of Zoning under Low-Level Flight Operations

Figure 5-17 also illustrates flight track for helicopter operations not associated with the NAFEC training mission including the flight corridor associated with missions at Miramar and Marine Corps Air Station (MCAS) Yuma. This flight track is not associated with an established MTR. The lack of MTR makes it difficult for the U.S. Navy to monitor any deviations from the flight track. The lack of a MTR can also present challenges for the local communities to plan compatible land uses.

This issue also relates to helicopters refueling late at night at the Imperial County Airport. These helicopters are not associated with the NAFEC training mission; Imperial County is open for refueling late into the evening hours and has a contract with a fuel supplier for general aviation and other transiting military aircraft. Given the remote location, the airport is the only regional location where helicopters can refuel generating a noise disturbance for area residents during the nighttime. These noise impacts can interrupt sleep and exacerbate temporary functional disabilities. Serious health impacts can develop from sleep interruptions over a long period of time.

Since this issue stems from general aviation aircraft and other transiting military aircraft unaffiliated with NAFEC, it is not a NAFEC JLUS issue but can still be addressed in this study.

## EXISTING TOOLS

### Imperial County General Plan, Noise Element

The Imperial County General Plan Noise Element establishes Noise Impact Zones intended to inform land use compatibility when proposed development:

- Is sited within or near one of these zones.
- Has the potential to generate noise levels that exceed the property lines of the project site.
- Has the potential to result in excessive noise that would impact sensitive receptors.

In any of these cases, the county requires (by State Code) an acoustical analysis of proposed development projects located in noise contours of 60 dB or greater. The analysis is necessary to determine if the project will be compatible with nearby noise sources including roadways and airports. The acoustical analysis must show that an interior noise level of 45 dB will be achieved through the use of appropriate construction materials.

The county also established an acceptable indoor noise level of 45 dB for single-family residences. This is a typical indoor noise level for residential uses and complies with the State of California Code of Regulations. Imperial County also established an interior noise level for noise sensitive receptors like schools, offices, and libraries, not to exceed to a level of 50 dB averaged over a one-hour period.

### Seeley Urban Area Plan

Though the county has noise compatibility provisions, they conflict with community and urban areas. Seeley is an unincorporated community in Imperial County located two miles south-southwest of the NAFEC installation and airfield. The Seeley Urban Area Plan allows for mobile homes as residential units and the county is encouraging additional mobile homes in this area. This area is proximate not only to the NAFEC airfield but also flight tracks and MTRs.

Locating mobile homes close to the airfield and the military operating routes will generate more noise complaints because mobile or manufactured homes are not typically manufactured with sound mitigating construction materials resulting in greater impacts from noise sources.

### City of El Centro General Plan, Noise Element

The City of El Centro General Plan Noise Element includes guidance for acoustical analyses and an interior noise level of 45 dB compliant with the California Code. Unlike the county, the city has established acceptable interior noise levels for single-family residential, multi-family residential, schools, hospitals, churches, libraries and other noise sensitive receptors with a maximum acceptable indoor noise level of 45 dB. This is measured on an average one-hour time period.

The City has also established goals and policies for future compatible land uses relative to noise generated from various sources:

> ***Noise Goal 2:*** *Minimize transportation related noise impacts to preserve the City's overall environment.*
>
> ***Policy 2.1:*** *Reduce transportation related noise impacts to sensitive land uses through the use of noise control measures.*
>
> ***Policy 2.2:*** *Establish and maintain truck routes away from noise sensitive receptors.*
>
> ***Policy 2.3:*** *Incorporate sound-reduction design in development projects impacted by transportation related noise.*
>
> ***Policy 2.7:*** *Continue to participate in the airport land use plan revisions for existing airport facilities and operations, future airports, and airport expansions to ensure that appropriate noise mitigation measures are implemented.*
>
> ***Noise Goal 3:*** *Minimize non-transportation related noise impacts to preserve the City's overall environment.*
>
> ***Policy 3.1:*** *Reduce the impacts of noise producing land uses and activities on noise sensitive land uses.*
>
> ***Policy 3.2:*** *Incorporate sound-reduction design in new construction or rehabilitation projects impacted by non-transportation related noise.*
>
> ***Policy 3.3:*** *Require mitigation measures to ensure that noise resulting from public and private construction projects is reduced to an acceptable level.*

The City of El Centro identifies noise contours for roadways. This helps developers and landowners know the location of their property relative to potential noise impacts from roadways.

The city identifies a 55 dB / CNEL noise impact zone associated with the Imperial County Airport which encompasses a small portion of the northern part of the city where impacts are limited to the Union Pacific Railroad.

## City of Imperial General Plan, Noise Element

The City of Imperial established an interior noise level of 45 dB / CNEL for single- and multi-family residences located within the 60 dB / CNEL noise contour. Projects in this noise contour are required to conduct an acoustical analysis and structures must incorporate construction materials mitigating noise to a 45 dB interior noise level.

The City of Imperial established acceptable noise levels for noise sources associated with railroad and airport activities. The General Plan Noise Element identifies noise sensitive land uses and the effects of noise on humans. The element also includes policy for compatible land uses relative to noise sources and includes policy regarding sound attenuation measures:

**Objective 1**

**Policy 1 A.** 60 dBA CNEL is established as the acceptable outdoor noise exposure level for rural and single family residential areas.

**Policy 1 B.** 65 dBA CNEL is established as the acceptable outdoor noise exposure level for multiple-family residential areas.

**Policy 1 C.** In the event that acceptable outdoor noise exposure levels cannot be attained by various noise attenuation mitigation measures, indoor noise levels shall not exceed 45 dBA CNEL.

**Policy 1 D.** 70 dBA CNEL is established as the maximum outdoor noise exposure level for schools (public and private), libraries, churches, hospitals, nursing homes, parks and recreation areas.

Interior noise levels for the uses in this section shall not exceed 40 dB and building construction shall include appropriate noise attenuation techniques to ensure this goal can be achieved.

**Objective 2**

Land use plans shall take into consideration the noise generation characteristics of various uses.

**Policy 2 B.** Any new development within the Airport Land Use Planning Area shall be limited to those uses defined as sensitive, moderately sensitive, and insensitive.

**Policy 2 E.** Where necessary because of incompatibilities, noise attenuation measures shall be required by the City to achieve the acceptable noise exposure levels.

**Objective 4**

Noise attenuation measures should be required to reduce noise to an acceptable level.

**Policy 4 A.** Where feasible, setbacks beyond the acceptable noise exposure level should be used to mitigate adverse noise conditions.

**Policy 4 B.** Parcels affected by adverse noise levels should be properly site planned to reduce noise through the following measures:

1. Uses that are compatible with higher noise levels should be located adjacent to noise generators to buffer noise from noise sensitive uses.
2. Clustering of commercial, office, or multiple family uses can reduce interior open space noise levels.

**Policy 4 C.** Architectural design in adverse noise areas should shield noise-sensitive uses through:

1. Appropriate entrance and window location;
2. Appropriate patio and balcony location;
3. Building projections and heights;
4. Internal arrangement of rooms; and
5. Location of air conditioning equipment at ground level.

**Policy 4 D.** Construction techniques should consider the following methods of noise reduction:

1. Acoustical wall design;
2. Use of dense building materials;
3. Acoustical windows (double glazed, double paned, thick and non-operable windows); and noise-tight doors, ceilings, and floors.

**Policy 4 E.** Noise barrier walls and berms shall be required where other noise attenuation measures fail to reduce the adverse noise levels.

**Policy 5 A.** The City shall maintain a community noise ordinance to resolve noise complaints; the ordinance should address the following as a minimum:

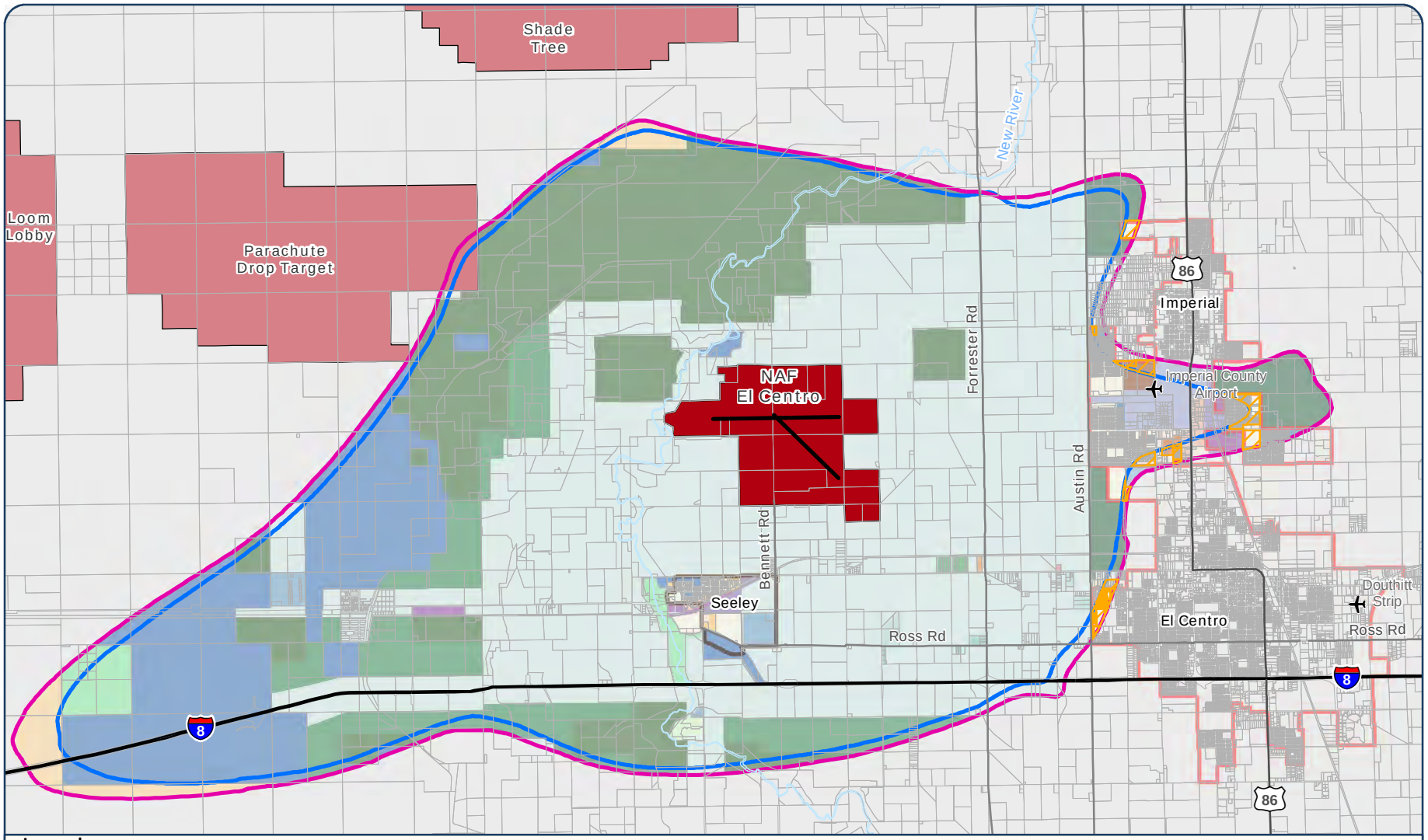
1. Prohibition of construction activities between the hours of 8:00 pm and 7:00 am; however, the following zones will have the opportunity to obtain an exemption:
   - General Industrial
   - Rail-Served Industrial
   - Public
   - Agriculture

Though these are generally compatible policies, the Noise Element does not provide a map of noise contours.

| Issue NV-2 | **Portions of unincorporated Imperial County and cities of El Centro and Imperial are inside 60+ dB CNEL noise contour.** With the release of the new NAF El Centro AICUZ study, noise contours have expanded and include areas within unincorporated communities and both cities. Current planning tools need integration of recommendations for allowed land uses and incorporation of appropriate noise mitigation. |
|---|---|

The 2010 NAFEC AICUZ report identified baseline and prospective contours. The prospective noise contours considered several variables including the potential for new aircraft and the retiring of other airframes at NAFEC.

Figure 5-18 illustrates the differences in the 60 dB / CNEL noise contour between the baseline and prospective noise contour. While there is no significant change between the northern and southern boundaries of the baseline and prospective noise contours, there is a significant difference for the approach and departure of runway 8/26 at NAFEC. The area most impacted by the prospective noise contours is the eastern boundary which includes more of the city of Imperial and Imperial County. Land uses within the prospective contours raise compatibility issues.




Sources: Imperial County, City of Imperial, City of El Centro, 2013; NAF El Centro, 2013.

*Fig_5-18_NAFEC_JLUS_Compat_CNEL_Zoning_20140114_JKC.pdf*

**Figure 5-18**

## 60dB CNEL Noise Contour Comparison and Incompatible Zoning

### NAFEC Air Installation Compatible Use Zone Report

The NAFEC AICUZ study details the noise modeling associated with air operations produced through an analysis of operations, frequency operations types, and aircraft. The AICUZ study identifies and recommends land uses compatible and incompatible in certain noise contours. These recommendations help local governments to plan land uses compatibly with the aviation operations.

The county and cities partially address noise issues through policies and regulations. However, the county and the cities have not incorporated the recommended land uses and associated interior noise levels into zoning regulations.

| | |
|---|---|
| **Issue NV-3** | **Noise associated with range operations.** Noise associated with range operations needs to be addressed as part of any future development near these areas. |

Per the Navy, the 65 dB noise contours for the targets are contained within the ranges. Therefore, there is no impact associated with noise. No further assessment is needed.

| | |
|---|---|
| **Issue NV-4** | **Lack of building code requirements for sound attenuation.** Imperial County has not adopted building code language that requires appropriate sound attenuation within AICUZ noise contours. |

Operations performed by training pilots in both high-speed and low-speed aircraft generate noise impacting surrounding land uses. It is the responsibility of the local governments including the county to protect the general welfare and safety of the public and provide for a reasonable quality of life. The Imperial County LUO does not include requirements for noise abatement relative to airport environs including the NAFEC airfield.

Both the 2007 and 2010 California Building Code Standards for residential uses include recommendations for interior wall construction to achieve a sound transmission class (STC) of less than or equal to 50 laboratory-tested or an STC of 45 field-tested. However, this is not a mandatory requirement unless adopted by ordinance.

### Imperial County Land Use Ordinance

Although Imperial County adopted the 2007 California Building Code, the county's LUO for noise abatement does not address specific noise mitigation measures for airport environs, especially those associated with the noise contours identified by the NAFEC AICUZ.

The LUO outlines applicable noise limits for most zoning districts within the county but excludes open space recreational, open space preservation, and government / special Zoning Districts from noise abatement in the LUO.

There is currently 481 acres zoned (R-1) single family residential (low-density) within the combined 65 and the 70 dB/CNEL noise contours associated with the NAFEC airfield. While the allowable sound level during the hours of 10 pm and 7 am for this district is compatible with the AICUZ, the allowable sound level during the hours of 7 am and 10 pm is incompatible. There are 71 acres of property zoned multi-family residential (R-2 through R-4) within the combined 65 and the 70 dB / CNEL noise contours. These land uses are incompatible with the recommended AICUZ guidelines because the allowable sound level is 5 - 10 dB above the recommended sound levels for these uses.

