Appendix A

R-2508 JLUS Fact Sheet

California
Joint Land Use Studies

A project of the Governor's Office of Planning and Research

R-2508 Joint Land Use Study

What is a Joint Land Use Study?

A Joint Land Use Study (JLUS) is a collaborative planning effort between active military installations, surrounding counties and cities, and other affected agencies. The JLUS process is funded by a grant from the Department of Defense Office of Economic Adjustment (OEA).

Goals and Objectives

The overall goal of a JLUS is to reduce potential conflicts while accommodating growth, sustaining the economic health of the region, and protecting public health and safety. Like all JLUS programs, the R-2508 JLUS has three primary objectives.

- **Understanding**. Convene community and military installation representatives to study the issues in an open forum, taking into consideration both community and military viewpoints and needs.
- **Collaboration**. Encourage cooperative land use planning between military installations and the surrounding communities so that future community growth and development are compatible with the training and operational missions of the installation and at the same time seek ways to reduce operational impacts on adjacent lands.
- **Actions**. Provide a set of tools, activities, and procedures that local jurisdictions, agencies, and the military can select and use to implement the recommendations developed during the JLUS process.

The California JLUS Program

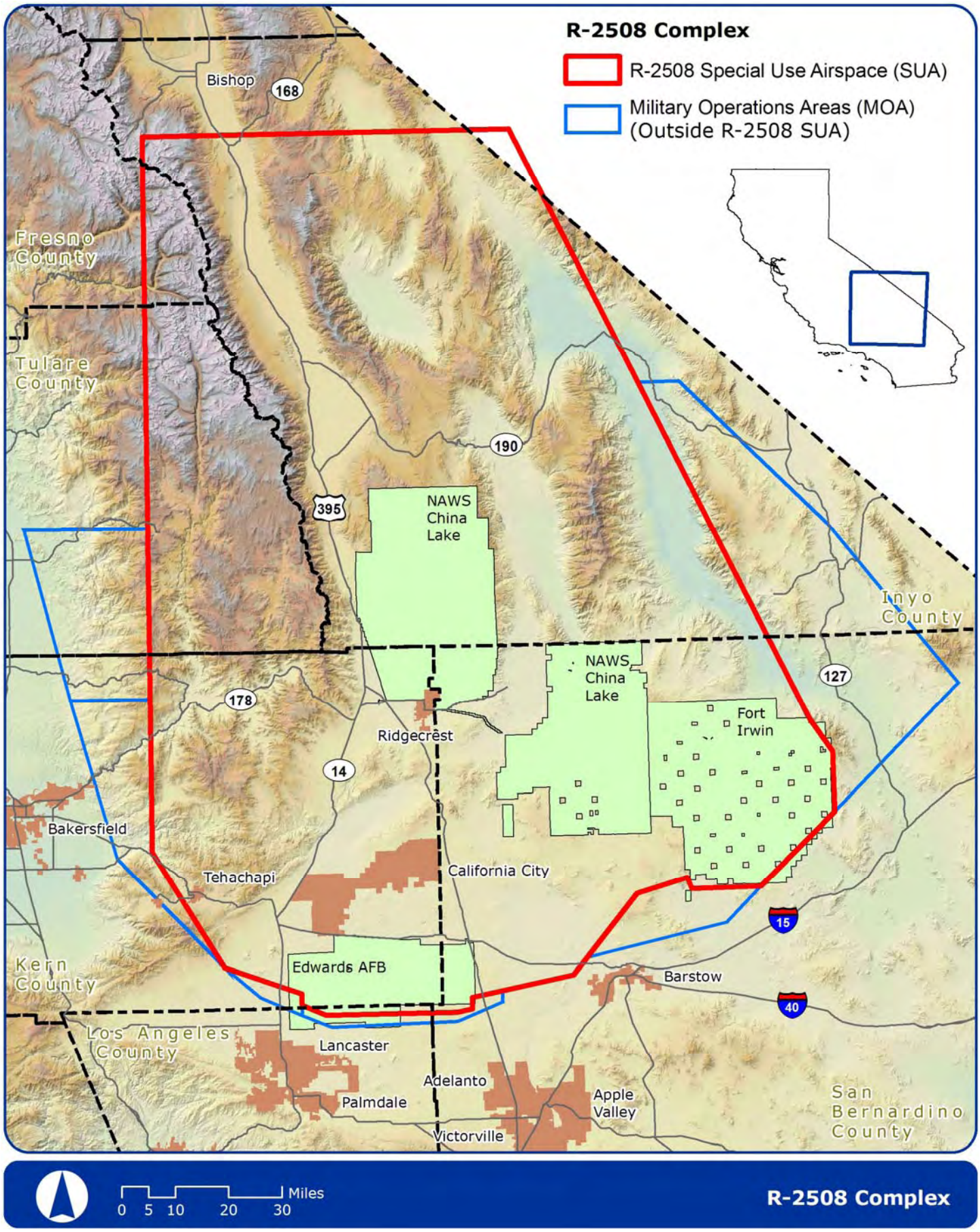
OEA is funding the preparation of two JLUSs in California. Given the large areas covered by these studies and the number of jurisdictions and agencies involved, the California JLUS program is being managed by the Governor's Office of Planning and Research (OPR). The two geographic study areas included in the California JLUS program are referred to as the R-2508 JLUS and the Beale JLUS.

The **R-2508 JLUS** includes Edwards Air Force Base, Fort Irwin, Naval Air Weapons Station China Lake, and the land beneath the Joint Service R-2508 Special Use Airspace Complex and associated military airspace. This 20,000 square mile area encompasses portions of Fresno, Inyo, Kern, Los Angeles, San Bernardino, and Tulare Counties.

The **Beale JLUS** addresses all lands near Beale Air Force Base with a current or potential future impact on military operations at the base, and lands upon which military operations at the base have an actual or potential impact. Given the location of the base within Yuba County, the study area will include the western half of Yuba County and portions of Butte, Nevada, Placer, and Sutter Counties.

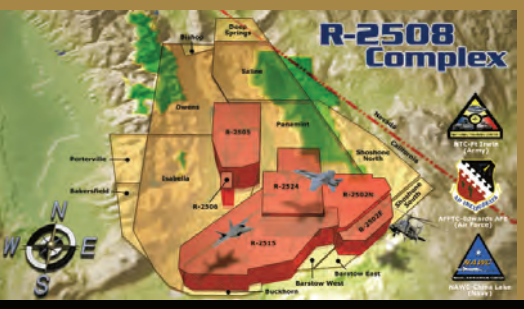
Want to know more?

www.cajlus.com


R-2508 Complex
R-2508 Special Use Airspace (SUA)
Military Operations Areas (MOA)
(Outside R-2508 SUA)
Bishop
168
Fresno County
Tulare County
190
395
NAWS China Lake
Inyo County
NAWS China Lake
127
178
Ridgecrest
Fort Irwin
14
Bakersfield
Tehachapi
California City
15
Kern County
Edwards AFB
Barstow
40
Los Angeles County
Lancaster
Adelanto
Palmdale
Apple Valley
San Bernardino County
Victorville
Miles
0 5 10 20 30
R-2508 Complex

Appendix B

Kern County Height Restriction Zoning Ordinance



B

19.08.160 Height of Structures

A. Radio and television masts, communication towers, flagpoles, light standards, chimneys, and smokestacks, or any appurtenances thereof, may extend not more than forty-five (45) feet above the height limit specified in this chapter for buildings and structures, provided that the same may be safely erected and maintained at such height in view of the surrounding conditions and circumstances. A tower constructed for the purpose of supporting a wind-driven power generator may extend not more than forty-five (45) feet above the height limit specified in this chapter, provided that the same may be safely erected and maintained at such height in view of the surrounding conditions and circumstances.

B. Notwithstanding any other provisions in this title, within the area depicted in Figure 19.08.160, no zone modification or zone variance may be approved, and no building permit may be issued where a zone modification or zone variance is not required, for any structure or building that exceeds the maximum permitted heights shown in Figure 19.08.160 unless the military authority responsible for operations in that flight area first provides the planning director with written concurrence that the height of the proposed structure or building would create no significant military mission impacts.

