MARCH ARB COMPATIBLE USE STUDY

2023

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2023

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Acronyms

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5G	fifth generation

A

AC	Advisory Circular
ACC	Air Combat Command
ACP	Access Control Point
AD	airworthiness directives
AEDT	Aviation Environmental Design Tool
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFCP	Air Force Community Partnership
AFFF	aqueous firefighting foam
AFI	Air Force Instruction
AFM	airplane flight manual
AFPD	Air Force Policy Directive
AFRC	Air Force Reserve Command
AICUZ	Air Installations Compatible Use Zones
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
AMC	Air Mobility Command
AMOC	Air and Marine Operations Center
AMW	Air Mobility Wing
AOA	Air Operations Area
AOZ	Airport Overlay Zone
APOE	Aerial Port of Embarkation
APS	Approach Protection Study
APZ	accident potential zone
AQ	Air Quality
ARB	Air Reserve Base
ASR	Airport surveillance radar
AT	Anti-Terrorism/Force Protection
ATC	air traffic control

B

BAH	Basic Allowance for Housing
BASH	Bird/Wildlife Aircraft Strike Hazard
BIO	Biological Resources
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure
BRIC	Building Resilient Infrastructure and Communities

C

C4	Command, Control, Communications, Computers
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards

Cal-EPA	California Environmental Protection Agency
Cal-OES	California Governor's Office of Emergency Services
CALTRANS	California Department of Transportation
CBP	Customs and Border Protection
CCAA	California Clean Air Act
CDWR	California Department of Water Resources
CE	Changing Environment
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMLUCA	California Military Land Use Compatibility Analyst
CNEL	Community Noise Equivalent Level
COM	Communication/Coordination
CPTED	Crime Prevention Through Environmental Design
CR	Cultural Resources
CS	Cyber Security
CSP	concentrated solar power
CUS	Compatible Use Study
CWA	Clean Water Act
CZ	clear zone

D

DAF	Department of the Air Force
dB	decibel
DCIP	Defense Community Infrastructure Pilot (Program)
DHS	Department of Homeland Security
DoD	Department of Defense
DoDI	DoD Instruction
DOE	U.S. Department of Energy
DoT	Department of Transportation
DNL	day/night average sound levels
D/S/S	Dust/Smoke/Steam

E

EA	Environmental Assessment
ECP	Entry Control Point
ECF	Entry Control Facility
ED	Energy Development
EDA	Economic Development Agency
EGETS	Enhanced Groundwater Extraction System
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EW	Extreme Weather

F

FAA	Federal Aviation Administration
FAR	floor area ratio
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act
FOD	foreign object damage
FONSI	Finding of No Significant Impact
FSC	Frequency Spectrum Capacity
FSI	Frequency Spectrum Impedance/Interference
FW	Fighter Wing

G

GHZ	Gigahertz
GSA	Groundwater Sustainability Agencies
GSP	Groundwater Sustainability Plan

H

HA	Housing Availability

I

IAP	Instrument approach procedures
ICEMAP	Installation Complex Encroachment Management Action Plan
ICRMP	Integrated Cultural Resources Management Plan
IDA	International Dark-Sky Association
IDP	Installation development plan
IE	Infrastructure Extensions
IE CMCP	Inland Empire Comprehensive Multimodal Corridor Plan
IFR	Instrument flight rules
IGSA	Intergovernmental Support Agreement
ILS	instrument landing system
INRMP	Integrated Natural Resources Management Plan
IPA	Inland Port Airport

J

JI-FRAI	Joint Interagency Five G Radar Altimeter Interference
JLUS	Joint Land Use Study
JPA	Joint Powers Authority
JUA	joint use agreement

L

LAANC	Low Altitude Authorization and Notification Capability
LAFCo	Local Agency Formation Commission
LAS	Land/Air Space Competition
LEA	Law Enforcement Agencies
LED	Light Emitting Diode
LG	Light and Glare
LI	Legislative Initiatives
LPS	Low pressure sodium vapor
LU	Land Use
LUCP	Land Use Compatibility Plan

M

MAOZ	March ARB/Inland Port Airport Overlay Zone
MFHD	March Field Historic District
MILCON	military construction
MIP	March Inland Port
MIPAA	March Inland Port Airport Authority
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MTR	Military Training Route

N

NAAQS	National Ambient Air Quality Standards
NACo	National Association of Counties
NEPA	National Environmental Policy Act
NGO	Non-government Organization
NHPA	National Historic Preservation Act
NM	nautical miles
NOI	Noise
NORAD	North American Aerospace Defense Command
NOTAM	Notice to Air Mission
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NVG	night vision goggles

O

OAPC	Operational Area Planning Committee
OLDCC	Office of Local Defense Community Cooperation
O&M	Operations and Maintenance
OPR	Office of Planning and Research
OSD	Office of Secretary of Defense

P

P4	Public-Public, Public-Private Partnership
PFAS	per-and polyfluoroalkyl substances
PM/CM	preventative and corrective maintenance
PS	Public Services
PT	Public Trespassing
PV	photovoltaic