There are 83 acres of commercial uses within the combined 65 and 70 dB / CNEL noise contours generally compatible with the NAFEC AICUZ recommendations. If habitable structures are newly constructed or renovated within these zones, then a NLR between 25 dB – 30 dB should be achieved. The NLR is dependent upon the location of the structure within the noise contour and achieving adequate protection of the welfare from nuisance noise for the public.

An additional 1,974 acres of property zoned government / special land uses is within the combined 65 and 70 dB / CNEL noise contours. These districts are generally permitted within the 65 dB and 70 dB noise contours of an active airfield, but a NLR between 25 dB and 30 dB should be achieved for newly constructed or renovated buildings depending on the location of the building within the noise contours.

While Imperial County is generally compliant with the AICUZ recommendations for certain zone districts, the residential zoning districts and districts that permit noise sensitive uses such as educational institutions and nursing homes do not consider the AICUZ recommendations for sound attenuation and interior noise levels.

## 9. Vibration

*Vibration is the oscillation or motion that alternates in opposite directions and may occur as a result of an impact, explosion, noise, mechanical operation, or other environmental change. There are two types of vibration that are associated with these types of sources. Airborne vibration refers to vibration patterns that travel and are felt through the air. These vibrations travel farther and have a stronger "feel" at greater distances than ground-borne vibration. Ground-borne vibration travels through the ground, and is more likely to cause structural shaking.*

Airborne vibration is more common off-installation around NAFEC. The majority of studies conducted on airborne vibration generally identify sonic booms as the source. Vibrations from weapons firing and target-impacting ordnance can produce a similar vibration pattern. Airborne vibration can cause structural shaking and rattling of windows that can annoy or concern property owners, and in extreme cases cause structural damage.

While there were no specific issues identified with vibration at NAFEC, vibration is discussed under Noise since the impacts from noise is typically associated with vibrations from helicopter and aircraft operations.

## 10. Dust, Smoke, and Steam

*Dust results from the suspension of particulate matter in the air. Dust (and smoke) can be created by fire (controlled burns, agricultural burning, artillery exercises), ground disturbance (agricultural activities, military operations, grading), industrial activities, or other similar processes. Dust, smoke and steam are compatibility issues if sufficient in quantity to impact flight operations (such as reduced visibility or cause equipment damage).*

Particles of dust and other materials found in the air are referred to as particulate matter. The term PM-10 refers to particulate matter less than ten microns in size. At certain concentrations, this particulate size can be harmful to humans and animals if it is inhaled. The PM-10 can be caused by many activities, including driving on unpaved roads and surfaces, wind erosion from unpaved vacant lots, disruption of land from vehicle maneuvers, explosions, aircraft operations, and earth-moving activities such as construction, demolition, and grading. Its primary source is typically exhaust emitted by vehicles, wood burning, and industrial processes.

The primary dust, smoke, and steam-related issues associated with NAFEC operations result from steam produced by nearby geothermal plants. This steam can produce plumes rising into the airspace of NAFEC military training ranges. These steam plumes can potentially cause a visual impairment for pilots. Depending on the location of geothermal plants, steam plumes can interfere with infrared targeting systems resulting in communication errors between the aircraft and targets used for scoring affecting practice exercises.

## COMPATIBILITY ASSESSMENT

| Issue DS-1 | **Steam plume from geothermal plants.** Steam from cooling towers can create a visual impairment to flight operations. In addition, geothermal plants, if located in proximity to a range, can interfere with infrared targeting systems. |
|---|---|

Imperial County is an ideal setting for siting and operating geothermal plants since the geography contains the hottest, liquid-dominated resources at relatively shallow depths. The county is home to nine geothermal resource sites providing a clean alternative to fossil fuels and typically, resulting in minimal impacts on the environment and society. Figure 5-19 illustrates the County's Known Geothermal Resource Areas (KGRA), the several geothermal plants, and the MTRs and the RAs associated with the NAFEC training ranges. These military operating areas have either a surface floor or a floor of 300 ft for which military operations occur that can be impacted by steam plumes from geothermal plants.

Depending on the time of day and time of year, i.e. winter months when the air is denser steam produced can be denser, the steam produced from these geothermal plants can produce plumes extending into navigable airspace. If the plumes from these geothermal plants rise to meet or exceed the height of the MOA floor altitude, this could create a potential problem for aviation operations. Problems include visual impairment for pilots and could result in potential aircraft collisions. The steam can potentially interfere with infrared communications between aircraft and targets or control towers and impede military readiness by blocking communications systems to accurately score or misread / miscalculate an operation. When infrared communications are blocked, NAFEC must reschedule the training mission to more accurately score the operation.

## EXISTING TOOLS

### Imperial County General Plan

Imperial County identified and provided information about nine KGRAs in the General Plan Geothermal / Alternative Energy and Transmission Element based on information from a U.S. Geological Survey:

- Salton Sea
- North Brawley
- South Brawley
- East Brawley
- Heber
- East Mesa
- Dunes
- Glamis

For the exception of Heber and the Dunes, are all within the NAFEC range MTRs or RAs. The county employs policies that encourage project development in Geothermal Overlay Zones and the use of joint-use transmission corridors. Currently, all new transmission lines require a review by the county's ALUC.

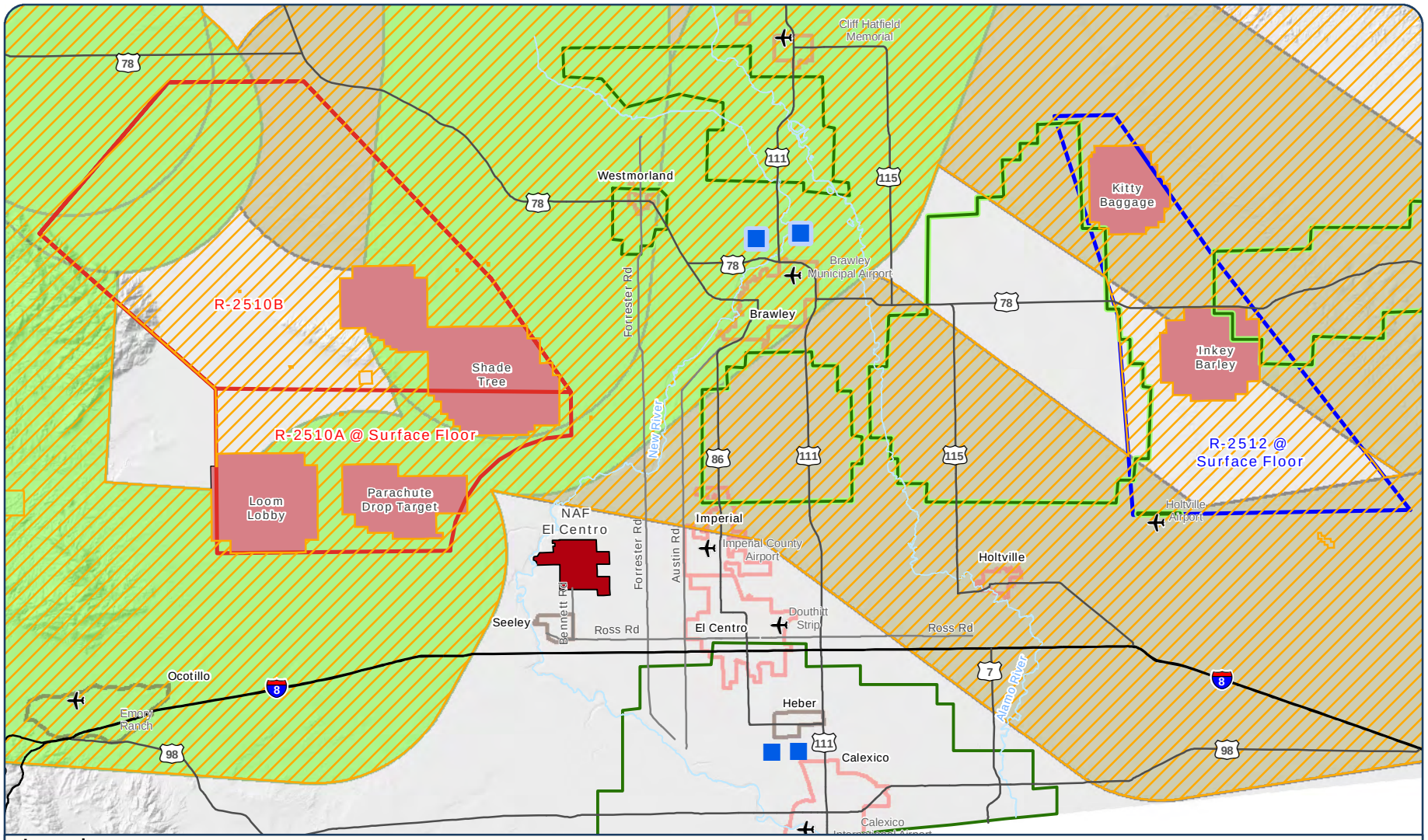
While the county's general plan encourages these joint use corridors and coordination with the ALUC and acknowledges the issues relative to geothermal projects and transmission lines siting in conjunction with the area's biological resources, the GP does not acknowledge the impacts associated with the MOA. It is worth noting that the MOA encompasses a majority of the County. The goals, objectives, and policies that specifically address the siting of geothermal projects are:

**Goal 1.** County of Imperial supports and encourages the full, orderly, and efficient development of geothermal/alternative energy resources while at the same time preserving and enhancing where possible agricultural, biological, human, and recreational resources.

**Objective 1.1.** Design for the co-location of energy facilities through the designation of "energy park" zones to increase certainty and facilitate power generation development and to provide for efficient use of land resources.

**Objective 2.3.** Utilize existing easements or rights-of-way and follow field boundaries for electric and liquid transmission lines.

**Objective 2.6.** Encourage/require alternative resource production to be in energy zoned areas to minimize off-site impacts and lessen need for more transmission corridors.




Sources: Imperial County, 2013; NAF El Centro, 2013; Imperial County, 2013 (digitized by Matrix Design Group).

**Figure 5-19**
**Steam Plume Concerns**

*Fig_5-19_NAFEC_JLUS_Steam_Plume_20140118_JKC.pdf*

**Goal 5.** When planning and designing transmission lines, the County will consider impacts to agricultural lands, wildlife, and the natural desert landscape.

**Objective 5.1.** Require all major transmission lines to be located in designated federal and IID corridors or other energy facility corridors such as those owned by investor owned utilities and merchant power companies.

**Objective 5.2.** Design lines for minimum impacts on agriculture, wildlife, urban areas, and recreational activities.

**Objective 5.3.** Construct transmission lines in accordance with this Element.

**Objective 5.4.** Design transmission lines to be joint use with transportation and other infrastructure corridors within or external to the County.

**Policy 6.** Coordinate County planning and regulation of geothermal activities with other governmental agencies as necessary.

**Policy 9.** Develop, in conjunction with IID, other utilities, merchant power companies, government agencies and the County, prospective joint use corridors. Such joint use corridors would be intended to accommodate future growth needs, provide certainty to the industry, developers and local citizens of where such transmission projects will occur, with notification of how the impacts of such facilities will be reduced.

While these goals, objectives, and policies address compatibility for biological, environmental, and social aspects, they do not directly address military compatibility.

### Imperial County Land Use Ordinance

Imperial County LUO, Title 9, Division 17 establishes the use of Geothermal Overlay Zones where geothermal activities, including exploratory wells and projects may be located. These projects are permitted by CUPs. There are certain projects that are permitted by the use of a CUP in any zone:

- Geothermal Test Facilities
- Intermediate Geothermal Projects
- Minor Geothermal Projects and Minor Geothermal Wells
- Major Exploratory Wells

The LUO provides a basis for compatibility regarding the location of these projects within the county, but does not address military compatibility.

| Issue DS-2 | **Concern about dust generated from various sources in the county including agriculture activities and military training at NAF El Centro ranges.** The NAF El Centro training mission enables pilots to train for bombing and target practice, which can produce dust from the impact of ordnance. Imperial County is designated as nonattainment for PM 2.5 and 10. Any increases in community activities that generate dust in the county and training activities at the NAF El Centro ranges could potentially impact air quality for the County. |
|---|---|

## COMPATIBILITY ASSESSMENT

Imperial County is designated as a nonattainment for PM 2.5 and 10 which affects air quality and can affect quality of life functions such as breathing. There are a variety of activities that generate dust in the county such as agriculture and construction. Dust concern is a concern for aviation and training operations and other community activities.

NAFEC conducts military training operations including bombing exercises for target practice and helicopter landing operations. While the bombing exercises are contained within targets and in the range compatibility zones (RCZs), there are infrequent incidents where ordnance could impact the ground within the RCZs. This impact generates airborne dust.

There is concern for potential increased dust generation should the NAFEC mission expand to accommodate more aircraft and training missions. Not only can dust create air quality issues, it can also create a visual impairment for pilots depending on other variables such as the time of year and the density.

While aviation activities in the county can generate fugitive dust, other sources from community activities can produce dust in the county including agriculture and construction operations and recreational activities. These other dust sources combined with aviation operations have the potential to collectively increase dust and PM into the air in Imperial County.

Fugitive dust is can result in increased regulations sanctioned against the county due to degradation of air quality. If air quality issues increase within the county, future federal funding could be jeopardized for transportation infrastructure.

## EXISTING TOOLS

Relative to the dust generated by military operations and any potential increases in military operations on the NAFEC ranges, NAFEC is required by law to comply with air quality standards and regulations. NAFEC coordinates with the Imperial County Air Pollution Control District (APCD) in monitoring air pollutants.

### Draft EIS for the Homebasing the F-35 Lightning II

An environmental analysis is required for any potential mission increase or realignment per federal law. An analysis was most recently completed for the potential homebasing of the F-35, Lightning II aircraft at NAFEC. During this environmental analysis, the overall impacts of PM on air quality were determined insignificant, and the NAFEC location was not eliminated as an alternative for homebasing the F-35 for this factor. Issue AQ-1 contains more details on the air quality determination associated with the F-35 homebasing at NAFEC.

### Range and Training Areas Standard Operating Procedures

NAFEC coordinates and schedules all pyrotechnic exercises or activities occurring on the ranges with a Range Control Officer. The Range Control Officer is aware of the effects that bombing and pyrotechnics have on air quality and utilizes weather tools such as the Imperial County APCD website, to determine if an activity or exercise should be delayed or postponed due to air quality concern days. The Range Control Officer is in constant communication and coordination with the Imperial County APCD to ensure air quality is only minimally affected during training events.

### Imperial County General Plan

The Imperial County General Plan Agricultural Element establishes provisions for both agriculture and construction activities in the county relative to airborne dust emissions. The county has enacted the Right-to-Farm resolution for residents actively involved with agricultural operations as their source of income and business. The Right-to-Farm resolution allows agricultural activities that may be deemed nuisances to adjacent land uses. These nuisances include the presence of flies, odors, dust, night light, and chemical spraying.