C. In instances where the required written concurrence from the military is requested but not received within a reasonable period of time, the required zone modification or zone variance may be considered by the board of supervisors. A variation to the height-related development standard in subsection (B) of this section may be approved by the board of supervisors generally following the zone variance procedures set forth in Chapter 19.106 and payment of related fees, upon a finding that the benefits of the requested height deviation outweigh the potential impacts on military flight operations. (Ord. G-7189 § 6, 2005; Ord. G-7081 § 3, 2004: Ord. G-7072 § 3, 2004: Ord. G-6297 § 7, 1996: Ord. 5803 § 6, 1993: Prior code § 7282.11)

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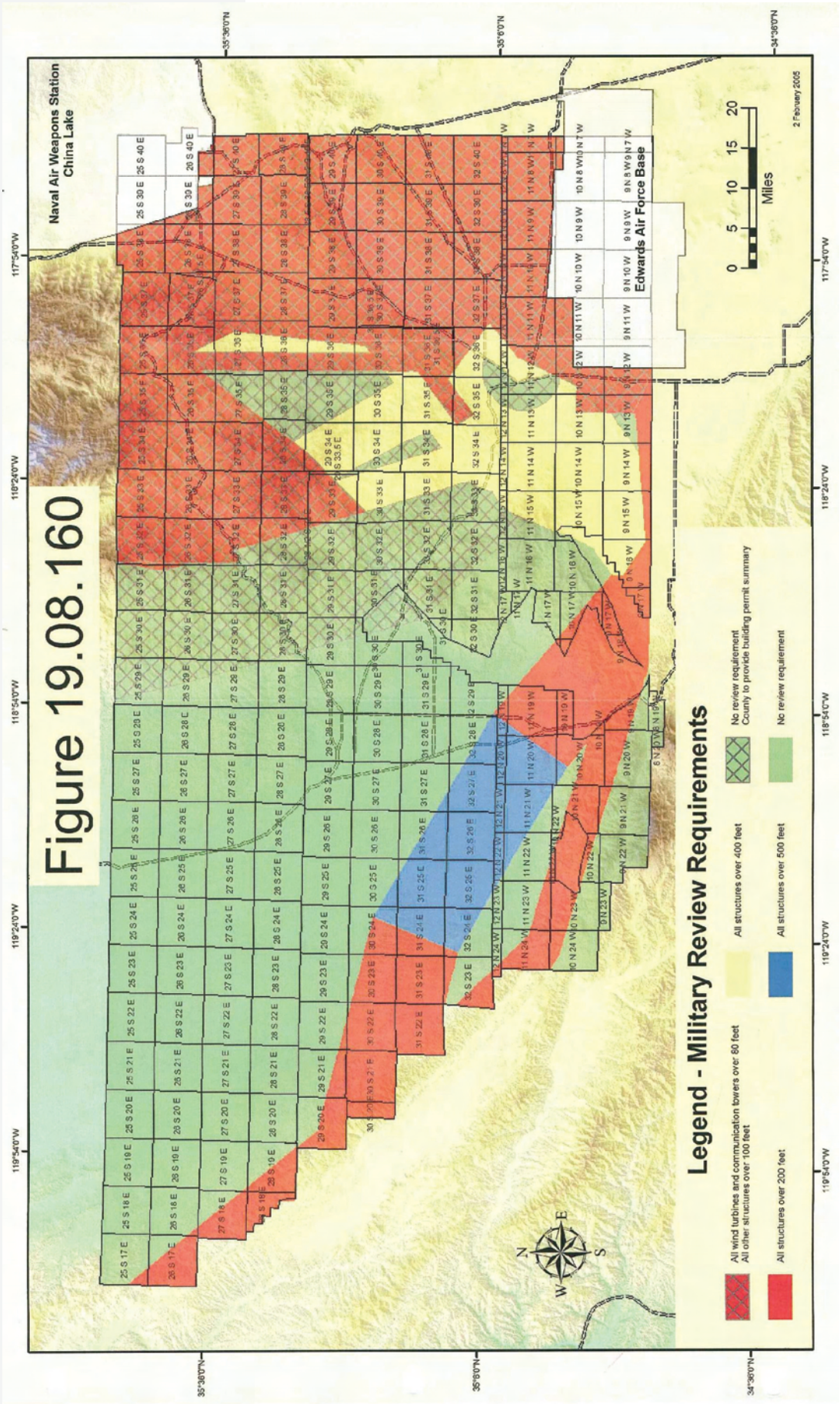
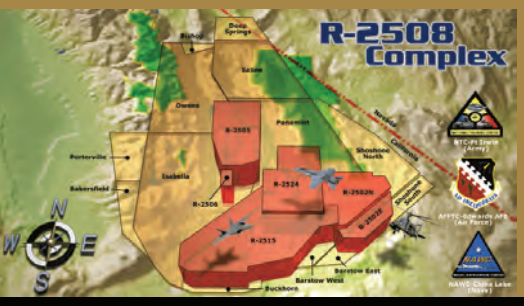


Figure 19.08.160
Naval Air Weapons Station China Lake
Edwards Air Force Base
0 5 10 15 20
Miles
2 February 2005
Legend - Military Review Requirements
All wind turbines and communication towers over 60 feet
All other structures over 100 feet
All structures over 200 feet
All structures over 400 feet
All structures over 500 feet
No review requirement
County to provide building permit summary
No review requirement

Please see the next page.

Appendix C
Compatibility Issues



C

COMPATIBILITY ISSUES

In this appendix…

Compatibility in relationship 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 entities can coexist successfully.

A number of factors influence whether community and military plans, programs and activities are compatible or in conflict. For this Joint Land Use Study (JLUS), a list of 24 compatibility factors was used to characterize local issues (see text box at the bottom of this page). These factors were divided into three broad categories: man-made, natural resource and competition for scarce resources.

This appendix provides a general discussion of these compatibility factors as they relate to the R-2508 JLUS. It is important to note that the information described here was developed through input from the Advisory Committee (AC), the Technical Committee (TC), and other stakeholders. All input was valued, however the study did not quantify, validate or measure the degree to which these potential conflicts and concerns may or may not have an adverse

Compatibility Factors

Man-Made

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

Natural Resources

18. Water Quality / Quantity
19. Threatened and Endangered Species
20. Marine Environments

Competition for Scarce Resources

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

impact upon the military missions or the local communities or private property owners.

The various issues presented in this appendix were discussed by the AC and TC as the basis for developing the tools, strategies, and recommendations contained in Section 4. As mentioned in Section 1, they should not be regarded as official findings or the result of exhaustive analysis. They are provided here as background information.

C.1 Evaluation of Compatibility

During preparation of the R-2508 JLUS, the public, the Advisory Committee (AC) and the Technical Committee (TC) assisted in identifying compatibility issues in or near the study area. At various workshops, these groups identified the location and type of compatibility issues they thought existed today or could occur in the future. Other issues were also added by the project team based on evaluation of existing information.

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

- This appendix provides background on the issues discussed based on available information. The intent is to provide a context for discussion and is not designed or intended to be an exhaustive technical evaluation of existing conditions.
- The number for each issue matches the number of the corresponding compatibility factor. The letters were added to distinguish each issue. The numbers and letters used to identify each issue are not meant to convey priorities or ranking of issues.

C.2 Man-Made Compatibility Factors

For the R-2508 JLUS, most of the issues recorded fell under the man-made compatibility factors. Man-made factors can be generated by community development that conflicts with military activities or can be generated by the military and encroach upon nearby communities. Either way, these factors can impact military readiness or a community's quality of life.

1 Land Use

Definition:
The basis of land use planning 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 avoiding 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 impact the use of another. For instance, industrial uses are often separated from residential uses to avoid impacts related to noise, odors, lighting and so forth.

Evaluating land use compatibility can be seen as the act of integrating all of the compatibility issues described in this appendix in relation to the range of land uses possible in an area.

Land use planning around military installations is similar to the process used to evaluate other types of land uses. For instance, local jurisdictions already consider compatibility issues such as noise when locating residential developments near commercial or industrial areas. Local governments also evaluate land use compatibility in relation to airports through criteria presented in adopted Airport Land Use Compatibility Plans (ALUCP).

The Air Installations Compatibility Use Zones (AICUZ) program is a Department of Defense (DOD) planning program that was developed in response to incompatible urban development and land use conflicts around military airfields. (Note: the Air Force uses the singular form, Air Installation Compatible Use Zone) As part of their AICUZ programs, the Air Force and Navy have established compatible land use standards for airfields relative to noise and safety issues.

The noise contours and accident potential zones for Edwards AFB are contained within the installation boundaries, and therefore no public AICUZ document is required. The AICUZ for China Lake contains the Navy standards for land use compatibility.

Land uses and military operations may be considered incompatible for a number of reasons. Among the most common factors are the high levels of noise created by military aircraft, heights of structures near an installation's flight paths, force protection/security concerns of the military and factors that impair pilot performance during flight (i.e., dust,

light and glare). Many potential land use compatibility issues involve residential and commercial development adjacent to military installations. The central issues of incompatible development are aircraft noise and safety. The magnitude of the noise problem, resulting complaints, pressure to modify or suspend operations and threats of litigation, is directly related to the proximity of noise sensitive land uses to the military installations, ranges, operational areas, military transportation routes and special use airspace.