Q

QRT	quick reaction test

R

RC	Roadway Capacity
RCFC&WCD	Riverside County Flood Control and Water Conservation District
RCHCA	Riverside County Habitat Conservation Agency
RCIP	Riverside County Integrated Project
RE	Resiliency
REPI	Readiness and Environment Protection Integration
ROD	Record of Decision

S

SA	Safety
SAF/IE	Assistant Secretary of the Air Force for Installations, Environment, and Energy
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SDWA	Safe Drinking Water Act
SDDCTEA	Surface Deployment and Distribution Command Transportation Engineering Agency
SGHAT	Solar Glare Hazard Analysis Tool
SGMA	Sustainable Groundwater Management Act
SHW	solar hot water
SIP	State Implementation Plan
SLUCM	Standard Land Use Coding Manual
SM	Stormwater Management
SME	Subject Matter Experts
SNR	Scarce Natural Resources
SWP	State Water Project

T

TAC	Technical Advisory Committee
TAZ	Transportation Analysis Zone
TC	Technical Committee
TWG	Technical Working Group

U

UAS	unmanned aircraft system
UBC	Uniform Building Code
UFC	Unified Facilities Criteria
U.S.	United States
US	Utility Security
USAF	U.S. Air Force
USAHAS	U.S. Avian Hazard Advisory System
USFWS	U.S. Fish and Wildlife Service

V

V	Vibration
VIIRS	Visible Imaging Infrared Radiometer Suites
VFR	visual flight rules
VO	Vertical Obstructions

W

WF	Wildfires
WHO	World Health Organization
WHWG	Wildlife Hazard Working Group
WQQ	Water Quality/Quantity
WRCOG	Western Riverside Council of Governments
WRCRMA	Western Riverside County Regional Wastewater Authority

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1 Introduction

Military installations generate thousands of jobs and billions of dollars in regional economic impact across the nation. Sustainment of these military installations, and associated missions and facilities, helps underpin the vitality of local communities, economies, and industries. Ensuring compatibility between military bases and surrounding communities through partnership promotes military mission sustainment and continued presence in the local economy. The March Air Reserve Base Compatible Use Study aims to proactively identify and provide solutions to promote March's mission sustainability, while strengthening coordination efforts between the installation and neighboring communities.

1.1 What is the March Air Reserve Base Compatible Use Study?

The March Air Reserve Base (ARB) Compatible Use Study (CUS), herein also called the "Study," is a collaborative planning effort between the local project sponsor – Riverside County – and March ARB. This collaboration also includes surrounding communities, local and regional stakeholders, state and federal agencies, and the public. This Study intends to strengthen working relationships and encourage collaboration between military installations and identified stakeholders. This effort aims to identify, reduce, and/or prevent encroachment issues between military missions and increased development in neighboring communities. The CUS also addresses resiliency challenges to military installations related to the sharing of regional resources such as power and water, as well as the effects of climate change. These efforts will also help improve existing relationships between the installation and nearby stakeholders and encourage routine communication and partnership for the health, safety, and welfare of the community. To do this, the planning process culminates in a set of agreed-upon recommendations, or implementation strategies, that can be executed by the military and stakeholders to achieve:

- Compatible development
- Improved communication and relationships between installations and neighboring communities, now and in the future
- A decision model to guide the assessment of future land use prospects

This Study is important for preserving long-term compatibility between March ARB and the surrounding areas, where it will benefit both the base and the region by:

- Protecting the health and safety of nearby residents and workforce
- Enhancing a cooperative spirit between March ARB and local communities that, in turn, promotes comprehensive community planning with attention to compatibility
- Integrating surrounding local jurisdictions' growth policies, plans, and regulations with March ARB's plans

This Study was funded through a grant from the Department of Defense (DoD) Office of Local Defense Community Cooperation (OLDCC), with additional funding and support provided by Riverside County. While the OLDCC was the primary source of funding, the content of this Study was produced by and for the local stakeholders. Riverside County served as the managing agency for the project, with support from a variety of regional stakeholders. This Study is important for preserving long-term compatibility and fostering mutually beneficial relationships between March ARB and surrounding jurisdictions.

CUS Goals

The primary goals of the March ARB CUS are to:

- Protect the viability of current and future military operations while promoting and guiding compatible community growth and development
- Enhance communication and integrate military and community plans, policies, and regulations in support of proactive, comprehensive, and collaborative planning
- Protect and enhance the health, safety, and welfare of residents and military personnel around March ARB and its operating areas
- Support and enhance regional economic vitality and environmental health

CUS Objectives

Understanding

Bring together community and military representatives to discuss compatibility issues in an open forum that considers both community and military perspectives and needs. Understanding is facilitated through a cohesive education and outreach program that increases public awareness regarding land use planning and provides opportunities for input.

Collaboration

Encourage cooperative land use and resource planning among communities and March ARB to ensure compatible community growth while reducing operational impacts.