The county's provisions have sought to protect adjacent land uses by establishing compatibility guidelines for uses adjacent to agricultural land uses:

> ***Goal 3:*** *Limit the introduction of conflicting uses into farming areas, including residential development of existing parcels which may create the potential for conflict with continued agricultural use of adjacent property.*
>
> ***Objective 3.1*** *The primary use of any parcel designated "Agriculture" on the Land Use Plan shall be agricultural production. Residential uses in such areas must recognize that this primary use of the land may create nuisances such as flies, odors, dust, noise, night light, and chemical spraying.*
>
> ***Objective 3.5*** *As a general rule, utilize transitional land uses around urban areas as buffers from agricultural uses. Such buffers may include rural residential uses, industrial uses, recreation areas, roads, canals, and open space areas.*
>
> ***Objective 3.6*** *Where a development permit is sought adjacent to agricultural land use, protect agricultural operations by requiring appropriate buffer zones between agricultural land and new developments, and then keep these zones aesthetically pleasing and free of pests by cleaning them of all garbage and noxious vegetation. Vegetation for the purpose of dust control shall be planted and maintained in an attractive manner. The buffer shall occur on the parcel for which the development permit is sought and shall favor protection of the maximum amount of farmland.*

***Objective 3.7*** *Land use decisions regarding property contiguous to agricultural operations shall give consideration to creation of large parcel sizes to minimize conflicts with such operations.*

The county has also established a program to protect the environment as it relates to air quality and dust:

*All non-agricultural uses in any land use category shall be analyzed during the subdivision, zoning, and environmental impact review process for their potential impact on the movement of agricultural equipment and products on roads located in the Agriculture category, and for other existing agricultural conditions which might impact the project, such as noise, dust, or odors.*

### Imperial County Land Use Ordinance

Imperial County controls and regulates the emission of fugitive dust related to construction activities through coordination with the Imperial County APCD and through regulations in the LUO for site and design standards for residential, commercial, and industrial zones and subdivision standards for residential zones. The regulations include the following:

***§90301.01 O.*** *During all on-site grading and construction activities, adequate measures shall be implemented to control fugitive dust emissions.*

***§90301.02 N.*** *For industrial or commercial developments utilizing outside storage, the areas devoted to outside storage shall be treated with a dust binder or other dust control measures, as approved by the APCD.*

***§90301.02 O.*** *During all on-site grading and construction activities, adequate measures shall be implemented to control fugitive dust.*

***§90804.04 N.*** *During all on-site grading and construction activities, adequate measures shall be implemented to control fugitive dust emissions.*

With the existing tools and procedures in place, this issue is considered addressed for the purposes of this planning study and no additional assessment is needed.

## 11. Light and Glare

*This factor refers to man-made lighting, i.e. street lights, airfield lighting, and building lights and glare, i.e. direct or reflected light that disrupts vision. Light sources from commercial, industrial, recreational, and residential uses at night can cause excessive glare and illumination and impact the use of military night vision devices and air operations. Conversely, high intensity light sources generated from a military area such as ramp lighting may have a negative impact on the adjacent community.*

Technology innovation has made the possibility of nighttime warfare to excel at night. Night vision devices and other special operations tactics are deployed to enable strategic nighttime warfare. To be successful in combat, the military must train under conditions and environments similar to combat theaters. Night vision devices allow military personnel to train in near-daylight conditions during nighttime hours.

### TECHNICAL BACKGROUND

Under dark sky conditions, the use of night vision goggles (NVG) allows military personnel to view objects up to a distance of 980+ feet (300 meters). Lighting located outside of an installation can decrease NVG effectiveness to a distance of 164 feet (50 meters). Street lights or other elevated structures that are lit at night produce a halo effect around objects, which reduces visibility and resolution for air and ground personnel. The amount of ambient light experienced on the ground is a function of:

- Intensity of nearby light sources (up to 20 miles away).
- Distance from the sources.
- Spectra of the light sources (blue light decays faster in the atmosphere).
- Density of the cloud deck.
- Height of the cloud.
- Relative humidity.

In measuring light pollution, proximity to a community has a significant effect on the amount of light pollution saturating the sky. Proximity twice as close to a community creates sky glow appear approximately six times brighter.

Sky glow from communities typically diminishes in the later hours of the night, when businesses close and lights are turned off. The area and amount of light pollution can / will increase as development extends outward from a community. Increased light pollution can cause an increase in the amount of sky glow and ultimately create compatibility issues with military missions.

The impacts of outdoor lighting on the dark skies over NAFEC are primarily determined by two principal factors – the density and distance of development from the installation. The relationship between density and distance is best demonstrated using an estimate of urban sky glow called Walker's Law. The relationship captured through the use of this formula was developed based on measurements of sky glow for a number of cities in California. The following formula is used to estimate sky glow at an observing site looking at a zenith angle of 45 degrees toward an urban source:

$$I = C \times P \times R(n)$$

Where:

I = Percent increase of the night sky brightness above the natural background at 45 degrees down from directly overhead (facing the community, directly overhead is roughly ¼ of this value),

P = Population of the community,

R = Distance, in kilometers (km), from the observing site to the center of the community,

"C" = 0.01 for "R" values between 10 and 50 km, and

"n" = 2.5 for "R" values between 10 and 50 km

According to the National Oceanic and Atmospheric Administration (NOAA), the assumed radius of a community is a function of its population, ranging from 2.5 km to 24-km. Walker's law applies if the installation is outside the city radius. If located inside the community radius, the sky glow increases in a linear manner toward the center by another factor of 2.5.

The following scenarios illustrate the application of Walker's Law:

**Scenario 1:** A 100-acre development located two kilometers from the installation with a density of six units per acre (assuming 2.5 persons per household) would impact the sky background by over 260 percent (nearly 663 percent with NOAA factor).

**Scenario 2:** A 100-acre development located 20 kilometers from the installation with a density of six units per acre (assuming 2.5 persons per household) would impact the sky background by approximately less than 1 percent (just over 2 percent with NOAA factor).

If the density was decreased to one unit per acre the resulting scenarios would result in the following increased sky glow:

**Scenario 1:** Approximately 44 percent (almost 111 percent with NOAA factor).

**Scenario 2:** Approximately less than 1 percent (still less than 1 percent with NOAA factor).

In general, the following trends are demonstrated:

- The more dense the urban development, the greater the potential for light intrusion.
- The closer development is to the installation, the greater the potential is for light intrusion.

| Issue LG-1 | **Concern about light and glare near all ranges.** Night training can occur within all ranges and proposed development around these areas can be incompatible due to increases in point light sources and overall increase in ambient light. |
|---|---|

## COMPATIBILITY ASSESSMENT

NAFEC ranges, Targets 101 and 103, Shade Tree and Loom Lobby respectively, are equipped with night lighting to enable nighttime aviation training and maneuvering. Dark sky is essential to effective nighttime training to ensure pilots have a realistic environment. Pilots either use visual aids, i.e. lighted targets and runways provided by the installation or night-vision devices. These visual aids or devices can be rendered ineffective, and at times can temporarily blind the pilot due to the amount of ambient light or sky glow in the training environment.

As development occurs using uncontrolled or unregulated lighting, increased sky glow and ambient light is produced which reduces dark skies. Military readiness is jeopardized due to the loss of appropriate training environment which can result in the realignment of missions to more suitable training environments.

## EXISTING TOOLS

### Imperial County Land Use Ordinance

Site Design Standards in the Imperial County LUO Title 9, Division 3, provide general guidelines for lighting only partially addressing dark skies. The county generally regulates lighting for all residential, commercial, and industrial zones:

> *"All exterior lighting shall be shielded and directed away from adjacent properties and away from or shielded from public roads."*

The county's LUO states that a review of the proposed lighting is required to submit a plot application.

*Source: County of Imperial Land Use Ordinance, 1998.*

| Issue LG-2 | **Imperial County and the cities of El Centro and Imperial do not have dark sky ordinances.** Certain types of directional lighting can encroach on the NAF El Centro night training mission since the lighting can produce ambient light and light trespass rendering the night vision training devices ineffective. |
|---|---|

## COMPATIBILITY ASSESSMENT

NAFEC conducts nighttime training and targets 101 and 103 are equipped with night lighting to enable nighttime training for pilots. Nighttime training can be impacted from ambient light in new developments. Ambient light creates a sky glow that adversely effects the night vision equipment and impairs a pilot's visual acuity. Ambient light or light trespass can render the night-vision equipment ineffective and cause increased risk to pilot and aircraft safety and decrease the effectiveness of training ultimately impeding military readiness. Imperial County and the cities of El Centro and Imperial do not regulate lighting to encourage dark sky.

## EXISTING TOOLS

### Imperial County Land Use Ordinance

Imperial County has not adopted a dark sky ordinance that prescribes lighting fixtures, directional lighting, and lumens within the light source.

Although the county does not have a dark sky ordinance, regulations only partially address dark sky preservation.

## City of El Centro Zoning Ordinance

While the City of El Centro has not adopted a dark sky ordinance, the city regulates lighting for property development within commercial and manufacturing zoning districts. The regulations that partially protect dark skies include:

> *"Sec. 29-149. Lighting Standards*
>
> *Outdoor lighting shall be permitted so as to provide safe pedestrian and vehicular access and to provide security lighting in compliance with the following standards:*
>
> *(2) Light fixtures shall be designed so and adjusted as to reflect light away from the following: any road or street; adjoining premises on which a dwelling is located; or land zoned for other than business or industrial uses.*
>
> *(4) No light or glare shall be transmitted or reflected in such concentrated quantities or intensities as to be determined or harmful to, or to interfere with, the use of surrounding properties or street.*
>
> *For commercial zone districts, the City partially protects the dark skies by requiring the following:*
>
> *"Sec. 29-63 (n) Commercial zones design standards: Lighting.*
>
> *(3) As a security device, lighting shall be adequate but not overly bright. All building entrances shall be appropriately lighted.*
>
> *(4) All lighting fixtures shall be shielded to confine light spread within the site boundaries."*

For manufacturing zones, the city requires the following lighting standards to protect dark skies, only partially protecting dark skies:

> *"Sec. 29-71 (l) Manufacturing zones design standards: Lighting.*
>
> *(3) As a security device, lighting shall be adequate but not overly bright. All accesses to buildings shall be well lighted.*
>
> *(4) All exterior fixtures shall be illuminated from dusk to dawn, unless otherwise approved for the site.*
>
> *(6) All lighting shall be shielded to confine light spread within the site boundaries and sky glow impacts."*

*Source: City of El Centro Zoning Ordinance, 1980 [amended 2013].*

## City of Imperial Zoning Ordinance

The City of Imperial has not developed or adopted a dark sky ordinance to protect the night skies from light pollution. The city's zoning ordinance (ZO) partially regulates lighting to protect night skies. The ZO regulates lighting on air conditioners, antennas, heating, cooling and ventilating equipment for residential uses and within specific overlay zones by requiring the following:

> *"…lighting or electrical devices shall be so operated they do not disturb the peace, quiet and comfort of neighboring residents and shall be screened, shielded and / or sound buffered from surrounding properties and streets."*

Within commercial and industrial zoning districts, the City regulates lighting to partially protect dark skies:

> *"All light sources shall be shielded in such a manner that no light is visible from streets or adjoining properties…All exterior lighting shall be low pressure sodium or other approved type."*

*Source: City of Imperial, Zoning Ordinance.*

| Issue LG-3 | **Alternative energy projects that create excessive light and/or glare conditions.** Some alternative energy development projects use reflective materials that produce glare and can impair pilot vision. Other facilities can create ambient light and sky glow that can increase the risk of pilot and aircraft safety and impact night vision training. |
|---|---|

Certain alternative energy technologies incorporate reflective materials in their construction which assist in the generation of energy for distribution and power, but also produce unintended glare. The location and direction of glare can impair the vision of military and civilian pilots who may be training or performing activities in the vicinity. Visual impairment can decrease pilot and aircraft safety and ultimately the general public.

There are no solar energy development facilities that have been planned or proposed using the reflective material construction method in Imperial County. The county's general plan and LUO do not prescribe policies and regulations to control the use of this type of construction material to develop a solar array. In addition, the county's general plan and LUO only partially address glare produced by alternative energy development facilities with special focus on geothermal development.

## EXISTING TOOLS

### Imperial County General Plan

The Imperial County General Plan, Geothermal / Alternative Energy and Transmission Element include provisions for geothermal energy development, but only minimally address other alternative energy facility development. The Imperial County General Plan only prescribes the following land use implementation standards for geothermal exploration and facilities:

> *"General and specific standards include preservation of farm operations by minimizing surface land usage for geothermal exploration and facilities, and by avoiding disruption to existing irrigation and drainage patterns; maintain adequate setbacks from property lines, streets, and in particular, noise sensitive land uses such as residences, schools, and hospitals; avoid nuisance and unsightly conditions with appropriate limits on hours of operations, light control, and adequate fencing and landscaping; and establish proper procedures for system shutdown and site abandonment."*

This standard does not consider the use of certain construction materials and technologies used in the design and construction of solar energy facilities, nor does the general plan prescribe policies that provide for public safety including military and civilian aviation operations.

*Source: Imperial County General Plan, Geothermal / Alternative Energy and Transmission Element, 2006.*

| Issue LG-4 | **Screening / downward lighting requirements in new construction and street lighting.** There are no regulations specifying shielded lighting for new construction. Light trespass can render night vision training ineffective due to the glow through night vision goggles. |
|---|---|

The county and the cities of El Centro and Imperial only partially regulate lighting to preserve the dark skies and protect the night-time training activities performed at the NAFEC airfield and training ranges.

Although the county and the cities established provisions for lighting to be shielded and directed away from adjacent properties and streets, these regulations do not adequately address light pollution generated by lumens within the light source, nor do these regulations address the horizontal plane for which light emitted should not pass.

## 12. Alternative Energy Development

*Development of energy sources, including alternative energy sources (such as solar, wind, geothermal or biofuels) could pose compatibility issues related to glare (solar energy), or vertical obstruction (wind generation), or water quality / quantity.*

The moving blades of a wind turbine create a Doppler effect that can interfere with radio transmissions between air traffic controllers and aircraft and other types of communications, such as satellites. Recent studies indicate that large numbers of wind turbines located between five and eight miles from a radar system can have a negative impact on the system and interfere with readings. The impacts on radar are increased with the height, number, and clustering of turbines. The greatest impact is caused by their location proximate to the radar system. Although research is still being conducted, it is not fully known how tall, large, or how many wind turbines must be present to compromise radar operations.

Solar facilities can cause substantial amounts of glare depending on their type, location, angle and direction, resulting in a reduction of a pilot's view, even at a very high altitude.

| Issue AE-1 | **Continued solar and other alternative energy development encourages expansion of transmission capabilities.** As increases in production are dispersed in the area, transmission lines and facilities need to be planned to avoid being a hazard to aviation and training. |
|---|---|

Pursuant to state legislation, in 2011, the State of California set an ambitious goal of reaching a 33 percent energy procurement rate sourced from renewable energy by the year 2020. This goal, complemented by the abundant renewable energy resources available in Imperial County has drawn concern for the military relative to solar and other alternative energy development facilities' impacts on aviation and training activities.

Solar tracking towers can reach heights of up to 500 feet, which can be a clear obstruction of navigable airspace if not sited appropriately away from aviation corridors and low-level military training routes. Certain solar technologies generate energy from reflective materials vice absorptive materials. This reflective technology can create visual impairments for both military and civilian pilots in training and / or performing commercial aviation services.

### Imperial County General Plan

The Imperial County General Plan Geothermal / Alternative and Transmission Element addresses this issue through prescriptive goals, objectives, and policies for solar, geothermal, and other alternative energy development. The county encourages the location and collocation of these facilities in designated areas, such as energy parks and within the BLM-identified energy zone. The county also encourages the establishment of "joint-use utility corridors" where roadway infrastructure shares the same alignment with transmission lines for renewable energy production and distribution. The following goals, objectives, and policies partially address the concern for the production and the siting of associated infrastructure in the county:

**Goal 1.** The County of Imperial supports and encourages the full, orderly, and efficient development of geothermal/alternative energy resources while at the same time preserving and enhancing where possible agricultural, biological, human, and recreational resources.