The development of land uses incompatible with the study area's military missions can seriously compromise the quality of the military's training and test mission requirements and often results in pressure to modify operational procedures. Depending on location, urban development may not present an immediate problem, but incompatible development could present a long-range threat to the military's missions. Urban development also may reduce wildlife habitat, making an installation or range the only available habitat in the area and further limiting the installation's ability to conduct or modify its operations or mission.

The location of proposed schools is frequently noted as a compatibility factor around many military areas. School facilities are governed by school districts and not by local jurisdictions. Criteria for siting new schools are reviewed by the state, and proposed sites obtain facility siting approval from the Office of the State Architect. In many cases, military representatives are not aware of new schools until they are built. If a school site is incompatible with military operations, mitigation of the problem after the fact can be very expensive and may force changes in military operations.

In-flight collisions with birds are dangerous for pilots, people on the ground and aircraft operations in general. This Bird / Wildlife Aircraft Strike Hazard (BASH) can be increased by incompatible land uses adjacent to an installation and within approach and departure flight tracks. Landfill operations have the potential to pose compatibility issues to aircraft operations since they can attract wildlife, specifically birds. This issue can become even more of a problem as the landfill expands to meet the demand of the region's growing population. Additional considerations should be given to other land uses near airfield approach and departure corridors that serve to increase BASH potential, such as open spaces or parks with water that regularly attract birds.

Table C-1 lists the comments as recorded from input by the public, AC and TC for the land use compatibility factor.

Table C-1. Land Use

Compatibility Issue
BLM (Bureau of Land Management) land tenure and management
Realignment of State Hwy 58 and US Hwy 395 interchange (1 mile east)
Growth pressures - Ridgecrest is landlocked by BLM and DOD
New development proposals, mixed use development, large scale master planned 2,500+ acre development
Area potential for deannexation to County
Potential annexation area for California City
Incompatible development proposals associated with Mojave airport
Incompatible land use - Mojave Space Port
Potential site for future 4-year university
Flooding towards Edwards AFB from Lancaster
Incompatible uses with Palmdale airport
Incompatible uses with Lancaster airport
Location of schools within Ridgecrest
Kern County Specific Plan and Indian Wells Valley Specific Plan
Incompatible development with Rosamond Specific Plan and Willow Springs Specific Plan
Incompatible land use with Ridgecrest General Plan
Incompatible development in Lancaster
Incompatible development with Timbisha
Incompatible development in Haiwee
Incompatible development within NAWS China Lake approach and departure corridors
Incompatible development on Darwin Property
Incompatible development in Homewood Canyon
Landfill for the City of Los Angeles - incompatible land use

Compatibility Issue
BASH issues NAWS China Lake approach / departure area
North Spin Zone
Native American tribal governments are required to be consulted regarding the protection of Native American Cultural Resources, Cultural Items and Cultural Landscapes

2 Safety Zones

Definition:
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.

Military installations often have activities or facilities that require special consideration by local jurisdictions when evaluating compatibility due to public safety concerns. Military regulations provide specifics on how to define a buffer area around these locations based on the type of explosive, the maximum amount of explosive material on site and the type of structure used to provide work areas or store the materials. This buffer area is described as an explosive safety quantity distance (ESQD).

Safety issues can often be associated with the use or testing of weapons and ordnance. New weapon systems being developed and tested often require more space (i.e., larger stand-off distances) to ensure safety while maintaining the ability to fully test weapons and command and control systems. The increasing stand-off range of weapons and air platform capabilities may require installations to conduct or participate in cross-range and joint operations.

Aircraft Accident Potential Zones

Every Navy and Air Force runway has a set of aircraft safety zones designated at each end of the runway. These zones are referred to as the Clear Zone (CZ), Accident Potential Zone I (APZ I) and Accident Potential Zone II (APZ II). Each zone was developed based on a statistical review of aircraft accidents. The Navy and Air Force provide guidance on land uses considered to be consistent within these zones as part of their AICUZ studies. All of the aircraft safety zones related to runways at China Lake and Edwards AFB fall within the installation's boundaries.

Table C-2 lists the comments as recorded from input by the public, AC and TC for the safety zones compatibility factor.

Table C-2. Safety Zones

Compatibility Issue
Pira Buffer / drop zone - potential of ordnance to go off installation
Noise and accidents in approach and departure zones to NAWS China Lake
Edwards AFB north spin zone
Previous bombing range
Trona Gap (Controlled Firing Area) - impacts from recreational visitors in area include trespass, dust, air quality, safety concerns, and AT/FP
Black Mountain Supersonic Corridor
New weapons systems may require increased weapon stand-off areas for NAWS China Lake
New weapons systems may require increased weapon stand-off areas for Edwards AFB
Baker Range turn-outs - Bombing practice areas. Range operations
North spin area (2d location)

3 Vertical Obstructions

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

Vertical obstruction, in relation to flight operations from an airfield, is 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 details on how 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. Figure C-1 illustrates common terms used in the Part 77 regulation.

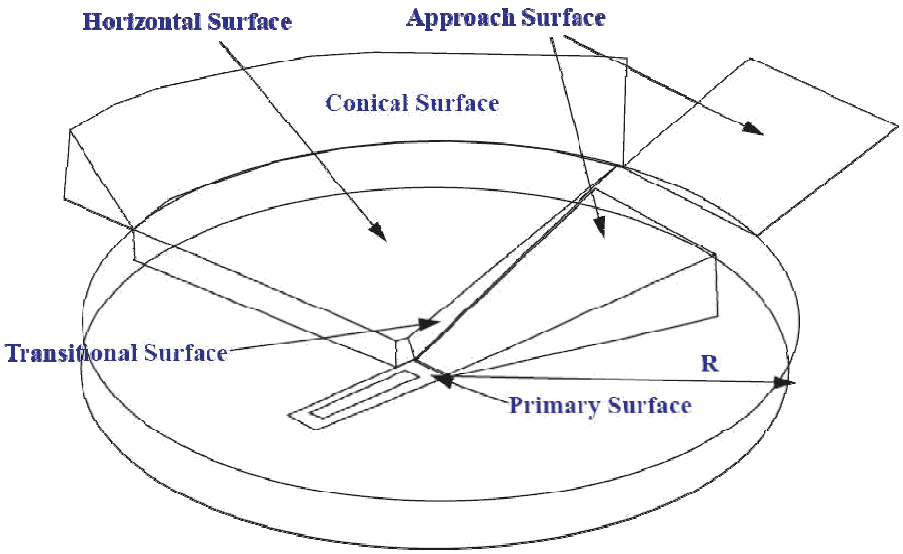


Figure C-1. Part 77 Terminology

To determine when structures or facilities should be evaluated regarding vertical obstruction, Part 77 states the following requirements:

More on Part 77

http://www.faa.gov/airports_airtraffic/airports/regional_guidance/central/construction/part77/

§ 77.13 - 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 ft above ground level
- Any construction or alteration
  - within 20,000 ft 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 ft.
  - within 10,000 ft 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 ft.
  - within 5,000 ft of a public use heliport which exceeds a 25:1 surface
- Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed that 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

As the area around military installations develops, local jurisdictions will need to review project proposals to ensure compliance with Part 77 requirements. It is important to note that Part 77 compliance is not limited to stationary or permanent structures or facilities. In new home developments, advertising can be done with large balloons reaching 100 or more feet into the air. These and similar items will need to be addressed in the area surrounding the installations to ensure aircraft and public safety.

For the R-2508 study area, vertical obstruction issues are not limited to Part 77 requirements and the imaginary surfaces in the immediate vicinity of a military installation's airfield. Due to the unique missions of these installations and special use airspaces within the study area, vertical obstructions may occur some distance from the installations. The large

number of existing and proposed wind generation structures, telecommunications towers and supporting infrastructure for alternative energy generation facilities (i.e., transmission lines and towers) may pose potential height concerns to military aircraft operations and testing.

Table C-3 lists the comments as recorded from input by the public, AC and TC for the vertical obstruction compatibility factor.

Table C-3. Vertical Obstruction

Compatibility Issue
Proposed wind generation farm
Vertical obstruction from cell towers
Pinetree wind farm
High conflict potential within the R-2515 range, which allows operations from ground to infinity
Proposed East Kern County Landfill
Potential wind generation area
Potential for telecommunication towers on State Hwy 14
Black Mountain Supersonic Corridor
Transmission corridors
Potential for vertical obstruction within San Bernardino County
Potential vertical encroachment area
Vertical obstructions surrounding Edwards AFB
Potential for vertical obstruction within Los Angeles County
BLM to review and assess adoption of regulating height obstructions
Vertical obstruction from electrical transmission towers (Fort Irwin/NTC)

4 Local Housing Availability

Definition:
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 base.

Housing is an important component needed to support military missions and economic development. For the military, many military families and personnel rely on local communities to meet their housing needs. Changes in the supply and cost of off installation housing and changes in the military's need for housing (related to changing number of personnel or the amount of military housing provided on the installation) should be coordinated with local jurisdictions to ensure adequate supplies.

Table C-4 lists the comments as recorded from input by the public, AC and TC for the local housing affordability compatibility factor.

Table C-4. Local Housing Affordability

Compatibility Issue
Housing affordability in the vicinity of Edwards AFB
Scarcity of executive housing for personnel at NAWS China Lake
Housing availability in Ridgecrest and Kern County
Housing availability in Inyo County

5 Infrastructure Extensions

Definition:
This factor covers the extension or provision of infrastructure (roads, sewer, water, etc.). Infrastructure plays an interesting role in compatibility. On the positive side, infrastructure can enhance the operations of the installation by providing needed services, such as sanitary sewer treatment capacity and transportation systems. Infrastructure can also be an encroachment issue if enhanced or expanded infrastructure encourages growth into areas near the installation that would not be compatible with current or future missions.

Regional Transportation Improvements

Transportation planning authorities relevant to the R-2508 Complex include the Kern County Association of Governments (Kern COG), the San Bernardino Associated of Governments (SANBAG) and the Southern California Association of Governments (SCAG). These planning agencies develop Regional Transportation Plans to assess factors that will affect regional transportation and plan for the transportation facilities needed to support the region in the future (see Section 3, Regional Transportation Plans for additional details).

Roadways Near Military Installations

As population and housing grows in the portions of the study area near an installation, access to and from the military installations can become an issue.

Sewer and Water Service

In the past, military installations were typically designed to provide sewer and water service through treatment facilities located and maintained on the installation. As infrastructure systems age and treatment requirements become more complex, DOD is looking at the viability of obtaining infrastructure services from off-installation providers or to turn the system over to a private entity to operate and maintain.

Table C-5 lists the comments as recorded from input by the public, AC and TC for the infrastructure extensions compatibility factor.

Table C-5. Infrastructure Extensions

Compatibility Issue
District 14 wastewater dumping to Edwards lakebed during emergency situations
Planned rail spur is to be built from Yermo to Fort Irwin/NTC
Ridgecrest dependent on on-base wastewater treatment facilities
Sewer and water extensions near Edwards AFB
Access to NAWS China Lake as growth occurs
Access to Edwards AFB as growth continues
Circulation and infrastructure issues resulting from growth near China Lake
Impacts of Caltrans US Hwy 395 realignment project
Infrastructure extension

6 Antiterrorism / Force Protection

Definition:
Antiterrorism/Force Protection (AT/FP) relates to the safety of personnel, facilities and information on an installation from outside threats.

Security concerns and trespassing can present immediate compatibility concerns to installations. Due to current world conditions and recent events, military installations are required to meet more restrictive standards for anti-terrorism and force protection. These standards include increased security checks at installation gates. Additional emphasis on credential and vehicle checks can create capacity and queuing issues with entrance gates that are inadequate to support the high volume of vehicles requiring access to the installation on a daily basis. The reduced processing throughput at the gates can create circulation issues and general safety concerns external to the installation within local communities. In addition, concentrations of stopped or parked vehicles outside of DOD installations also pose force protection issues as potential targets for terrorist attacks.

Table C-6 lists the comments as recorded from input by the public, AC and TC for the antiterrorism / force protection compatibility factor.

Table C-6. Antiterrorism / Force Protection

Compatibility Issue
Queuing onto jurisdictional streets from traffic accessing or leaving installations

7 Noise

Definition:
Defining noise from a technical perspective, sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. More simply stated, sound is what we hear. As sounds reach unwanted levels, this is referred to as noise.

Air Force and Navy air installations prepare AICUZ studies when required to address off instalation noise and safety affects. As described in Section 3.1, China Lake published an interim AICUZ study in 2007. The interim AICUZ study provided detailed noise modeling of current and potential aircraft operations at the installation. For Edwards AFB, a public AICUZ is not required since the noise and safety areas described in an AICUZ are entirely contained within the installation's boundary.

While aircraft operations near an installation are the most noticable noise effect in the study area, aircraft overflight and the use of the weapons testing and training ranges inside the R-2508 study area could result in noise levels that need to be addressed as part of the JLUS.

Understanding 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.

The following key terms are used to describe noise.

- **Ambient Noise**. The total noise associated with an existing environment and usually comprising sounds from many sources, both near and far.
- **Attenuation**. Reduction in the level of sound resulting from absorption by the surrounding topography, the atmosphere, distance from the source, barriers, construction techniques and materials, and other factors.
- **A-weighted decibel (dBA)**. A unit of measurement for noise having a logarithmic scale and measured using the A-weighted sensory network on a noise-measuring device. An increase or decrease of 10 decibels corresponds to a tenfold increase or decrease in sound energy. A doubling or halving of sound energy corresponds to a 3-dBA increase or decrease.

Measuring Noise Impacts…

People have a lower tolerance for noise during evening and nighttime hours. In most noise studies, and as part of the noise modeling conducted for AICUZ studies, noise occurring during these hours is weighted to reflect this concern. CNEL and Ldn are two commonly used weighting methods.

- **Community Noise Equivalent Level (CNEL).** CNEL is used to characterize average sound levels over a 24-hour period, with weighting factors included for evening and nighttime sound levels. Leq values (equivalent sound levels measured over a 1-hour period - see Leq description below) for the evening period (7 p.m. to 10 p.m.) are increased by 5 dB, while Leq values for the nighttime period (10 p.m. to 7 a.m.) are increased by 10 dB. For a given set of sound measurements, the CNEL value will usually be about 1 dB higher than the Ldn value (average sound exposure over a 24-hour period – see below). In practice, CNEL and Ldn are often used interchangeably. A CNEL measure is commonly used in California, and is typically used for AICUZ studies done within California.
- **Day-Night Average Sound Level (Ldn).** Ldn represents an average sound exposure over a 24-hour period. Ldn values are calculated from hourly Leq values, with the Leq values for the nighttime period (10 p.m. to 7 a.m.) increased by 10 dB to reflect the greater disturbance potential from nighttime noises.
- **Equivalent Sound Level (Leq).** The level of a steady-state sound that, in a stated time period and at a stated location, has the same sound energy as the time-varying sound (approximately equal to the average sound level). The equivalent sound level measured over a 1-hour period is called the hourly Leq or Leq (h).
- **Noise Contours.** Connecting points of equal noise exposure. Typically expressed in 5 dBA increments (60, 65, 70, 75, etc.).
- **Sensitive Receptors.** Sensitive receptors are defined as locations and uses typically more sensitive to noise, including residential areas, hospitals, convalescent homes and facilities, schools and other similar land uses.

Characteristics of Sound

Sound is characterized by various parameters that include the rate of oscillation 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 more than one trillion times within the range of human hearing, a logarithmic loudness scale (i.e., dB scale) is used to present sound intensity levels in a convenient format.

Since the human ear is not equally sensitive to all frequencies within the entire spectrum, 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 1 dBA are only discernable under controlled, extremely quiet conditions. A change of 5 dBA is typically noticeable to the general public in an outdoor environment. Figure C-2 summarizes typical A-weighted sound levels for a range of indoor and outdoor activities.

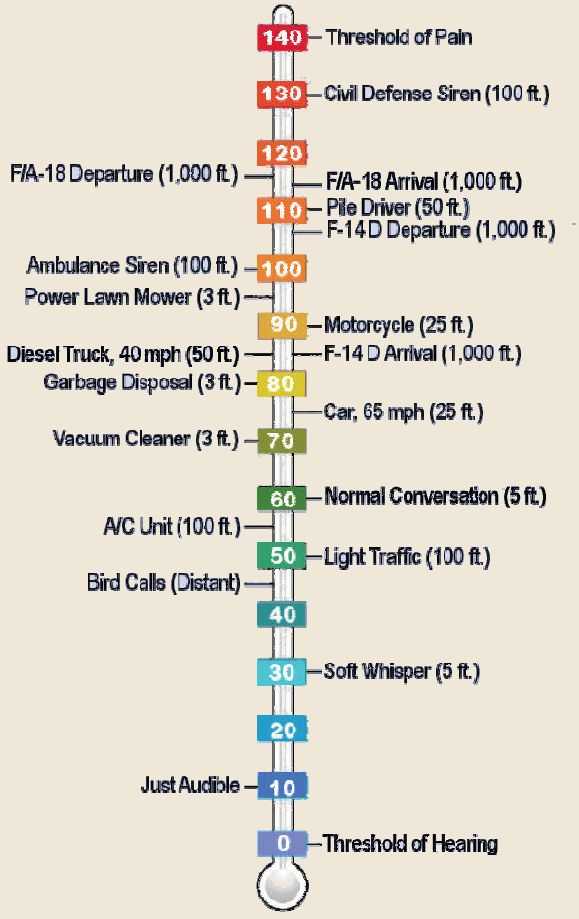


Figure C-2. Noise Level Comparison

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. When describing noise impacts, it is common to look at the average noise over an average day.