**Objective 1.1.** Design for the co-location of energy facilities through the designation of "energy park" zones to increase certainty and facilitate power generation development and to provide for efficient use of land resources.

**Goal 5.** When planning and designing transmission lines, the County will consider impacts to agricultural lands, wildlife, and the natural desert landscape.

**Objective 5.** Require all major transmission lines to be located in designated federal and IID corridors or other energy facility corridors such as those owned by investor owned utilities and merchant power companies.

**Objective 5.2.** Design lines for minimum impacts on agriculture, wildlife, urban areas, and recreational activities.

**Objective 5.3.** Construct transmission lines in accordance with this Element.

**Objective 5.4.** Design transmission lines to be joint use with transportation and other infrastructure corridors within or external to the County.

**Policy 6.** Coordinate County planning and regulation of geothermal activities with other governmental agencies as necessary.

Although these goals, objectives, and policy provide a strong framework for siting and collocation of renewable energy transmission lines and development, the element does not reference compatibility with military or civilian aviation activities, nor does the general plan encourage the coordination with the DOD Siting Clearinghouse for Renewable Energy Development.

### Imperial County Land Use Ordinance

The Imperial County LUO Title 9, Division 17 establishes regulations for the safe and efficient development, generation, and use of geothermal resources within the county including an overlay zone for geothermal development in Imperial County.

| Issue AE-2 | **BLM permitting process for alternative energy development can promote less than optimal siting decisions.** The BLM permitting process is lengthy, causing developers of renewable energy projects to site their projects on private property. This can lead to greater dispersion of development (additional transmission facilities), encourage conversion of productive agricultural lands, and encourage locations closer to NAF El Centro / ranges and associated airspace. |
|---|---|

Lands under BLM administration are ideal for siting alternative energy development projects because of the minimal impacts on the NAFEC military mission and sensitive species management areas. The process for identifying and siting potential renewable energy facilities with BLM is lengthy due to available resources and time constraints associated with evaluating land for resource protection and management.

The Governor of California issued Executive Order S-14-08 (EO S-14-08) requiring the State of California to increase electric generation from renewable energy resources to 33 percent by the year 2020. The result of this EO was the creation of the Renewable Energy Action Team (REAT) and the streamlining of the siting and development process for renewable energy facilities through memoranda of understanding (MOUs) among federal and state agencies to accomplish the renewable energy generation target.

The REAT is comprised of various agencies including California Department of Fish and Wildlife (DFW), California Energy Commission, BLM, and USFWS. These agencies collaborated to identify lands within the Mojave and Sonoran Deserts ideal for renewable energy generation facilities. An existing conditions assessment was prepared including a biological assessment of the natural communities within a specified area. This assessment is known as the Desert Renewable Energy Conservation Plan (DRECP).

The DRECP included criteria for assessing lands relative to their protective designations, such as protected in perpetuity, protected but not in perpetuity, and not protected. This assessment assisted in determinations to "take" or move habitat to enable the development of alternative energy development facilities through a more streamlined and scientifically defensible process.

The DRECP also identifies the phased activities associated with various renewable energies facility development:

- Initial (Pre-Construction) Activities
- Construction
- Operations and Maintenance
- Decommissioning

The DRECP also indicates types of acceptable activities associated with the following renewable energy sources:

- Transmission
- Geo-thermal
- Solar (photovoltaic)
- Solar (concentrated solar power)
- Wind

The DRECP outlines a prescriptive set of assessment criteria for land management agencies to consider before any renewable energy development applications are approved. While this process is lengthy, it has the best interest of the natural communities, the associated ecology, and the general public in mind. One deficiency in this plan is that it lacks a recommendation for affected jurisdictions to accept and adopt a portion of this or this entire plan in their general plans and zoning ordinances as it applies to geographic location.

To address this issue, the DRECP has provided a scientific and methodical means of land evaluation considered for renewable energy facilities development where a "taking" may be present. Other than the acceptance, adoption, and incorporation of goals and objectives into affected local jurisdictions planning documents, this issue has been addressed by the DRECP and no further analysis is required.

*Source: Draft Desert Renewable Energy Conservation Plan, May 2011. Bureau of Land Management.*

### Imperial County Land Use Ordinance

The Imperial County LUO includes provisions for geothermal development facilities within the county including approximate processing times depending upon the type of geothermal development proposed.

However, the county's LUO does not establish adequate controls for processing solar energy facilities in the county. Due to a lack of systematic regulations for solar energy development, the processing time for solar energy projects on private properties could be delayed or accelerated and could result in a less than thorough review or project approval without military consultation.

## 13. Air Quality

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

### COMPATIBILITY ASSESSMENT

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| **Issue AQ-1** | **Concern about air quality issues associated with potential increased military training operations.** Imperial County is currently designated as nonattainment for some air pollutants. Any increase in military training operations could impact air quality in the County. |

While air quality was not generally a concern for the military and local jurisdictions, there is concern regarding diminished air quality originating from the potential increases in training missions.

The Imperial County APCD is the county authority for managing and monitoring air quality and its associated response systems and management plans to address the nonattainment designations within Imperial County. Imperial County is currently designated as non-attainment for the following air pollutants:

- Marginal for ground-level Ozone ($O_3$) standards [2008]
- Nonattainment for 24-Hour Particulate Matter 2.5 ($PM_{2.5}$)
- Moderate nonattainment for 8-Hour $O_3$ [1997]
- Serious nonattainment for Particulate Matter ($PM_{10}$)

### EXISTING TOOLS

#### Draft Environmental Impact Statement for the F-35 Aircraft Beddown at NAF El Centro

The draft environmental impact statement (DEIS) for the F-35 Aircraft beddown / homebasing at NAFEC evaluated numerous factors including air quality to determine the preferred location for the home of the new weapons delivery system for the U.S. Navy, the F-35 Lightning II Aircraft.

For the NAFEC alternative, the DEIS evaluated air quality based on mobile and stationary sources of air pollution. Mobile sources are not in a fixed location and include emissions from aircraft, vehicles associated with movement of transient personnel, and vehicles associated with construction activities. Stationary sources are stationary and include, but are not limited to emissions and PM associated with the use of abrasive blasting units, boilers and hot water heaters, generators, paint booths, and hydroblasting units.

The DEIS reported minimal change in numbers of training operations conducted at NAFEC through the year 2015 resulting in very little impact on air quality. For the same time period, stationary sources of air pollution were deemed to be stable. Little to no impact on air quality is expected through 2015.

After 2015 and through 2028 when the construction of new facilities will begin, the mobile sources of air pollution would increase including aircraft operations associated with the newer F-35 airframe. The DEIS indicated that these operations would result in the generation of nitrous oxides pollutants ($NO_x$) in excess of allowable thresholds prescribed for the county. However, a conformity determination was further prepared to assess the $NO_x$ emissions and concluded that the emissions generated by the F-35 homebasing at NAFEC would be covered by the following three criteria:

- A military jet increment for airfield operations in the emission inventory.
- Appropriate “on-road” mobile sources in the air district emission inventory for commuter emissions.
- Appropriate categories in the air district emission inventory for construction activities.

The 2009 Ozone Modified Air Quality Management Plan produced by the Imperial County APCD is currently under review by the U.S. Environmental Protection Agency (USEPA) and addresses nitrous oxide and other pollutants for air quality compliance in Imperial County.

The DEIS process concluded that all potential sources of air pollution and their associated increases throughout the years 2015 – 2018 would result in less than significant impacts on air quality in Imperial County if NAFEC was selected for the homebasing of the F-35 Lightning II. The DEIS also concluded that ongoing monitoring and evaluation of air pollutants should be conducted by the U.S. Navy as increases in training operations are likely for the NAFEC ranges even if the NAFEC was not selected for homebasing of the F-35.

This issue has been addressed by current measures employed by the U.S. Navy and the Imperial County APCD and does not require additional assessment.

## 14. Frequency Spectrum Interference / Impedance

*Frequency spectrum is the entire range of electromagnetic frequencies used for communications and other transmissions, which includes communication channels for radio, cellular phones, and television. In the performance of typical operations, the military relies on a range of frequencies for communications and support systems. Similarly, public and private users rely on a range of frequencies in the use of cellular telephones and other wireless devices on a daily basis.*

The military's use of frequency spectrum allows for safe operations and the effective delivery of weapons on target without interference. The military’s frequency spectrum needs for testing, evaluation, and training is constantly increasing, while the spectrum available for DOD use is decreasing. Frequency interference is related to other transmission sources and interference can result from a number of factors:

- Using a new transmission frequency that is near an existing frequency.
- Reducing the distance between two antennas transmitting on a similar frequency.
- Increasing the power of a similar transmission signal.
- Using poorly adjusted transmission devices that transmit outside their assigned frequency or produce an electromagnetic signal that interferes with a signal transmission.
- Existing electronic sources and uses created by portable systems affecting entire communities utilizing Wi-Fi broadband systems and industrial sources that produce electronic noise by-product.

The military relies on a range of frequencies for communications and support systems to successfully complete its operational activities within the installation and its training areas. Communications interference created by vertical obstructions and / or the natural environment, such as fog from an inversion layer off the coast, can potentially impede critical communications among aircraft and aircraft to targets. This can result in delayed training missions and lost training hours for pilots, ultimately decreasing military readiness.

## COMPATIBILITY ASSESSMENT

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| **Issue FI-1** | **Concern about potential impedance with line-of-sight antennas.** NAF El Centro uses line-of-sight antennas between ranges and air traffic radar facilities in Yuma. There is concern about development between these facilities impacting the connection and disrupting essential communications. |

Uncoordinated siting of cellular towers, tall structures including buildings and alternative energy development facilities can pose a threat to the communications associated with aviation operations on NAFEC ranges. The locations and elevations of these towers can potentially impede communications between pilots and air traffic control towers and between antennas to evaluate scoring of training exercises.

Other natural and man-made variables that create frequency spectrum impedance include weather phenomena such as inversion layers and steam generated from geothermal plants that may cover the area. These variables can interfere with communications by creating halo effects, ghost-like effects, or cloud infrared systems on radars and aircraft communications systems rendering communications between pilot and ground-control ineffective.

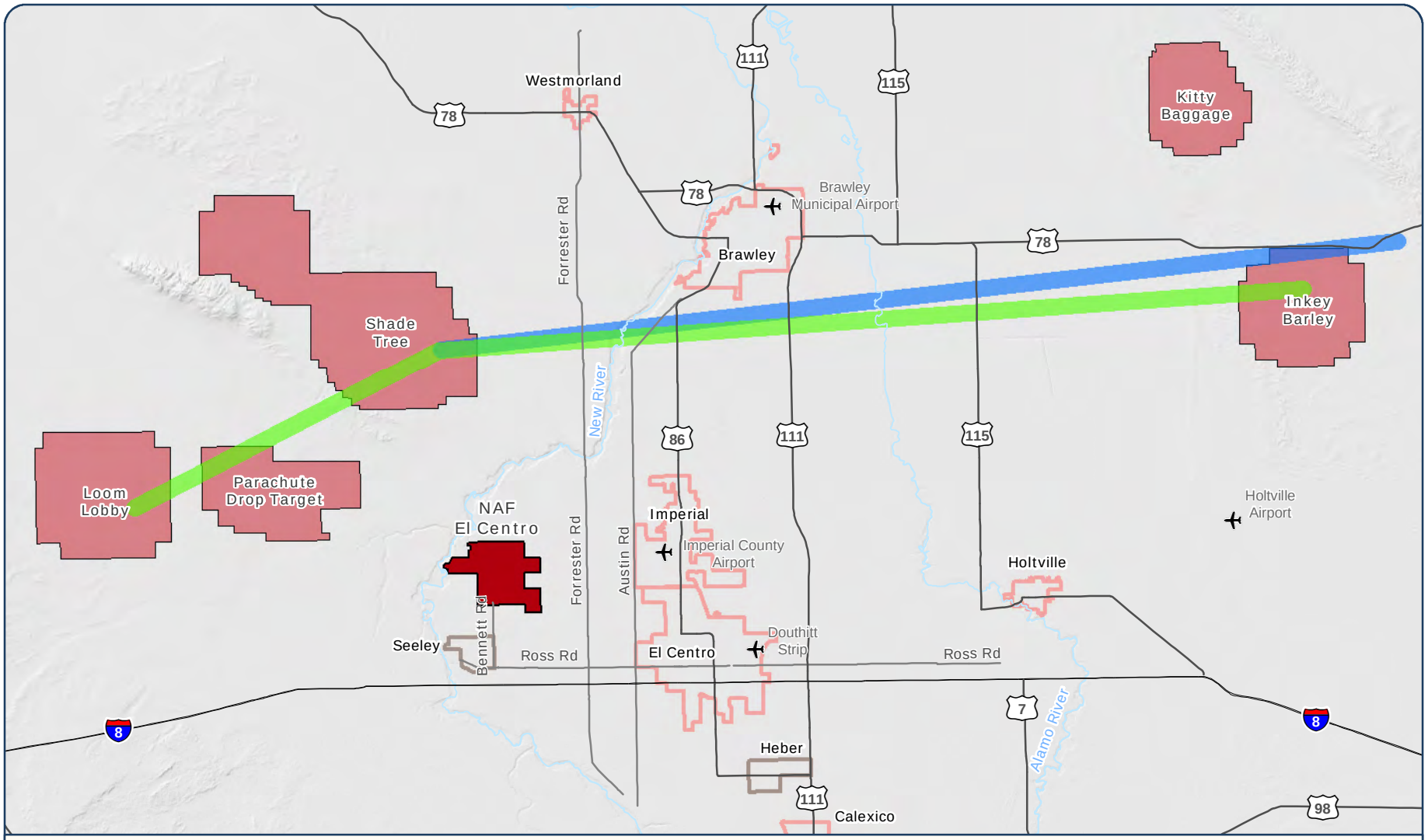
NAFEC utilizes antennas to communicate during training operations. These antennas require a line-of-sight to clearly and effectively communicate with other aircraft and scoring systems. Figure 5-20 illustrates the existing line-of-sight and the new proposed line-of sight. The new proposed line-of-sight is needed due to the interference created by an inversion layer present in this area. This proposed line-of-sight has not been approved or funded, but it is being considered for future implementation.

### Imperial County General Plan

The Imperial County General Plan includes provisions to site utilities including telecommunications towers and alternative energy development facilities. In addition to this policy guidance, the county requires review of all transmission lines by the ALUC. Although this supports compatibility since ALUC's authority includes the airspace around the NAFEC airfield, ALUC's authority does not encompass the aviation activities performed on NAFEC ranges.

The GP goals, objectives, and policies that address siting of transmission lines and alternative energy development facilities assist with the orderly development of such structures, i.e. tall structures relative to alternative energy development facilities. The GP does not address compatibility with these tall structures relative to the potential for frequency spectrum impedance due to location. The GP generally acknowledges the need to coordinate with other agencies including federal agencies, but does not address compatibility planning with the military.

*Source: Imperial County General Plan, Geothermal / Alternative Energy and Transmission Element, 2006.*




Source: Matrix Design Group, 2013.

**Figure 5-20**
**Frequency Spectrum Interference**

*Fig_5-20_NAFEC_JLUS_Proposed_Line-of-Sight_20131104a_JKC.pdf*

### Imperial County Land Use Ordinance

Imperial County regulates the development of telecommunications towers by providing permitting processes and coordination procedures in Title 9, Division 24 of the LUO. The LUO states that any proposed development of wireless, cellular, or any other telecommunications towers must be in compliance with state and federal agencies but does not require coordination with the military. The following statement from the LUO expressly states the requirement for coordination between agencies.

- **State or Federal Requirements.** All towers must meet or exceed current standards and regulations of the FAA, the Federal Communications Commission (FCC) and any other agency of the state or federal government with the authority to regulate towers and antennas. If such standards and regulations are changed, then the owners of the towers and antennas governed by this Ordinance shall bring such towers and antennas into compliance with such revised standards and regulations as mandated by the controlling state or federal agency. Failure to bring towers and antennas into compliance with such revised standards and regulations shall constitute grounds for the removal of the tower or antenna at the owner's expense.

While heights of towers and structures are regulated by the county's LUO, there are no regulations addressing the siting of tall structures relative to their potential impedance on military communications.

*Source: Imperial County Land Use Ordinance, Title 9, Division 24, 2008.*

## 15. Public Trespassing

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

Military areas that are located on, or adjacent to public lands owned by other entities i.e., federal, state, or local that are designated for public access or recreation often experience issues related to public trespassing.

Public trespass into training ranges and other areas with safety hazards from military operations present the biggest concern for the U.S. Navy and the county.

| Issue PT-1 | **Trespassing on range areas.** The public can access areas where military operations and training exercises occur, which poses a safety risk. |
|---|---|

### Public Law 104-201: Military Withdrawal Act for NAF El Centro Ranges

The U.S. Navy has withdrawn substantial areas of the land from the BLM and other agencies for training and experimental operations located within Imperial County. Certain areas have been designated as restricted to the general public under any conditions due to the nature of activities performed at these sites. Activity associated with aerial parachute drops and gunnery and bombing practice sites constitute a threat to the public health and safety in these areas.

Nearby and adjacent BLM lands are used for recreation purposes. The proximity of these accessible lands could potentially cause confusion about boundaries associated with BLM and U.S. Navy land and result in an increase in trespassing on ranges. As stipulated in Public Law (PL) 104-201, portions of the range safety zones may be open to the public to permit land uses compatible in this area on a case-by-case basis, such as off-highway vehicle (OHV) recreational use and camping. These activities require clearance by the NAFEC Commanding Officer and BLM. If controlled recreational use is permitted, it is subject to the management procedures imposed by BLM as outlined on their website for open and recreation areas. Notification about the military ranges is clearly expressed on BLM's website and on maps that identify where these open and recreational areas are located. The following statement is provided on each webpage for both the Plaster City and Superstition Mountain Open Areas located in the West Mesa area of the ranges.

> *"Limited use areas and military practice bombing targets are immediately adjacent to the open area. Please observe all posted signs and do not enter the bombing ranges."*

Trespassing during the day is less likely to occur because there is regular monitoring of the target areas by the U.S. Navy Surface Warfare Center, Corona Division. Regular monitoring assists in the operations and maintenance of the Weapons Impact Scoring System (WISS). The likelihood for trespassing increases at dusk and into the night and early

morning hours when U.S. Navy personnel are not actively monitoring target areas. Daytime trespassers typically leave the bombing ranges and target areas without hesitation when discovered by U.S. Navy personnel. The time when most trespassing occurs is during nighttime and early morning hours and weekends when activities for the targets and ranges are not scheduled. While signage is posted on partial-perimeter fences and in-ground poles, the lack of regular monitoring of this area during nighttime and early morning hours and unscheduled weekends increases the risk for trespassing.

In response to some of the vandalism caused by trespassing (discussed in the next issue), NAFEC has employed several measures to help guard against trespassing including fencing restricted military areas, installing a remotely-monitored video system, posting and re-posting of signage, and negotiating policing procedures with local law enforcement entities.

*Sources: Public Law 104-201: Withdrawal Act for the NAF El Centro Ranges, 1997.; Bureau of Land Management Plaster City Open Area Web Fact Sheet, 2013.; Bureau of Land Management Superstition Mountain Open Area Web Fact Sheet, 2013.; NAF El Centro, 2013.*

| Issue PT-2 | **Vandalism on range lands.** The current cost of metals, such as found in copper wiring or shell casings, encourages trespassing and vandalism on range lands. |
|---|---|

The targets and other military equipment found on the NAFEC ranges are constructed with components such as copper wiring and other materials that ensure durable use. Due to the lack of regular, consistent police patrolling of these areas, NAFEC ranges have been vandalized by damaging actions (cutting) to the perimeter fence, theft of signs and equipment. While the incidents and damages recorded over the last eight years have totaled $55,132.96, as shown in Table 5-12, the incident on June 21, 2012 potentially cost $393,000 due to the loss in flight hours. The incident involved a target that was determined unsuitable for night training activities by various units that use the targets for night training activities. This incident halted critical training activities and impeded valuable military readiness for the 3rd Marine Aircraft Wing units that train at NAFEC.

Continued vandalism has the potential to cost the military services and units that train at NAFEC time, equipment, money due to the loss of flight hours, and valuable training equipment and required repair costs. Due to the recurrence of vandalism especially with the theft of copper wiring, the U.S. Navy has desisted in replacing copper wiring until a suitable preventative measure can be employed to eliminate this type of theft. Due to inadequate equipment at NAFEC ranges, NAFEC could potentially lose units that train at its ranges, which could place the long-term viability of the target ranges in question.

**Table 5-12. Vandalism on NAFEC Ranges**

| Date | Target | Incident | Total Cost | Property Recovered |
|---|---|---|---|---|
| January 14, 2005 | 68 | Solar panel array stolen (the entire array to include mounting hardware and panels). Strafe Pit mounting hardware stolen (Strafe pit had to be rebuilt and hardware replaced/reinstalled). | $31,800.00* | No |
| April 7, 2011 | 101 | 1,200 feet of copper wire missing, and 12 transformers and 12 lights had to be replaced due to the way the wire was cut and bulbs broken during the theft. | $4,160.82 | No |
| June 22, 2011 | 103 | Target lighting stolen to include wire, lights, and transformers. Main power cable to site transformer cut. Repair entailed using heavy equipment to locate and lay new main power cable. | $6,802.29 | No |
| October 24, 2011 | 103 | 180 feet of copper wire was stolen. Used wire on-hand to replace the missing wire. | $212.50 | No |
| November 21, 2011 | 101 | 1,400 feet of copper wire missing, and three transformers and four lights destroyed by scrapper when ripping out wire. Materials on hand used to repair lights and transformers. | $2,505.81 | No |
| November 22, 2011 | 101 | 900 feet of copper wire missing from the previous day's installation. Used the wire left over from the previous purchase and what was on hand to replace what was stolen. | $299.06 | No |
| November 27, 2012 | 68 | Generators stolen (generators were providing temporary power during operations during solar system maintenance). Replace two generators, purchase signs, and repair the fence. | $5,170.00 | No |
| November 28, 2011 | 101 | 2,500 feet of copper wire missing. | $1,129.35 | No |
| December 13, 2011 | 101 | 2,000 feet of copper wire missing. | $1,104.77 | No |
| June 20, 2012 | 101 | 2,500 feet of copper wire missing. | $1,215.85 | No |
| June 21, 2012 | 101 | 2,500 feet of copper wire missing. Contractor was instructed not to purchase new materials in support of lighting system repairs until security measures could be put in place to prevent further theft. | $222.51 | No |
| June 21, 2012 | 103 | 1,500 feet of copper wire was stolen. Used wire on-hand to replace the missing wire. | $170.00 | No |
| September 13, 2012 | 103 | 500 feet of copper wire was stolen. Used wire on-hand to replace the missing wire. | $212.50 | No |
| September 19, 2012 | 103 | 1,200 feet of copper wire was stolen. Used wire left on target to hook up only 4 lights. Contractor was instructed not to purchase new materials in support of lighting system repairs until security measures could be put in place to prevent further theft. | $127.50 | No |
| **TOTAL** | | | **$55,132.96** | |

*Cost figure was estimated

*Source: NAFEC Ranges, 2013.*

### EXISTING TOOLS

The NAFEC range personnel reported the vandalism incidents to NAFEC Security, who reported some cases to the Imperial County Sheriff's Department. No arrests and prosecutions were made due to the lack of sufficient evidence.

The U.S. Navy is evaluating potential measures to safeguard the ranges against further vandalism including alternative materials to copper wiring. NAFEC has installed signage at ranges which have been stolen, damaged, or completely disregarded. NAFEC Range Operations has recently purchased a remotely-operated camera system to monitor the movement of personnel on the range. Whether this camera system is employed during the night when a majority of the vandalism occurs is unknown.

NAFEC is also in communication with the BLM, the Imperial County Sheriff's Office, and the Border Patrol to arrange for night patrol at ranges. NAFEC is evaluating the budget to determine if a funding allocation could be made to obtain a night-security position to monitor the ranges for vandalism during the night and early morning hours.

With the current process and controls currently in negotiation and employed on this issue, no additional assessment is required.

| Issue PT-3 | **Signage and fencing on ranges.** Limited signage (including lack of timely replacement of lost or stolen signage) and limited fencing of ranges can cause increased safety risks for the general public trespassing and unaware of the military range boundaries. This can result in encroachment on the installation. |
|---|---|

The NAFEC ranges are adjacent to BLM-administered lands where the public conducts recreational activities, i.e. off-highway vehicle activities and camping. NAFEC's target ranges do not have complete perimeter fencing due to public roadways traversing the areas, budget constraints, and recurring vandalism, i.e. fence cutting. Due to the proximity of other multi-use public lands in the vicinity of the ranges and because the signs and fences are vandalized or stolen, there is an increased risk to the public who traverse military withdrawn lands.

There are live and inert ordnance dropped from military aircraft at these target ranges during the day and night. At night, it is difficult to distinguish between BLM-administered and military land. The lack of adequate signage, lighting, and fencing represents a safety risk to the public since their location may not always be obvious.

Public roadways traverse Target 101 Shade Tree making it difficult to prevent public trespass in these areas. On March 25, 2013 a motorcyclist trespassed into Target 101 which might have been prevented with complete fencing. Due to the incident, the Restricted Airspace 2510 (R-2510) had to be shutdown to clear out the individuals and clean up the site. Imperial County Dispatch received the call and notified the U.S. Navy Region Southwest Dispatch to notify NAFEC Range Control. An ambulance was immediately dispatched and NAFEC Range Control escorted the individuals off the property. This incident proved no loss of life or training time and no equipment was destroyed, but complete fencing and signage could have prevented this type of occurrence. Range Control reported that there are approximately two incidents annually, similar in nature, occurring during the summer season, Labor Day through Memorial Day.

### EXISTING TOOLS

Once the vandalism is reported to NAFEC Range Control, personnel are dispatched to the site to repair the fence lines and clear the land. Signs are replaced when budgets allow for such activity.

## 16. Cultural / Historic Resources

*Cultural resources are an aspect of a cultural system that is valued by or significantly representative of a culture or contain significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as artifacts, records, districts, pre-contact archaeological sites, historic archaeological sites, buildings, structures, and objects. Historic properties are cultural resources that are eligible or listed on the National Register of Historic Places. Cultural resources may prevent development, require development constraints, or require special access by Native American tribal governments or other authorities.*

The protection of prehistoric and historic resources is provided through the National Historic Preservation Act (NHPA) as a means to protect historical and cultural items within the United States. The NHPA addresses the preservation of cultural resources including cultural landscapes, traditional cultural properties, sacred sites, and historic and archaeological resources. Documentation of cultural resources and NHPA compliance activities must be coordinated through the California State Historic Preservation Office (SHPO).

Cultural resources typically take one of four forms: archaeological, historical, architectural, or traditional cultural properties. Archaeological resources are considered material remains of past human life or activities that provide scientific or social insight into past human cultures. Architectural resources are structures including standing buildings, bridges, dams, canals, etc. of historical, architectural, or engineering significance. Traditional cultural properties are places where associations with cultural practices or beliefs of a living community occurred in the past or are presently occurring.

Special considerations must be made for any development or expansion of military mission activities within areas of cultural significance or sensitivity.

## COMPATIBILITY ASSESSMENT

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|---|---|
| **Issue CR-1** | **Impacts to Fort Romualdo Pacheco.** Fort Romualdo Pacheco is located north of NAF El Centro proper and situated on the NAFEC range. Due to its location, this historic site may be subject to impacts from the military training and should be considered in range management plans and community plans. |

There are concerns of vibration impacts to the registered California State Landmark site at Fort Romualdo Pacheco generated from low-altitude flight activities. This historic site is the former adobe fort constructed by the Mexican army in 1825-26 and briefly occupied. This fort was the only Mexican fort constructed in Alta California making the site eligible for designation in the California Register of Historic Resources and listed as an official California Registered Historical Landmark. In 1981, a temporary dedication and marker was approved for Fort Romualdo Pacheco, but it was not until October 1994 that a formal dedication and monument was placed at the site (No. 944). This monument was erected by the State of California and located on West Worthington Road, (County Hwy. S28).

The site is subject to overflight of both rotary and fixed-wing aircraft. Figure 5-21 illustrates the location of Fort Romualdo Pacheco relative to the military operating area within the imaginary surfaces of the NAFEC Runway 12/31. The fort location is within the approach-departure clearance zone which is infrequently utilized by rotary or fixed-wing aircraft.