Aircraft Noise

The Navy and Air Force currently use the NOISEMAP computer model to analyze and describe noise impacts created by aircraft operations. NOISEMAP is one of two Environmental Protection Agency (EPA) approved models. The other is the Integrated Noise Model (INM), which is used by the Federal Aviation Administration (FAA) for public use airports.

In 1974, EPA designated the noise descriptor Ldn, or Day-Night Average Sound Level (DNL), as the standard measurement for noise impacts. Ldn is an average sound level exposure, measured in decibels, over a 24-hour period (see the definition earlier in this section for details). On a national level, Ldn measurements are projected down to 65 decibels.

California uses a measurement technique similar to Ldn called the Community Noise Equivalent Level (CNEL). Ldn and CNEL both apply a 10 dB penalty for noise occurring during the nighttime hours of 7 p.m. to 10 p.m. The CNEL measurement goes further by adding a 5 dB penalty for events occurring in the evening between 7 p.m. and 10 p.m. Typically, the numerical difference between Ldn and CNEL are not significant.

California airport planning also calculates noise contours down to the 60-dB CNEL level, which are included in the current interim China Lake AICUZ study.

Table C-7 lists the comments as recorded from input by the public, AC and TC for the noise compatibility factor.

Table C-7. Noise

Compatibility Issue
Potential Wilderness Areas
Residential uses in Porterville, Springville, and Tule River Indian Reservation from overflight noise
Black Mountain Supersonic Corridor
Noise and accidents due to NAWS China Lake approach and departure corridors
Residential uses in Frasier Park from overflight
Residential uses in Tejon Mountain Village from overflight
Park/Wilderness overflight (Death Valley)
CORDS Road Test Area
BLM recreation area
Noise associated with precision impacts on Edwards AFB
Noise within Kern County
Noise from overflight
Residential uses in Owens Valley from overflight noise

8 Vibration

Definition:
Vibration is an oscillation or motion that alternates in opposite directions and may occur as a result of an impact, explosion, noise, mechanical operation or other change in the environment.

Vibration from Noise...

Further information on noise from installation operations are described under Compatibility Factor 7, Noise.

Vibration can occur from flight operations and weapons testing in the R-2508 study area. Low level flight, sonic booms as aircraft break the sound barrier, low frequency noise and vibration from weapons detonation are typical sources in the study area. Given the height of the aircraft and topography of the region, sonic booms have the potential to be heard and felt in communities throughout the study area. Non-military uses also can produce vibration, such as blasting (mining) or heavy traffic. How far a vibration effect can be noticed varies significantly.

Weapons testing often produces low-frequency noise and vibration that results from weapons detonation. These noise sources can create single event noise events that can travel extensive distances due to the valley topography of the area.

Table C-8 lists the comments as recorded from input by the public, AC and TC for the vibration compatibility factor.

Table C-8. Vibration

Compatibility Issue
CORDS Road Test Area
Black Mountain Supersonic Corridor (vibration associated with sonic booms)
Vibration associated with supersonic overflight of Palmdale
Vibration associated with overflight in wilderness areas (Death Valley)
Vibration in Porterville, Springville, and Tule River Indian Reservation associated with supersonic flight
Seasonal vibration associated with supersonic flight (sonic booms) in Barstow and Rosamond
Vibration associated with precision impacts on Edwards AFB
Vibration associated with overflight (sonic booms) in Inyo County

9 Dust

Definition:
Dust is the common term used to describe the suspension of particulate matter in the air. Dust can be created by fire (controlled burns, agricultural burning), ground disturbance (agricultural operations, grading), industrial activities or other similar processes. Dust becomes a compatibility issue if sufficient in quantity to impact flight operations (such as reduced visibility or equipment damage).

A number of issues are associated with the impacts of dust. Military operations, such as troop movements and weapons detonation, can impact off-base land uses through the creation of dust and other airborne particulates. Conversely, dust created by use of unpaved roadways and development outside of military installations in the study area can negatively impact military operations if the dust produced is significant and in an area that would impact operations. Dust and other airborne particulates can also adversely affect air quality impacting all entities within the region (see Compatibility Factor 12, Air Quality).

Table C-9 lists the comments as recorded from input by the public, AC and TC for the dust protection compatibility factor.

Table C-9. Dust

Compatibility Issue
Dust from operations on Fort Irwin/NTC impacts off-installation uses
Dust issue with the Honda plant, due to fallow fields, test track creates, plant closes during period of high winds
Dust generation off-site activities
Dust – desert roads serving the scattered rural developments
Dust from Owens Dry Lake
Dust from new development
Dust from Kern County and Ridgecrest
Mining operations
Dust control on base
Flash overs from dust on transmission lines

10 Light and Glare

Definition:
This compatibility factor refers to man-made lighting (street lights, airfield lighting, building lights) and glare (direct or reflected light that is harsh and disrupts normal vision).

Light sources from commercial, industrial and residential uses at night can cause excessive glare and illumination, which impacts 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.

An area-wide compatibility issue deals with the region's Dark Sky environment and the negative impacts on it by light sources associated with some military operations and developed areas in the study area.

Some of the issues are related to the adverse impacts of light and glare on military operations from sources such as urban development, solar power facilities and transportation corridors. Solar facilities could cause substantial amounts of glare depending on their type, location, angle and direction, resulting in a reduction of the pilot's view, even at a very high altitude. Light pollution also restricts the ability of military users to gather Infrared (IR) data for ground and airborne testing during nighttime missions, which compromises the effectiveness of night vision device testing and training missions.

Conversely, light and glare originating from military installations may impact land uses in adjacent communities.

An example of the effects of glare on a cockpit canopy

Table C-10 lists the comments as recorded from input by the public, AC and TC for the light and glare factor.

Table C-10. Light and Glare

Compatibility Issue
Dark Sky environment
Glare from solar panels impacts pilot - (i.e., Marine Detachment using night vision goggles for operations)
Up-lighting from development along US Hwy 395 corridor impacts night training and testing at night
Light and glare in Ridgecrest
Glare from solar facilities - Kramer Junction
Light and glare in the Indian Wells Valley Specific Plan area
Light and glare from China Lake impacting surrounding areas

11 Alternative Energy Development

Definition:
Alternative energy refers to sources such as solar, wind or biofuels that can be used to replace or supplement traditional fossil-fuel sources, as coal, oil and natural gas. Alternative energy development could pose compatibility issues related to glare (solar energy) or vertical obstruction (wind generation). Other alternative energy developments, such as biofuels, have no typical compatibility issues and would be judged for compatibility on a case-by-case basis.

Source: Warren Gretz, NREL/PIX08675
Wind turbines can be vertical obstructions to aircraft operations