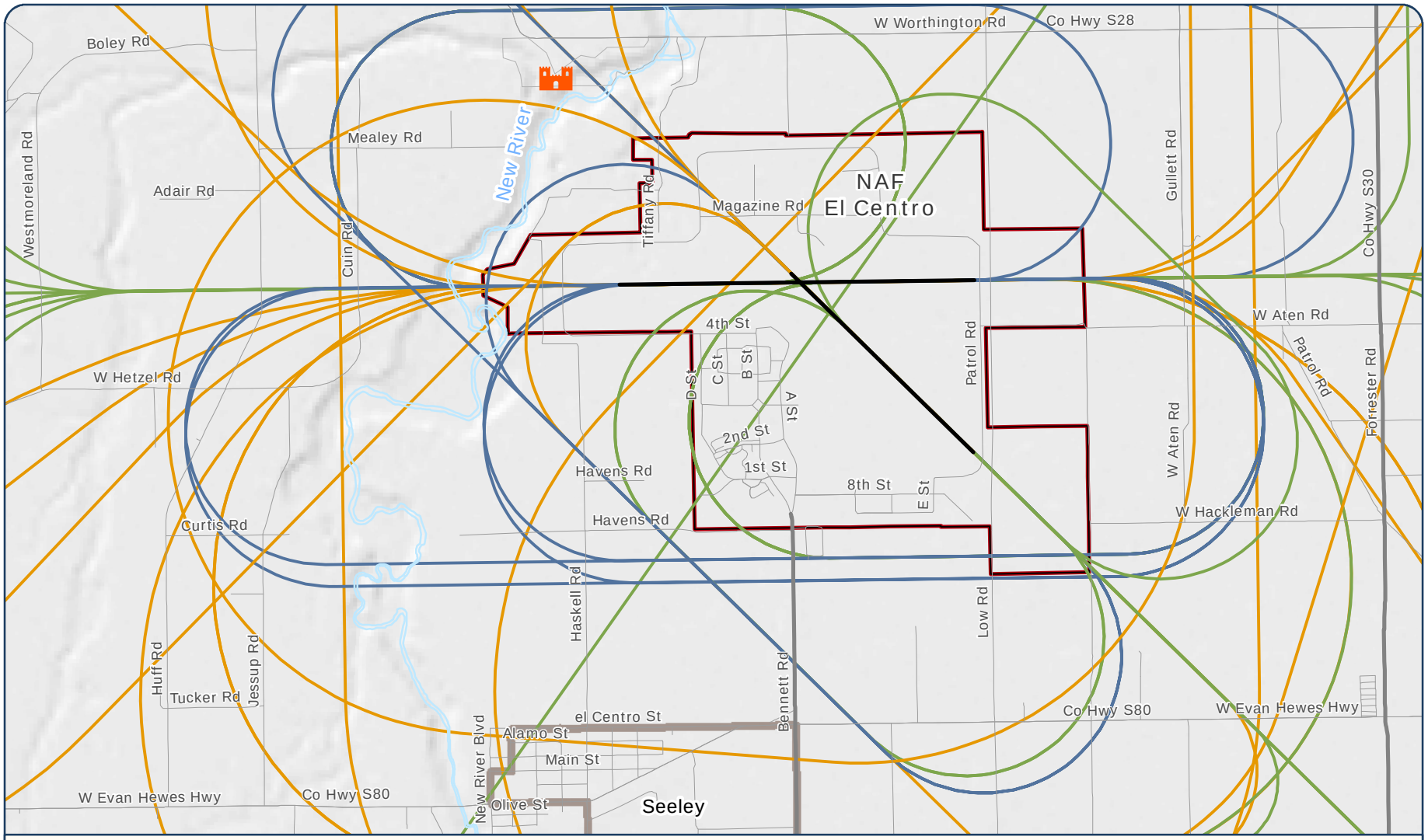
## EXISTING TOOLS

### Integrated Cultural Resources Management Plan

Pursuant to the Integrated Cultural Resources Management Plan (ICRMP), the cultural resources management program at NAFEC is structured in accordance with U.S. Navy policy as established by Chief of Naval Operations Instruction 5090.1C. The program identifies key roles and responsibilities for the management of cultural resources. NAFEC does not maintain an on-staff Cultural Resources Professional and relies on qualified cultural resources personnel from the Commander Naval Region Southwest (CNRSW) Cultural Resources Program Office (CRPO) fulfill this role. NAFEC also relies upon CNRSW CRPO personnel to select contractors who meet the Secretary of the Interior's professional qualification standards for archaeology and historic preservation pursuant to 36 CFR 61.

The ICRMP has identified the need to improve the cultural resources management program at NAFEC including:

- Designation of a cultural resources manager.
- Developing a programmatic agreement for the installation ranges.
- Completing the installation cultural resources inventory.
- Evaluating identified resources for the National Register of Historic Places (NRHP).
- Implementing a resource re-identification and stewardship program.
- Developing a collections care policy.




**Legend**

Fort Romualdo Pacheco

**Fixed-Wing Flight Track**

- Approach
- Departure
- Closed Pattern

NAF El Centro

Unincorporated Community

Major Road

Local Road

River

0 0.5 1 Mile

Source: NAF El Centro, 2013.

**Figure 5-21**
**Fort Romualdo Pacheco Concern**

*Fig_5-21_NAFEC_JLUS_Fort_Romualdo_Pacheco_20131104_JKC.pdf*

- Increasing coordination with the El Centro BLM office.
- Maintaining cultural resources records.
- Offering cultural resources training to key installation staff.
- Promoting public education and participation.
- Formalizing consultation efforts, consulting annually with Native Americans.
- Providing annual updates to the ICRMP.

Section 1.7 of the ICRMP recognizes that activities supporting NAFEC and tenant missions may affect previously identified or unidentified historic properties. Though Fort Romualdo Pacheco is not considered a traditional cultural site associated with local traditional beliefs and practices, such traditional cultural sites are eligible for inclusion in the NRHP. Cultural resources that have not been evaluated for National Register of Historic Places (NRHP) eligibility should be evaluated before an activity that can damage or destroy a site is conducted.

Impacts on historic property that affect the characteristics that qualify it for the NRHP are considered a significant effect on the environment. Under 36 CFR 800.5(a)(2), adverse effects on historic properties include, but are not limited to the following:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property which causes its deterioration.
- Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

Any number of military and non-military impacts can cause damage to known and unknown cultural resources. These include training exercises, new construction, demolition, site work, bombing exercises, landscaping activities, road widening, etc.

*Sources: Integrated Cultural Resources Management Plan for Naval Air Facility El Centro, Imperial County, California, U.S. Navy, 2013*

## 17. Legislative Initiatives

*Legislative initiatives include those existing and proposed federal, state, and local laws and regulations that may have a direct or indirect effect on a military installation to achieve its current or future mission.*

Federal, state, and local legislative initiatives are important regulatory tools to guide the actions of both local jurisdictions and the military installation. Because legislation is not mutually exclusive, it fosters an environment where both parties must work together in partnership to improve operational and community sustainability objectives.

| Issue LI-1 | **BLM withdrawal agreement of the Military Influence Area will expire in 10 years.** The concern of the withdrawn lands returning under BLM control can potentially cause encroachment of military training exercises due to lengthy coordination procedures with BLM to use the area for range training exercises. |
|---|---|

There is an established process for renewing and / or extending the agreement authorizing the withdrawn lands from BLM to the NAFEC for military training exercises.

Public Law 104-201, also known as the Defense Authorization Act of 1997, approved the withdrawn lands from BLM for military training exercises in Imperial County, California NAFEC. This law, enacted February 5, 1997, terminates 25 years from the effective date in 2022. The law also contains

various components including management of withdrawn lands and the renewal process between the federal agencies. The following measures will be taken at least three years in advance of the expiration date of the withdrawn lands:

- The Secretary of the Navy shall advise the Secretary of the Interior as to whether or not the Secretary of the Navy will have continuing military need for any of the lands withdrawn under this law after the termination date.
- If the Secretary of the Navy concludes that there will be a continuing military need for any of the lands withdrawn under this law after the termination date, the Secretary shall file an application for extension of the withdrawal and reservation of such needed lands in accordance with the regulations and procedures of the Department of the Interior applicable to the extension of withdrawals of lands for military uses.
- The Secretary of the Navy shall publish an environmental impact statement concerning continued or renewed withdrawal of any portion of the lands withdrawn under this law for which the Secretary intends to seek such continued or renewed withdrawal. Such environmental impact statement shall be consistent with the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) as well as the California Environmental Quality Act of 1970 (CEQA). Prior to the termination date specified in Public Law 104-201, the Secretary of the Navy shall hold a public hearing on any draft environmental impact statement published pursuant to this action. Such hearing shall be held in the State of California in order to receive public comments on the alternatives and other matters included in such draft environmental impact statement.

This withdrawal and reservation made under PL 104-201 may not be extended or renewed except by a law enacted by Congress after the date of the enactment of this law.

*Source: Public Law 104-201, Defense Authorization Act of 1997.*

This issue will be addressed by the U.S. Navy and the Department of the Interior pursuant to the process as outlined above. No additional assessment of this issue was required.

## 18. Water Quality and 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. Water supply for agriculture and industrial use is also considered.*

While no issues were identified for water quality and quantity, it is important to monitor military operations and community activities relative to water quality and quantity and associated compliance with state and federal Laws.

## 19. Biological Resources

*Sensitive biological resources include federal and state listed species (threatened and endangered species) and their habitats. These resources may also include areas such as wetlands and migratory corridors that are critical to the overall ecosystem. The presence of sensitive biological resources may require special development considerations and should be included early in the planning process.*

### COMPATIBILITY ASSESSMENT

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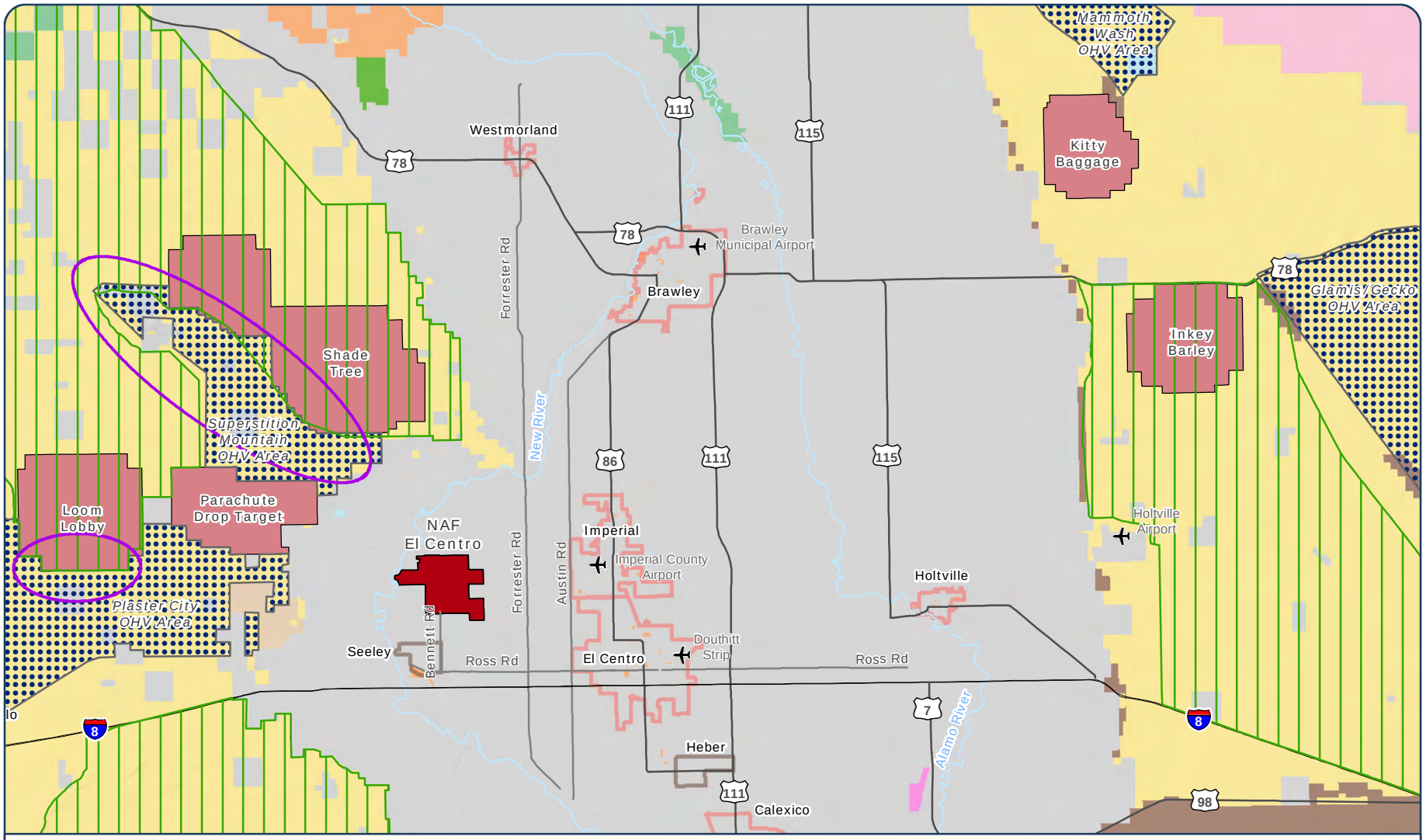
|---|---|
| **Issue BIO-1** | **Management of sensitive species and habitat can impact NAF El Centro mission.** Future development and recreational use may impact sensitive species and habitats and create an environment where military areas become resource islands, impacting current and future use of range areas. |

Multiple areas occupied by species of concern overlap with public and military uses as illustrated by Figure 5-22. In addition to pressures resulting from these uses, the land is prime habitat for the flat-tailed horned lizard. The challenge with multiple-use lands is the management of a vast area and limited resources to provide adequate management.




**Legend**

- Areas of Species Management Concern
- Flat-Tailed Horned Lizard Habitat
- OHV Area

**Land Ownership**

**Federal Land**
- Bureau of Land Management
- Bureau of Reclamation
- Other DOD
- Fish and Wildlife Service

**State Land**
- Department of Fish and Game
- Department of Parks and Recreation
- State Lands Commission
- Other

**Other Ownership**
- Local Government
- Private

- NAF El Centro
- Range
- Incorporated City
- Unincorporated Community

- Interstate
- US Highway
- Major Road
- River
- Airport

0 3 6 Miles

Sources: BLM, 2013; CAL FIRE, 2013; BLM, 2013 (digitized by Matrix Design Group).

**Figure 5-22**
**Biological Concerns**

*Fig_5-22_NAFEC_JLUS_Biological_20131104a_JKC.pdf*

As critical habitat is degraded from the use of the lands by the public for recreational or military training purposes, the species either migrate to another area with similar habitat or are exterminated. Species migration to undisturbed habitat is a concern for the military since these areas can create a refuge on the installation resulting in an encroachment that impairs or impedes valuable and costly training and military readiness operations.

Military installations with these refuge-like habitats have modified training exercises during a particular time of year due to a species migration and breeding cycles. This refuge-like situation resulted from urbanization and the degradation of habitat outside the installation. Species management can become critical for military preparedness.

Another concern stemming from species migrations is the overlapping of multiple agency management responsibilities and determining where one agency's authority starts and stops. This challenge can further delay management actions and impede military operations and valuable training.

## EXISTING TOOLS

### Memorandum of Understanding between the Department of the Navy, Bureau of Reclamation, and Bureau of Land Management

This memorandum of understanding (MOU) defines the land management responsibilities for each agency in the West and East Mesas including specific mitigation measures for recreation management in the area. The MOU states that BLM retains all management authority over the lands found in Range Compatibility Zones B and C. Mitigation measures include, but are not limited to:

1. Navy shall maintain fencing or/and signage along Imler and Huff roads, denying public access.
2. BLM agrees to close to the public portions of the lands.
3. Competitive events may be scheduled in R-2510 but only 6,000 ft outside the exclusion area.
4. BLM and the Navy will furnish an event coordinator to ensure coordination of said events.
5. 12 events a year, at least, must be allowed in this area.
6. Coordination between BLM and the Navy is well defined for recreation management in this area.

Although this MOU outlines responsibilities for recreation management - one of the threats to wildlife in the West and East Mesas, the MOU does not define the roles for wildlife and habitat management.

The MOU indicates that BLM shall retain management responsibilities for any land uses not specifically identified in the MOU and manage land uses excluded from the MOU in a manner consistent and compliant with existing plans, applicable laws, and regulations and policies.

### Flat-tailed Horned Lizard Rangewide Management Strategy

The Flat-tailed Horned Lizard (FTHL) Rangewide Management Strategy includes provisions for the conservation and management of FTHL habitat in prime habitat area including southeastern California. The plan identifies five management areas where the protections and the provisions are applicable. These management areas include the West and East Mesas in Imperial County. In the West Mesa management area, there is approximately 29,800 acres withdrawn from BLM for military use; the remaining area is owned by multiple agencies. In the East Mesa management area, there are 8,500 acres withdrawn for military use.

The plan identifies activities that threaten the species and habitat. The activities include, but are not limited to OHV use, military activities, and development of utility lines and geothermal facilities.

The plan also identifies characteristics that increase the mortality rate of FTHL. One of the characteristics includes habitat disturbances within a small area. The FTHL freezes and remains stationary when it senses danger. This increases the likelihood that the FTHL would be physically impacted / hit by users of roadways and trails since they are found in valleys and flats where residential and agricultural uses occur.

The plan identified the following objectives for FTHL area management:

1. Continue to secure and/or manage sufficient habitat to maintain self-sustaining FTHL populations in each of the five designated management areas, i.e. Yuma Desert, East Mesa, West Mesa, Yuha Desert, and Borrego Badlands and in areas designated by the Coachella Valley Multiple Species Habitat Conservation Plan.
2. Maintain a "long-term stable" or increasing population of FTHLs in all management areas.
3. Continue to support research that promotes conservation of the species and elsewhere throughout the range of the species.
4. Within and outside of the management areas, limit the loss of habitat and effects on FTHL populations through the application of effective mitigation and compensation.

The mitigation and / or compensation measures include but are not limited to the following:

1. Limit land use authorizations that would cause surface disturbance within the management areas.
2. Limit and/or reduce surface disturbance in management areas from discretionary minerals actions.
3. Limit vehicle access and limit route proliferation within management areas.
4. Limit the impacts of recreational activities within management areas.
5. No competitive motorized vehicle recreational events permitted within management areas. A competitive event is any event where speed or elements of competition, i.e., win, lose occur. Non-competitive events may be allowed on routes designated open for public use during the FTHL season of hibernation. Other types of vehicle-based recreation except camping in compliance with current regulations may occur within management areas.
6. Allow currently authorized non-motorized recreational activities, such as hiking, backpacking, non-vehicle based camping, picnicking, bicycling, horseback-riding, hunting, bird watching, and nature study, in all management areas and the resource area in accordance with existing regulations.
7. Within the management areas, allow off-road military maneuvers and encampments only in designated sites. Allow other military activities on previously disturbed lands managed by DOD agencies consistent with normal operations and functions.
8. Suppress fires in management areas and BLM-administered lands in the resource areas using a mix of the following methods: 1) aerial attack with fire retardants, 2) crews using hand tools to create fire breaks, and 3) mobile attack engines limited to public roads, designated open routes, and routes authorized for limited-use. Do not allow earthmoving equipment, i.e. bulldozers except in critical situations to protect life, property, or resources.

### Imperial Sand Dunes Recreation Area Resource Management Plan

The Imperial Sand Dunes Recreation Area Resource Management Plan (RMP) identifies several measures that BLM has employed to manage the FTHL habitat in the West Mesa areas. They include but are not limited to species monitoring and recording to determine population numbers and coordination with the military if the species is sighted on withdrawn lands.

The Integrated Natural Resource Management Plan (INRMP) is currently under development by the Navy. The INRMP typically addresses measures that the U.S. Navy employs to protect species and their habitat while allowing the military to maintain training.

## 20. 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.*

The NAFEC JLUS Study Area did not warrant an assessment of marine environments due to the geographic location of the installation and the training ranges and the lack of marine environments within these areas. No additional assessment was performed for this compatibility factor.

## 21. 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.*

### COMPATIBILITY ASSESSMENT

| Issue SNR-1 | **Mining Activities.** Concern about mining activities in Imperial County could potentially impact NAF El Centro training mission. |
|---|---|

Mining activities on NAFEC ranges within Imperial County are incompatible with existing land uses. Mining equipment can be large and penetrate navigable airspace. This penetration can create visual obstructions leading to aircraft collisions and result in increased risks to pilot and property beneath flight operations. This issue was discovered during review of the BLM RMPs. The RMPs do not include military stipulations for mineral leasing within the JLUS planning area. These RMPs are:

- California Desert Conservation Area Plan, 1980.
- Northern and Eastern Colorado Coordinated Management Plan, 2002 (Amendment to the 1980 California Desert Conservation Area Plan).
- Imperial Sand Dunes Recreation Area Management Plan, 2013.
- Western Colorado Desert Coordinated Management Plan, 2003 (An Amendment to the 1980 California Desert Conservation Area Plan).

It should be noted that the mineral leasing, geothermal resources, and other renewable resources that may occur on BLM-withdrawn lands are stipulated within the Memorandum of Understanding (MOU) between the Department of the Navy (DON), the Bureau of Reclamation (BOR), and the BLM. The MOU is otherwise referred to as Public Law 104-201 and discussed in this section under the Legislative Initiatives factor.

### EXISTING TOOLS

#### Public Law 104-201

Public Law 104-201 stipulates the procedures for coordinating with the U.S. Navy for the use of public lands relative to mineral resources exploration, extraction, and development including geothermal resources. In addition to stipulating required intergovernmental coordination between the DON and BLM, this law establishes permitted heights and types of land uses applicable for these BLM withdrawn lands associated with the NAFEC ranges.

The following stipulations apply to BLM-withdrawn lands for the NAFEC range safety zone A (RSZ A):

- All forms of appropriation under the public land laws, including the mining laws, but not the mineral leasing or geothermal leasing laws or the mineral materials sales laws.

For BLM-withdrawn lands within Restricted Airspace 2510, R-2510 - West Mesa, and R-2512 East Mesa located within RSZ A, BLM may issue a lease, easement, right-of-way (ROW), or any other authorization for any non-military use lands. Prior to issuance of a lease or authorization, BLM must have concurrence from DON in accordance with the provisions in the MOU. Any OHV events must be coordinated by BLM with the NAFEC Commanding Officer on a non-interference basis. Within the target areas West Mesa - Targets 101 and 103 and East Mesa – Targets 68 and 95, a 6,000 foot exclusionary area exists where no land activity is permitted due to safety risks associated with the area. The height restriction is set at zero feet.

The only exception to these provisions involves the right-of-way for the US Gypsum Railroad within the RSZ A of West Mesa.

The following stipulations apply to BLM-withdrawn lands for the NAFEC RSZ B:

- The Navy has applied for a right-of-way in this area.

While the BLM reviews the Navy's right-of-way application for appropriate legal descriptions, BLM will maintain management responsibilities over land within RSZ-B. The BLM recognizes the military operations in this area and understands through the AICUZ study that there may be land uses incompatible with military operations.

The BLM has established land use provisions and height restrictions for RSZ-B areas located within both West and East Mesas. The BLM outlined the following prohibited uses that conflict with military operations:

- Heavy agriculture, i.e. feed lots, dairies.
- Residential, i.e. single family, 1 du / 40 ac.
- Public / Quasi-Public facilities, i.e. schools, churches.
- Commercial-retail, wholesale, and professional uses.
- Utility corridors, overhead and buried power-lines.

The following land uses could conflict with military operations but may be designated as compatible on a case-by-case basis and in coordination with the NAFEC Commanding Officer:

- Energy resources extraction and development.
- Mining.
- Outdoor recreation for off-road vehicle use unless otherwise expressly stated in the MOU.
- New proposed roads and structures.
- Light agriculture, i.e. crop farming.

In addition to outlining the prohibited and potentially compatible land uses for the land within RSZ B, the MOU prescribes a height restriction of 20 feet.

Aside from the stipulations outlined for RSZs A and B, the MOU also identifies prohibited and potentially compatible land uses for RSZ C. This area is and will be maintained by BLM and Bureau of Reclamation for the duration of the MOU. The BLM will coordinate with the DON in the instance of potential conflicting uses between public lands and military operations within this area. Prohibited uses within RSZ C located in either West or East Mesa include:

- Public / Quasi-Public facilities, i.e. schools, churches.

Potentially incompatible uses are evaluated on a case-by-case basis after coordination with the NAFEC Commanding Officer:

- Heavy agriculture, i.e. feed lots, diaries.
- Commercial-retail, wholesale, and professional.
- Utility corridors (overhead and / or buried power lines).

The height restriction for this area is between 20 and 200 feet. The MOU does not expressly state coordination is required with the FAA for activities that require the construction of structures that reach or exceed 200 feet.

*Source: Public Law 104-201, Withdrawal Act Concerning BLM Lands and NAF El Centro Ranges, 1997.*

### California Desert Conservation Area Plan

The California Desert Conservation Area Plan (CDCA) was adopted in 1980. The CDCA plan does not stipulate mineral leasing procedures for BLM lands regardless of withdrawal for military purposes within Imperial County. While the CDCA plan recognizes the need to coordinate with intergovernmental agencies, this plan does not specifically address the coordination with adjacent and nearby military installations, nor does the plan specifically refer to PL 104-201 to assist potential mineral developers with mineral exploration, extraction, and development.

Other BLM RMPs developed across the State of California have directly stated procedures for coordinating with the military for subsurface mineral exploration, extraction, and development.

*Source: Bureau of Land Management: California Desert Conservation Area Plan, 1980.*

## 22. Land and Air Spaces

*The military manages or uses land and air space to accomplish testing, training, and operational missions. These resources must be available and of a sufficient size, cohesiveness, and quality to accommodate effective training and testing. Military and civilian air operations can compete for limited air space, especially when the airfields are in close proximity to each other. Use of this shared resource can impact future growth in operations for all users.*

The land, air, and sea spaces used by the military can be owned by the DOD, designated for DOD use by a federal or state agency, provided through easements or other agreements with public or private entities, or maintained as a historic usage right. Public and private requests to share or assume some of these resources may have a negative impact on military training and test objectives.

### COMPATIBILITY ASSESSMENT

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|---|---|
| **Issue LS-1** | **Recreational uses adjacent to NAF El Centro ranges.** Lack of rule enforcement and issuing fines for misuse of recreational activities in the vicinity of NAF El Centro ranges can cause mission constraints. |

There are approximately 54, 000 acres encompassed in the NAFEC Range Complex in Imperial County. The military shares the land uses known as the West and East Mesa areas with BLM. The military lands used for live bombing practice and air maneuvering are restricted from recreational uses at all times. Public OHV activities are conducted adjacent and proximate to these military operational areas, specifically in Plaster City in West Mesa and Glamis in East Mesa.

This land is open to recreational uses and other wilderness area uses as illustrated in Figure 5-23. This land is policed by BLM Rangers due to the need to control and manage sensitive habitat and the risk of safety associated with military operations, but there are only two Ranger stations in the entire East Mesa area. The limited Ranger stations cause concern since there are inadequate resources to police and enforce this large recreational and wilderness area.

Signage at target area perimeters is posted on fences to provide warning to recreationalists about the dangers associated with military operations. This signage and the lack of complete fencing around military targets often go unnoticed or ignored since signs are often intentionally removed or stolen. This lack of awareness creates increased safety risks for the intentional and unintentional trespassing individuals and can create impediments to NAFEC training activities and military readiness.

*Source: NAF El Centro Master Plan Update, 2012.*

## EXISTING TOOLS

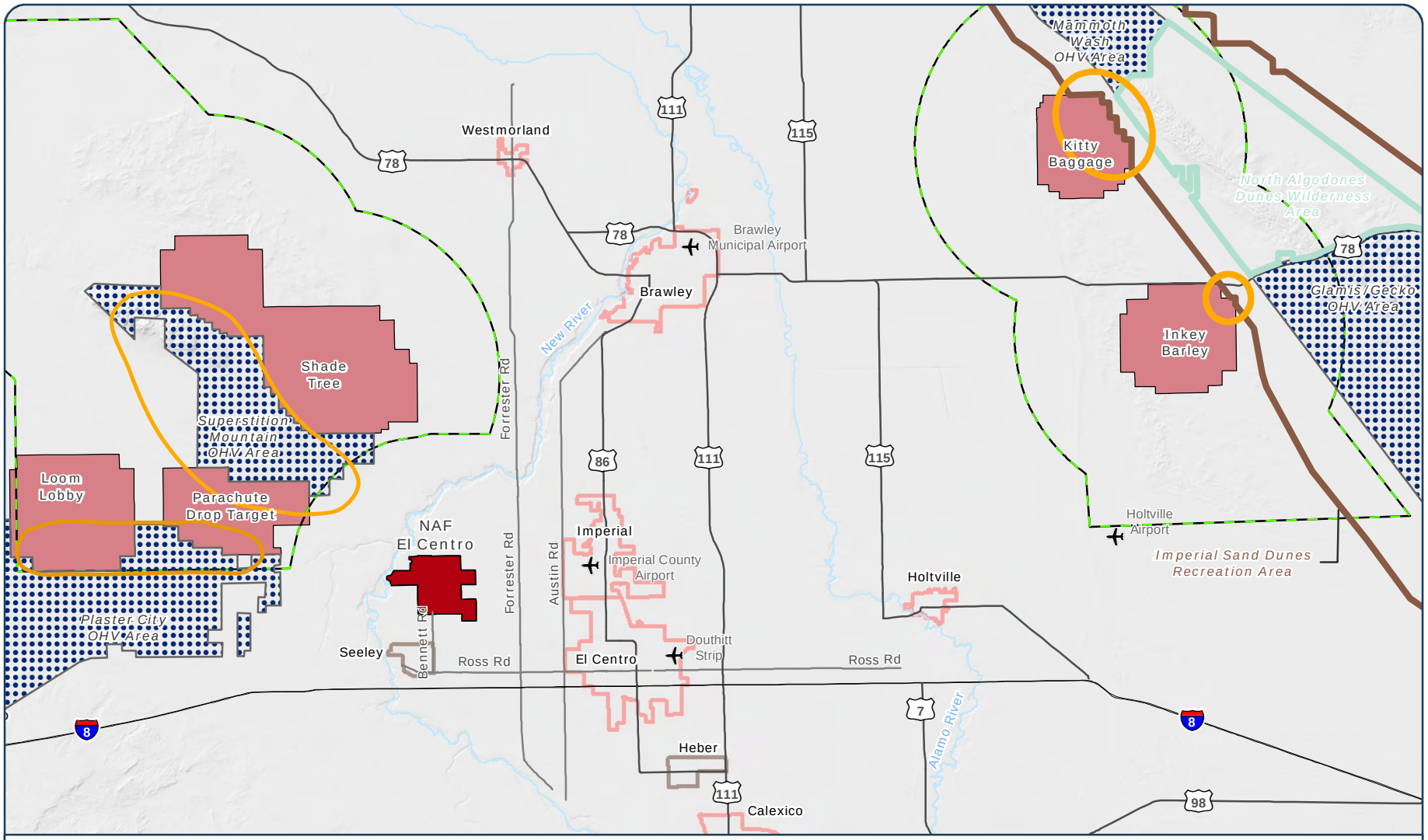
### BLM Imperial Sand Dunes Recreation Area Business Plan

The BLM Imperial Sand Dunes Recreation Area (ISDRA) developed a business plan to realign the fee structure for recreation activity on these dunes to maintain the current level of service for the public. The BLM identified the in-season October – May and Holiday weekends and off-season needs of the BLM for five business lines including law enforcement and emergency and visitors services. In addition to identifying the needs and relative full-time equivalent positions required to satisfy each of these business lines, BLM also identified available funding resources including grant monies currently received by BLM and encouraging the application and use of other special grant monies to aid in funding the ISDRA maintenance and operations.

The plan currently calls for in-season staffing of two to four BLM rangers. These rangers patrol the ISDRA 75 percent of the time during a seven-day week. During the peak holiday weekends, the plan calls for an additional 13 to 22 rangers to patrol the ISDRA.

During the off-season, the staffing requirement is 20 percent of the in-season staffing level to manage the ISDRA. This time is typically spent patrolling the ISDRA at nighttime and performing daily case work during other parts of the day.