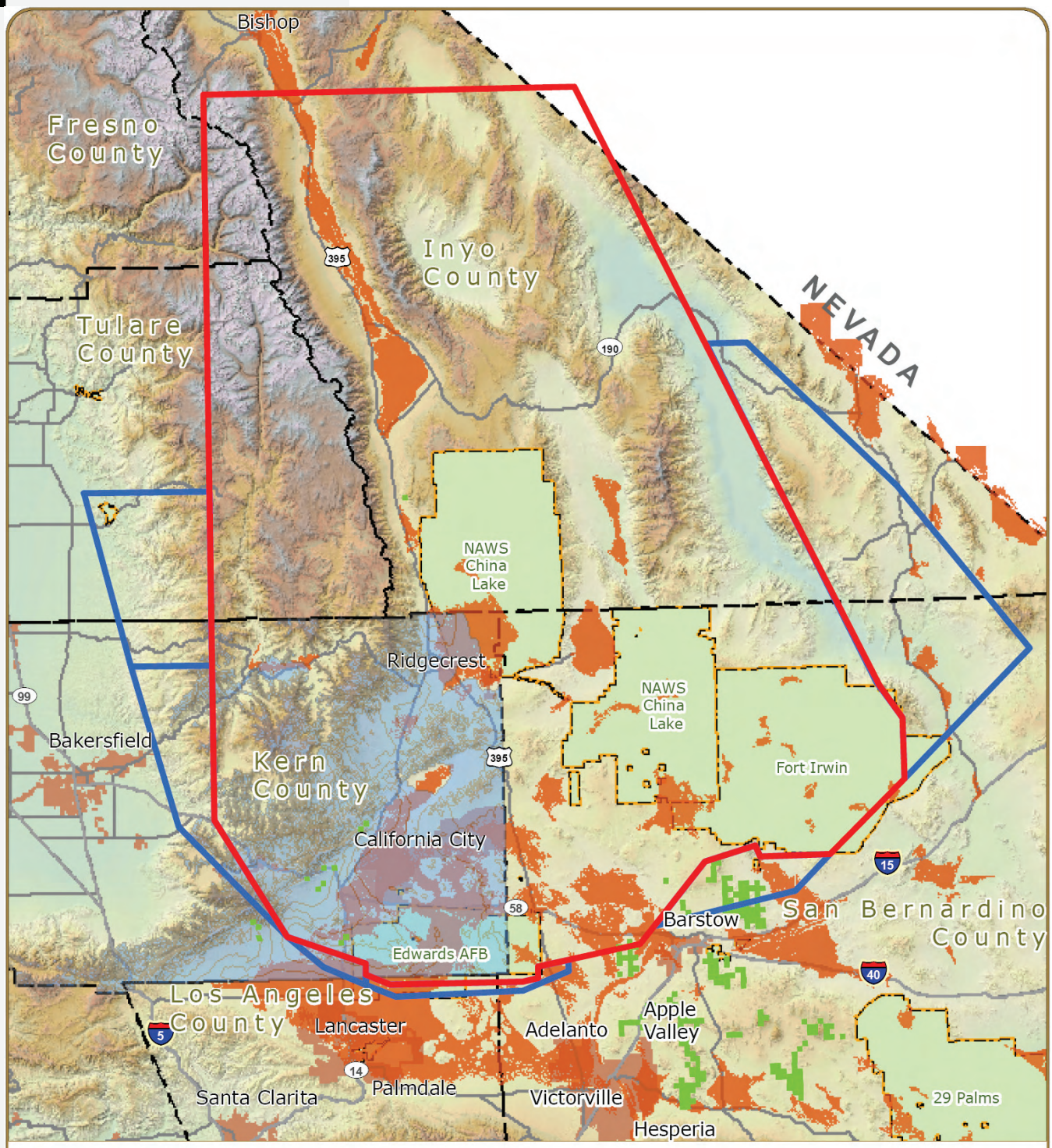
Continuing the discussion from Compatibility Factor 10 above, solar facilities in the region could also cause substantial amounts of glare depending on their type, location, angle and direction, resulting in a reduction of the pilot's view, even at a very high altitude.

Wind turbines can present various compatibility issues. The most prominent is the potential vertical obstruction related to structures, which can be several hundred feet in height for a commercial structure (see also Compatibility Factor 3, Vertical Obstructions). Additional issues are related to the height of the turbines' supporting infrastructure (i.e., transmission lines and towers). Areas with commercial wind potential area located throughout the study area, primarily in the southern portion.

As with other sources of alternative energy, geothermal power generation facilities must have a means to distribute the energy they produce. Supporting infrastructure such as transmission lines and towers can pose compatibility issues due to their height.

Identification of locations for placement of alternative energy facilities and supporting transmission lines in coordination with the military, local jurisdictions, and land management agencies is desirable.

For reference purposes, Figure C-3 provides a look at the distribution of areas with the potential for alternative energy development.



Legend

R-2508 JLUS
- R-2508 Special Use Area
- Military Operations Area

- DOD Installations/Ranges
- Cities
- Counties
- Highways

- BLM Wind Development Applications
- Wind Speeds > 157 Km/Hr
- Solar Potential

0 20 40 Miles

Alternative Energy | Figure C-3

Table C-11 lists the comments as recorded from input by the public, AC and TC for the alternative energy development compatibility factor.

Table C-11. Alternative Energy Development

Compatibility Issue
Alternative energy - solar field
Wind, also vertical obstructions
Alternative energy - Private proposal for wind generation on NASA Goldstone site (Fort Irwin / NTC)
Alternative energy - Coso geothermal
Alternative energy - proposed solar energy site
Deep Rose – extremely deep geothermal
Proposed sites for alternative energy development
Alternative energy - wind generation and solar energy
Structures and transmission lines associated with wind energy
New transmission lines

12 Air Quality

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

As discussed with Compatibility Factor 9, urbanized land uses and military operations can produce dust and air quality issues creating both localized and regional issues. Poor air quality can reduce the visibility needed for military testing and training events. This could cause the cancellation of test and training activities, reduced usage days, reduce the ability to use sensitive optical equipment, and degraded data quality and utility.

Table C-12 lists the comments as recorded from input by the public, AC and TC for the air quality compatibility factor.

Table C-12. Air Quality

Compatibility Issue
Regional air quality issues- The Mojave Air Basin is "non-attainment" for PM-10
Rural densities serviced by dirt roads
Coal-fired power plant in Trona

13 Frequency Spectrum Impedance and Interference

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

The electromagnetic spectrum is important to the electronic warfare mission and other electromagnetic test requirements, such as telemetry. Frequency spectrum interference and impedance can potentially limit the use of legacy instrumentation systems, reduce training capabilities, segment testing and training activities, and prohibit certain operational events from occurring.

Frequency interference is related to other transmission sources. Interference can result from a number of factors, including: new transmissions using a frequency that is near an existing frequency, moving an antenna transmitting on a similar frequency to a closer location, increasing the power of a similar transmission signal, use of poorly adjusted transmission devices that transmit outside their assigned frequency or production of an electromagnetic signal that interferes with a signal transmission.

In carrying out its operational activities, military users rely on a range of frequencies for communications and support systems. Since 1993, Congress has been selling federal spectrum bands for reallocation to the private sector to promote the development of new telecommunications technologies, products and services. The expanding public and commercial use of the frequency spectrum from Wi-Fi wireless transmitters and consumer electronics can encroach on the military's use of the frequency spectrum. Increasing community and DOD demands for this important resource can create conflict for all users.

Key issues to consider relative to frequency spectrum impedance include the construction of buildings or other structures that block or impede the transmission of signals from antennas, satellite dishes or other transmission/reception devices affected by line-of-sight requirements.

Additional information related to Frequency Spectrum Impedance and Interference is found in the discussion of Compatibility Issue 23, Competition for Scarce Resources – Frequency Spectrum Capacity.

Table C-13 lists the comments as recorded from input by the public, AC and TC for the frequency spectrum impedance and interference compatibility factor.

Table C-13. Frequency Spectrum Impedance and Interference

Compatibility Issue
Wi-Fi transmitters
Wind turbines can interfere with radar and communications
Extension of power line corridors
Frequency issues with Hyundai test track
Honda – test track
Application of Wi-Fi may interfere with radio transmission

14 Public Trespassing

Definition:
This factor addresses public trespassing, either purposeful or unintentional, onto the R-2508 Complex or military installations within the study area. This issue is related to Compatibility Factor 6, AT/FP.

To varying degrees, China Lake, Edwards, and Fort Irwin are bounded by unpopulated BLM or National Park Service lands that are used for a range of purposes, including recreation. The remoteness of some areas and the proximity of public uses adjacent to military boundaries provide opportunities for trespassing onto DOD property. Trespassing on military reservations by unauthorized persons poses a threat to public safety, as well as military security and mission performance.

Table C-14 lists the comments as recorded from input by the public, AC and TC for the public trespassing compatibility factor.

Table C-14. Public Trespassing

Compatibility Issue
Illegal dumping and trespassing
BLM recreation area
Trespassing at Little Lake / Coso Junction

15 Cultural Resources

Definition:
Cultural resources may prevent development on the base, apply development constraints or require special access by Native American tribal governments or other authorities.

Special considerations must be made for any development or expansion of military missions considered for areas with cultural significance. When a proposed military test or training activity has the potential to affect a historic site listed on the National Register of Historic Places (NRHP), eligible prehistoric or historic archaeological resources, or if additional information is required to determine if a site is eligible for listing in the NRHP, compliance with Section 106 of the National Historic Preservation Act must be completed prior to approval of the action.

Table C-15 lists the comments as recorded from input by the public, AC and TC for the cultural resources compatibility factor.

Table C-15. Cultural Resources

Compatibility Issue
Access to cultural sites and cultural items on Edwards AFB by Native American tribal governments
Access to cultural sites and cultural items on NAWS China Lake by Native American tribal governments
Access to cultural sites and cultural items on Fort Irwin / NTC by Native American tribal governments
Native American tribal governments are required to be consulted regarding the protection of Native American cultural resources, cultural items, and cultural landscapes.

16 Legislative Initiatives

Definition:
Legislative initiatives are federal, state or local laws and regulations that may have a direct or indirect effect on a military installation to conduct its current or future mission or a community's ability to direct growth.