In addition to the base funding received by BLM, they actively apply for state grant monies to assist the law enforcement and emergency and visitors services business lines for OHV recreational activity, i.e. California State Off-Highway Motor Vehicle Recreation grant program. The BLM has been a multi-year recipient of this grant award and used the funding to




Sources: BLM, 2013; NAF El Centro, 2013; BLM, 2013 (digitized by Matrix Design Group).

**Figure 5-23**
**Recreational Use Concerns**

*Fig_5-23_NAFEC_JLUS_Recreational_Use_20131104_JKC.pdf*

provide additional law enforcement and emergency and visitors services support. These grant monies are managed by the State of California and the state is grappling with declining budgets for the foreseeable future. Complete and continued reliance on this funding source is unrealistic.

The BLM will continue to apply for this grant along with others that may be more suitable to support other business lines and reallocate base funding monies from the federal government to law enforcement and other unfunded business lines.

The BLM has also implemented cost-savings measures to ensure the sustainability of the ISDRA. These cost-saving measures not only include cutting excess maintenance contracts from the agency budget, but also include partnerships with local law enforcement agencies and hospital and emergency services to supplement BLM Rangers and Emergency Services staffers. The following list outlines the various areas where BLM has provided dual benefit to the public and the military through partnering and cost-cutting.

- Improvements to signage from sign sponsors that incidentally reduced the need to continually replace signs as a result of vandalism.
- A reduction in a trash collection contract cost from approximately $400,000 to $200,000.
- In-house cleaning of vault toilets – eliminating a $100,000 contract.
- A long-standing partnership with Imperial County to provide assistance with law enforcement efforts in the ISDRA.
- A partnership with U.S. Border Patrol to provide additional search and rescue (SAR) / emergency management services (EMS) and law enforcement during high visitation periods – thus reducing reliance on BLM enforcement officers and lowering overall operational costs of the enforcement program.
- Various partnerships with local hospitals and emergency transport services to provide additional SAR / EMS capabilities.
- Reduced law enforcement staffing for holiday weekends by 70 percent from historic average to the minimum levels required by BLM policy.
- Increased efficiency in EMS staffing for holiday weekends by reducing the number of staff and increasing the number of hours each staff person works – this reduction of staff / increase of existing staff hours – reduced costs for this business line on these weekends by 26 percent.
- Use of volunteers for a wide variety of tasks, from dune clean-ups to routine visitor services.

While these measures adequately cover the East Mesa area, the West Mesa area is experiencing similar issues. The West Mesa land under the control of BLM includes Plaster City Open Area and Superstition Mountain Open Area.

These open areas are adjacent to live-bombing, military operating areas and are a concern to both the military and BLM for public use. The BLM does not require user or visitor fees for access to these areas so they are less likely to be patrolled by BLM Rangers. The BLM sends Rangers out to these areas to issue and enforce trespassing violations and OHV permit citations. The frequency of BLM patrols in the West Mesa Open Areas is in direct competition with its East Mesa counterpart. This is because the East Mesa area is a larger area and requires more attention relative to law enforcement, emergency and visitor services, sensitive resources management, and frequency of users to the ISDRA or East Mesa Recreation Areas.

*Sources: Bureau of Land Management: Imperial Sand Dunes Recreation Area Business Plan, 2013; Bureau of Land Management: Plaster City Open Area Web Fact Sheet, 2013; Bureau of Land Management: Superstition Mountain Open Area Web Fact Sheet, 2013.*

## COMPATIBILITY ASSESSMENT

| Issue LS-2 | **New Airports.** As sites for future commercial airports are evaluated, need to ensure they are sites to avoid conflicts with Holtville, auxiliary fields or NAF El Centro. |
|---|---|

A proposed new airport is being developed in the vicinity of the NAFEC airfield and training ranges. How the aviation patterns and activities associated with new airports will affect the training at NAFEC is a concern. The DEIS for the West Coast homebasing of the U.S. Navy F-35C evaluated civilian and military aviation traffic with regard to the operational increases at NAFEC. Imperial County commissioned a feasibility study to evaluate areas within the county for a regional air cargo facility including the Holtville Airport. Figure 2-6 in Chapter 2, Community Profile provides an illustration of all the proposed sites for the regional air cargo facility in Imperial County.

## EXISTING TOOLS

### Draft EIS for F-35C Homebasing

The military currently performs modified training activities within the existing airspace and is considerate of the nearby Imperial County Airport. Aircraft approaching Runway 26 from the west must maintain an altitude of 2,500 feet when flying over the Imperial County Airport. Aircraft then descend to altitude of 1,500 or 800 feet depending on the type of training activity performed, at a point west of Forrester Road. When making a southeasterly approach to Runway 26, military aircraft must also maintain a similar high-to-low altitude until reaching Forrester Road after which the aircraft can descend to desired altitude to complete the operation.

The Navy indicated that general aviation associated with Imperial County Airport and Brawley Municipal Airport would not be affected by increased military training operations in the area. The Navy is able to offer assurances through a combination of tools already in use including: minimal use of some of airways, an altitude separation for military and civilian aircraft, and low increases in the use of some of SUAs.

The DEIS indicated that there might be less opportunity for civilian aircraft to use the existing SUAs when activated for military users, but no significant impacts were found between increased military training operations and civilian aviation activity in the area.

*Source: Draft Environmental Impact Statement for US Navy F-35C West Coast Homebasing, 2013.*

### Airport Feasibility / Site Analysis Study for Imperial County

The Imperial County Airport Feasibility / Site Analysis Study considers the proximity of both the NAFEC airfield and the Imperial County Airport by prescribing in greater detail the modified aviation patterns that the military and civilian pilots must follow to de-conflict operations between military and civilian activities. The intent of this study is further described in Chapter 4, Existing Compatibility Tools.

This study, consistent with the AICUZ study, establishes a “Low Altitude Airport Traffic Boundary line” at Forrester Road. Forrester Road was determined the optimum location for this boundary since it is midway between the NAFEC airfield and Imperial County Airport. NAFEC agreed to provide advisory services to Imperial County Airport traffic to the extent possible.

This study also outlined procedures for departure of civilian aircraft from the Imperial County Airport Runway 26. The departure procedure is for the aircraft to remain east of Forrester Road by performing a right turn as soon as practically possible after takeoff and banking to a minimum heading of 310 degrees. The communication frequency to communicate intentions and receive advisories was established for civilian pilots as 119.1 megahertz.

While no decision has been made for the siting of a regional cargo facility, the Imperial County study demonstrated compatibility planning relative to interagency coordination and communication with the Navy. The following excerpt from the study’s plan of action describes the current coordination and establishment of future coordination efforts:

*"**4) Brief the local military command (NAF El Centro)** The military installations in Imperial County are important not only to the national defense, but also to the area economy. NAF El Centro was represented on the Planning Advisory Committee, and was also represented at the discussions with the FAA involving airspace of the candidate sites. This briefing will update the Department of Defense on the County's plans and maintain lines of communication and coordination through the remaining steps."*

*Source: Airport Feasibility / Site Analysis Study for Imperial County, 2007.*

## 23. 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.*

Although the NAFEC JLUS Study Area did not warrant an assessment of frequency spectrum capacity issues, frequency spectrum impedance / interference issue were relevant and discussed in this study in the Frequency Spectrum Impedance / Interference section of this chapter.

No additional assessment was performed for this compatibility factor.

## 24. Roadway Capacity

*Roadway 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.*

As urban development expands into rural areas, roads once used primarily to provide access for agricultural uses and limited local traffic begin to function as urban major arterial roadways. These once rural roads often become the main transportation corridors for all types of traffic - from residential to commercial trucking – and can assist or impede access to military installations. As transportation systems grow and provide more capacity, these facilities induce and encourage growth as rural areas become more accessible.

| Issue RC-1 | **Major development or increase in mission at base would require roadway maintenance or enhancement.** Current plans do not project increased development or roadway issues, but this should be reviewed as plans for infrastructure improvements or mission realignment occur. |
|---|---|

There are two major corridors currently planned for expansion—Forrester Road and Austin Road. These two roadways are currently two-lane arterial roads planned for widening into six-lane divided arterials. These improvements will provide greater roadway capacity, but can also encourage incompatible development west of Austin Road.

### Imperial County General Plan

According to Imperial County's General Plan Circulation Element, the county requires new development to make concurrent roadway improvements to accommodate added capacity and operational requirements generated by the development. These improvements are generally identified by a traffic study. Although, the element does not expressly identify coordination with the Navy, the county does require indirect coordination pursuant to the element goals and objectives. The goals and objectives that encourage compatible planning and development and coordination are as follows:

**Goal 1.** The County will provide and require an integrated transportation system for the safe and efficient movement of people and goods within and through the County of Imperial with minimum disruption to the environment.

**Objective 1.9.** Identify busy agricultural roads to create special crossings for farm equipment.

**Objective 1.11.** Improve County circulation system roadways in concert with land development to ensure sufficient levels of service.

**Objective 1.12.** Review new development proposals to ensure that the proposed development provides adequate parking and would not increase traffic on existing roadways and intersection to a level of service (LOS) worse than "C" without providing appropriate mitigations to existing infrastructure. This can include fair share contributions on the part of

developers to mitigate traffic impacts caused by such proposed developments.

**Objective 1.13.** Work with adjacent jurisdictions and transportation agencies to identify necessary improvements to the regional roadway system to ensure adequate interregional and intraregional access throughout the County.

**Objective 1.16.** Design transportation corridors to be co-located/joint use (within the ROW) with transmission, water and other infrastructure corridors to the extent possible.

**Goal 3.** Develop alternative transportation strategies designed to reduce traffic volumes and improve traffic flow. This includes providing alternatives to residents such as pedestrian, bicycle and public transit options.

**Goal 5.** Participate in and assist with coordinating regional efforts which integrate the County Transportation System with the Regional Transportation System.

**Objective 5.3.** The County shall cooperate with the adjacent communities and agencies such as the Federal Government, State Department of Transportation (Caltrans District 11), El Centro, Brawley, Calexico, Holtville, Imperial, Westmorland, and Calipatria to provide the maximum compatibility of adopted circulation elements and regional facility plans, provided however that the minimum standards of this element are maintained.

The specific general plan policies that implement these goals and objectives are as follows:

*Seek to work cooperatively with the Cities to require that development is their jurisdiction, also to contribute its fair share to County road improvements.*

*It shall be the policy and direction under this circulation element that the dedication of rights of way and street improvements as a condition of issuance of a building permit and/or land use development application shall be required. All such rights of ways established in the functional road classifications shall be protected and procurement of needed rights of ways and improvements shall be made wherever possible. The County Planning and Development Services Director in conjunction with the County Road Commissioner shall review every building permit and land use development application in regards to obtaining the necessary right of ways and public improvements as a condition of permit issuance. This shall also be performed during the CEQA review of any projects which fall under the CEQA Guidelines. All setbacks established by County Ordinance shall be deemed to commence from the edge of ultimate right of ways on any parcel or property fronting on a public street, right of way, or any other public transit corridor and not from the property line.*

*The County shall actively continue all efforts to standardize street design requirements with all Cities.*

*The County shall encourage the reduction of vehicle miles, reduction of the total number of daily peak hour vehicular trips, and provide better utilization of the circulation system through development and implementation of Transportation Demand Management and Transportation Systems Management programs. These may include implementation of mandatory peak hour trip reduction, requirements for staggered work hours, telecommunications, increased development of employment centers where transit usage is highly viable, encouraging ride sharing in the public and private sector, provision for park and ride facilities adjacent to the regional transportation system, preparation of Traffic Management Plans and provision for transit subsidies.*

*Source: Imperial County General Plan Circulation Element, 2008*

## City of El Centro General Plan

The City of El Centro's General Plan Circulation Element contains goals and policies that guide transportation improvements and associated development to encourage the appropriate level of mobility and access for the city's population. These goals and policies are consistent with the county goals and policies though there is no statement that directly encourages coordination with the Navy. The city's goals and policies that encourage compatibility and coordination with other agencies include:

**Circulation Goal 1.** Provide a system of roadways that meets the needs of the community.

**Policy 1.1.** Provide and maintain a circulation system that is in balance with the land uses in El Centro by implementing the Circulation Master Plan.

**Policy 1.2.** Improve El Centro circulation system roadways in concert with land development to ensure sufficient levels of service.

**Policy 1.7.** Work with adjacent jurisdictions and transportation agencies to identify necessary improvements to the regional roadway system to ensure adequate regional access to and from El Centro.

**Policy 1.8.** Coordinate improvements to the local circulation system with other major transportation improvement programs.

**Policy 1.10.** Encourage site planning and subdivision design that best utilizes available traffic capacity on abutting streets through design techniques such as lot orientation, limitations on intersecting streets, and driveway locations and spacing.

**Circulation Goal 2.** Promote a public transportation network that allows for convenient access to major destinations, both within El Centro, as well as within the region.

**Policy 2.2.** Encourage the increased use and expansion of public transportation opportunities.

**Policy 2.4.** Support ridesharing services and other similar alternative modes of transportation.

**Circulation Goal 4.** Continue to utilize regional airports and railways to facilitate economic development, as well as the movement of people, and establish El Centro as a regional hub of commerce and travel.

**Policy 4.2.** Review development proposals within areas affected by the operation of local airports and railways to ensure land use compatibility, protect the public safety, and allow for continued aviation and rail operations.

**Policy 4.3.** Continue to pursue a joint use agreement with the U.S. Navy to allow commercial jet service at the Naval Air Facility.

*Source: City of El Centro General Plan Circulation Element, 2009.*

## City of Imperial General Plan

The City of Imperial's General Plan Circulation Element includes provisions for the safe and ease of public mobility and access and the movement of goods and services through the city. There are no policies that directly state the city will coordinate with the Navy on transportation planning projects.

The following objectives and policies encourage compatible planning in the City of Imperial:

**Objective No. 1.** Land uses should be planned in conjunction with the circulation system so that they do not overburden the City's existing and / or planned circulation system.

**Policy 1. A.** No land use should be approved that will increase the traffic on a planned or existing City street above the street's existing design capacity at service level "C" without adequate mitigation being provided such as additional traffic lanes or signalization.

**Policy 1. B.** The City should monitor the impact of intra-and intercity land use on circulation systems to ensure that the circulation system is not overburdened.

**Policy 1. C.** Developers of new projects should be responsible for constructing necessary street improvements such as right hand or left hand turn lanes in order to maintain an efficient flow of traffic.

**Objective 3.** Access to major streets shall be limited to maintain capacity, efficiency and the safety of the traffic flow on the City's streets.

**Policy 3. D.** Combined access between adjacent properties shall be considered prior to allowing access to a major street to reduce the overall number and frequency of access points.

**Policy 3. G.** Residential subdivisions shall not be approved with lot access directly to a major or secondary arterial street.

**Objective 4.** The City should use state-of-the-art transportation system management planning programs to increase the efficiency on all of Imperial's street system, while reducing capital costs.

**Policy 4. A.** The City shall encourage ride sharing in both the public and private sectors as a means of reducing overall traffic generation.

**Policy 4. B.** The Circulation Plan should consider future park and ride facility locations.

**Policy 4. C.** The City should work with Caltrans to examine and implement, if feasible, a signal timing plan along Highway 86 to improve traffic flow.

*Source: City of Imperial General Plan Circulation Element.*

## For Additional Information Contact: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