Congress may enact legislation that directly or indirectly limits DOD's flexibility to conduct planned operations, training or testing. Federal, state and local jurisdictions may be directly or indirectly affected. The DOD must continue to work closely with federal and state legislative representatives to monitor legislation. Pertinent legislative concerns include the designation of Wilderness Areas, renewable energy development, frequency spectrum issues, airspace and urban development.

Federal laws and regulations mandate that DOD must consult directly with Native American governments on a government-to-government basis, respecting the tribe's status as a sovereign nation, when federal government decisions affect Native American tribal governments. Local jurisdictions must also perform consultation with affected Native American tribal governments (see discussion of Senate Bill 18 in Section 3.5).

Legislation, such as the California Desert Protection Act of 1994, has the potential to establish operational limits such as minimum flight altitude and use restrictions that affect flight test and training activities. Loss of use of existing operational areas or additional constraints on use would create a critical impact to military missions, operations and test capabilities.

A number of state statutes are also designed to address compatibility issues. This legislation is described in Section 3.5.

Table C-16 lists the comments as recorded from input by the public, AC and TC for the legislative initiatives compatibility factor.

Table C-16. Legislative Initiatives

Compatibility Issue
No issues were noted for this Compatibility Factor.

17 Interagency Coordination

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

The military often conducts operations over land controlled by another governmental agency or that is privately held. The types of allowable uses and restrictions are often the result of negotiations between the parties or subject to the other agency's policies and regulations. These restrictive uses can limit training and testing activities.

The development of proactive partnerships between military installations, other governmental agencies and jurisdictions is required to ensure the continued sustainability of military operations and the protection of public safety and access to public lands. Active participation by all entities is essential to addressing these issues as the development of incompatible land uses could create safety concerns, cause pressure to modify operations and increase the disturbance of adjacent residents.

Table C-17 lists the comments as recorded from input by the public, AC and TC for the interagency coordination compatibility factor.

Table C-17. Interagency Coordination

Compatibility Issue
Perceptions on local development review process - Communities believe the military is too busy, while the military believes their opinion will not matter to local entities

C.3 Natural Resource Compatibility Factors

In addition to man-made compatibility factors, natural compatibility factors are also potential sources of conflict with military readiness activities.

18 Water Quality / Quantity

Definition:
Water quality / quantity concerns include ensuring adequate water supplies of good quality for use by installations and surrounding communities as the area develops.

As discussed in Compatibility Factor 5 (Infrastructure Extensions), the provision of water production and treatment facilities can create compatibility issues based on the nature of the system, maintenance responsibilities, and condition. As a vital resource needed to sustain urban development, the provision of an ample water supply of sufficient quality is critical to sustaining both military and communities.

Table C-18 lists the comments as recorded from input by the public, AC and TC for the water quality / quantity compatibility factor.

Table C-18. Water Quality / Quantity

Compatibility Issue
Ridgecrest Waste Water Treatment Plant and upgrade needed
Water availability on Edwards AFB

19 Threatened & Endangered Species

Definition:
A ***threatened*** species is one that may become extinct if measures are not taken to protect it. An ***endangered*** species is one that has a very small population and is at greater risk of becoming extinct. Many species that become extinct never make it to the endangered species list. The presence of threatened and endangered species may require special development considerations, could halt development and could impact performance of military missions.

Threatened and endangered species are known to exist throughout the study area, both on and off military installation. Species within the planning area include federal and state listed threatened desert tortoise, the federally listed endangered Lane Mountain Milkvetch, state listed endangered/federally listed threatened Inyo California Towhee and the state listed threatened Mohave ground squirrel. Some of these species may be affected by current or future military missions, but the military puts forth both effort and money to aid in the recovery of these species.

Critical habitat for some of the species can be found on and adjacent to the installations within this study area and restrictions for the purpose of protecting threatened or endangered species can reduce the value of an installation, range or operational area for testing and training by limiting the types of permissible activities in terms of composition, magnitude or timing.

Restrictions for the purpose of protecting threatened or endangered species can reduce the value of an installation, range or operational area for testing and training by limiting the types of permissible activities in terms of composition, magnitude or timing. The ability of local governments to adequately plan for growth can also be compromised as mitigation measures and habitat protection restrictions may limit land available for development.

Table C-19 lists the comments as recorded from input by the public, AC and TC for the threatened and endangered species compatibility factor.

Table C-19. Threatened and Endangered Species

Compatibility Issue
Alkaline Mariposa Lily
Mojave Ground Squirrel habitat
Lack of a regional Habitat Conservation Plan
Desert Tortoise habitat / mitigation lands
Fish and Game mitigation lands in western expansion area – originally purchased as mitigation lands
Critical habitat for endemic plants
Bat habitat
West Mojave Ecological Reserve – also used for mitigation banking

20 Marine Environments

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

Table C-20 lists the comments as recorded from input by the public, AC and TC for the legislative initiatives compatibility factor.

Table C-20. Legislative Initiatives

Compatibility Issue
No issues were noted for this Compatibility Factor.

C.4 Competition for Scarce Resources

Competition for scarce resources can cause compatibility issues due to competition between local and federal government agencies, other agencies, private development concerns and the military. The following is a description of some of the key resources that can be in high demand; however, only issues associated with the competition for Land, Air and Sea Spaces and for Ground Transportation Capacity have been identified for the R-2508 JLUS.

21 Scarce Natural Resources

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

Increasing development surrounding military installations will continue to compete with the need for naturally limited resources, such as water, oil, gas, minerals, and scenic / recreational assets. Continual development around the military installations could reduce the available supply of these finite resources

Table C-21 lists the comments as recorded from input by the public, AC and TC for the scarce natural resources compatibility factor.

Table C-21. Scarce Natural Resources

Compatibility Issue
Water availability on Edwards AFB
Develop a strategy for exchanging environmental credits among services that mitigates an environmental problem for another service by transferring extra environmental credits from one installation to another.
Edwards AFB dependent on the off-installation generation of electrical power
NAWS China Lake dependent on the off-installation generation of electrical power

22 Land, Air, and Sea Spaces

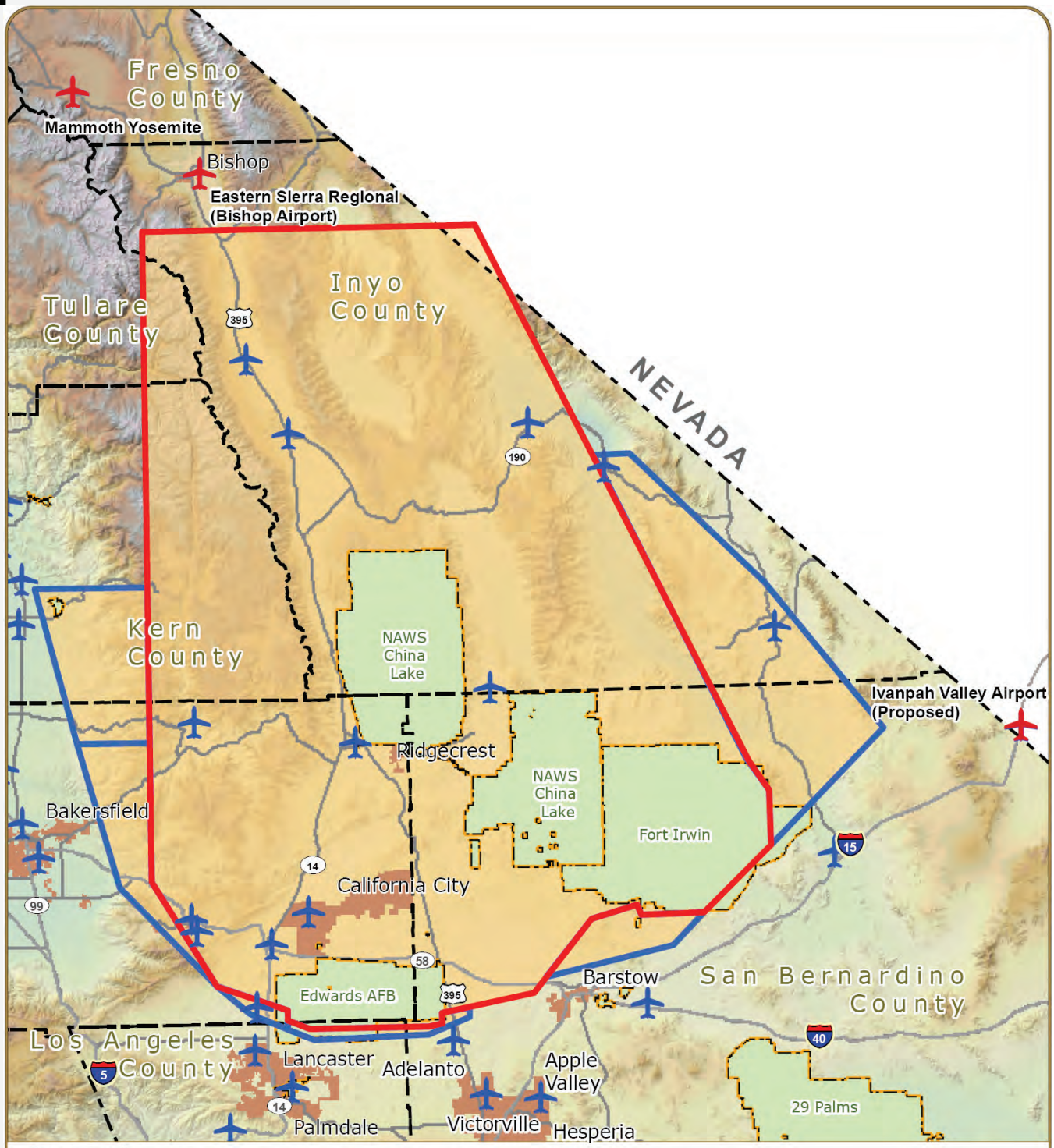
Definition:
Land, Air and Sea Spaces with regard to other airports in the proximity of the military installations.

Sufficient land and air resources must be available and of adequate size, cohesiveness and quality to accommodate effective training and testing. The demands of these needs will become increasingly important as the requirements and capabilities of weapons systems and command and control systems continue to improve.

Airspace in the region is a high demand resource. Restrictions in the use of the airspace, low level operational training and flight paths by the FAA could result in a reduction in the number of days available for testing and training. As such, the ability to conduct time sensitive training events and the re-creation of comparative training and testing events would be compromised. These restrictions may also limit the ability of installations to access certain portions of available training ranges while non-military aircraft are provided access.

There are a number of current and proposed public use airports within and in close proximity to the study area. There are 29 public use airports in the region surrounding the study area, with 13 airports located within the study area. Three of the airports adjacent to the study area are either new or planned for expansion (see Figure C-4). A significant amount of airspace coordination is required to deconflict use of the airspace with military aircraft operations.

Additional competition exists for land resources to place ground-based structures, such as telecommunications towers and wind generation facilities, and for expansion of existing military facilities outside of the primary installation boundaries (see also Compatibility Factors 3 and 11).



Regional Airports | **Figure C-4**

Table C-22 lists the comments as recorded from input by the public, AC and TC for the land, air, and sea space compatibility factor.

Table C-22. Land, Air, and Sea Space

Compatibility Issue
Expansion of existing airports within the study area
Vertical obstructions from telecommunication towers and wind generation facilities throughout the R-2508 Complex
Inyokern Airport and Inyokern Transition Corridor expansion
Mammoth and Bishop airports demand for transition corridors through the R-2508 Complex
In negotiation with FAA to obtain flight restrictions for eastern expansion area
Trona Gap (Controlled Firing Area) - impacts from recreational visitors in area include trespass, dust, air quality, safety concerns, and AT/FP
Inyokern Airport airspace issues
Plant 42 (Edwards AFB) is looking to expand commercial operations
Commercial Space Launch from Mojave Airport
Proposed operations at Ivanpah Valley Airport (Las Vegas, NV)
Palmdale Airport

23 Frequency Spectrum Capacity

Definition:
Frequency spectrum capacity is critical for maintaining existing and future missions in the R-2508 Complex and at the principal military installations in the study area. This also needs to be addressed from the standpoint of consumer electronics.

The electromagnetic spectrum is important to the electronic warfare missions and other electromagnetic test requirements of the military. The competition for available frequency spectrum may lead to a reduction in available spectrum from military training and developmental/operational testing activities. The lack of spectrum may decrease the effectiveness of exercises by restricting the number of war-fighting systems that can participate. In addition, spectrum limitations may restrict the use of the state-of-the-art instrumentation systems, resulting in less data for evaluators to use in training assessments and may also limit development testing of new technologies. Lack of available spectrum may result from federal agency regulations or from expanding public and commercial use of the frequency spectrum.

Additional information related to Frequency Spectrum Impedance and Interference is found in the discussion of Compatibility Issue 13.

Table C-23 lists the comments as recorded from input by the public, AC and TC for the frequency spectrum capacity compatibility factor.

Table C-23. Frequency Spectrum Capacity

Compatibility Issue
FAA/FCC expansion of restrictions on the use of frequency bands
Harper Dry Lake Energy Park (large, proposed dairy and processing facility)

24 Ground Transportation Capacity

Definition:
This factor addresses ground transportation capacity on highways and other local roads.

Capacity enhancements to transportation systems can increase demand for urbanized development by enhancing accessibility to an area. Potential changes in traffic patterns to and from military installations should be investigated to address flows to congested areas during peak times, such as the use of alternative gates. Coordination should be considered if these expansions result in intensification of land use designations near military operations areas.

Table C-24 lists the comments as recorded from input by the public, AC and TC for the frequency spectrum capacity compatibility factor.

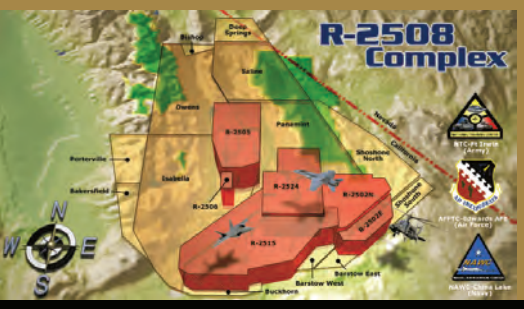
Table C-24. Ground Transportation Capacity

Compatibility Issue
Development in Rosamond is putting too much traffic on main access road causing congestion issues
High Desert Corridor (new 50-mile toll road from Palmdale to Victorville, just south of Edwards AFB)
Planned NTC rail spur to be built from Yermo to Fort Irwin / NTC
Widening of US Hwy 395 to four lanes
Widening of State Hwy 14 to four lanes

Please see the next page

Appendix D

Study Area Communities



D

STUDY AREA COMMUNITIES

This appendix provides a listing of the unincorporated communities within the R-2508 JLUS study area. These locations were identified by reviewing the 2000 Census list of census designated places and local maps.

Inyo County

- Aberdeen
- Alabama Hills
- Alico
- Ashford Mill
- Ballarat
- Bartlett
- Beveridge
- Big Pine
- Birch Creek
- Blackrock
- Cartago
- Charleston View
- Chicago Valley
- Coso Junction
- Darwin
- Death Valley Junction
- Dunmovin
- Fish Springs
- Foothill/Boulder Creek
- Fort Independence
- Furnace Creek
- Granite View
- Grant
- Haiwee
- Harrisburg
- Homewood Canyon
- Independence
- Indian Ranch
- Junction Ranch
- Kearsage
- Keeler
- Linnie
- Little Lake
- Lone Pine
- Lone Pine Creek
- Millspaugh
- Mock
- Monola
- Olancha
- Owenyo
- Panamint
- Panamint Springs
- Sandy Valley
- Seven Pines
- Pearsonville
- Reward
- Sage Flat
- Shoshone
- Skidoo
- Steward Ranch
- Stewart Valley
- Sykes
- Talus
- Teakettle Junction
- Tecopa
- Tecopa Heights
- Tecopa Hot Springs
- Tuttle Creek
- Valley Wells
- Whitney Portal
- Zurich

Kern County

- Actis
- Aerial Acres
- Ansel
- Baker
- Bena
- Bissell
- Bodfish
- Boron
- Bradys
- Brown
- Burton Mill
- Cable
- Caliente
- Cameron
- Canebrake
- Cantil
- Ceneda
- China Lake Acres
- Cinco
- Claraville
- Edwards
- Fleta
- Freeman
- Harts Place
- Havilah
- Ilmon
- Inyokern
- Johannesburg
- Keene
- Kernville
- Keyesville
- Lake Isabella
- Loraine
- Marcel
- Mojave
- Mountain Mesa
- North Edwards
- Onyx
- Piute
- Rand
- Randsburg
- Ricardo
- Rich
- Riverkern
- Rosamond
- Sageland
- Searles
- South Lake
- Squirrel Mountain Valley
- Summit
- Weldon
- Wofford Heights

Los Angeles County

- Redman

San Bernardino County

- Apollo
- Argus
- Atolia
- Copper City
- Dumont
- Echo
- Fort Irwin
- Fremont
- Hinkley
- Houze Place
- Jimgrey
- Kramer
- Lockhart
- Mars
- Silver Lake
- Spangler
- Sperry
- Skytop
- Valjean
- Venus

Tulare County

- Mineral King
- Ponderosa
- Springville
- Three Rivers

Please see the next page.