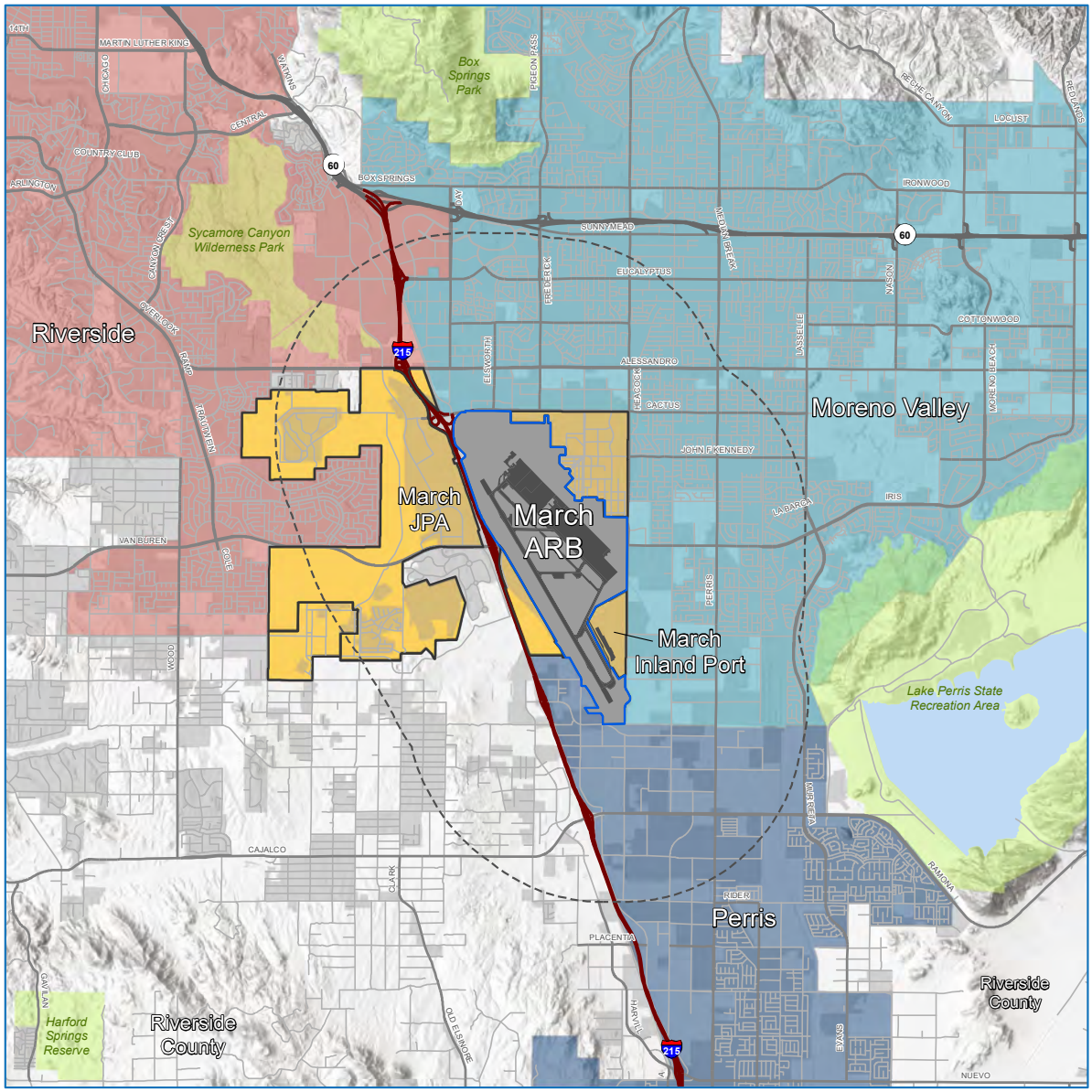
Actions

Provide a set of mutually supported tools and policies that local jurisdictions, agencies, the military, and other stakeholders can implement to address compatibility issues. The actions include operational measures that mitigate installation impacts on surrounding communities, as well as local government protocols that reduce community impacts on military operations. The proactive strategies help decision-makers resolve current issues relative to compatibility concerns.

1.2 Study Area

March ARB is situated southwest of the city of Moreno Valley, northwest of Perris City, and southeast of the city of Riverside, California just east of Interstate 215 (I-215). The CUS area depicted in **Figure 1-1** covers the vicinity around March ARB that may influence or be influenced by current and future military operations. This includes the local communities of Moreno Valley, Perris City, and Riverside; unincorporated areas of Riverside County; as well as 4,400 acres under the jurisdiction of March Joint Powers Authority (JPA). Areas of specific analysis include areas within the 2018 March Air Installation Compatible Use Zones (AICUZ) study, as well as areas within the 2014 March Air Reserve Base/Inland Port Airport chapter of the Airport Land Use Comprehensive Plan.

Figure 1-1 Study Area



1.3 What is Compatibility?

Compatibility planning aims to promote a collaborative environment in which community and military entities communicate and coordinate to identify compatibility concerns and mutually supportive actions, the implementation of which will allow both parties to achieve their objectives. This collaborative approach provides the context in which policies and actions can be developed and recommended through the CUS Implementation Plan in Chapter 6.

Many variables determine whether military and community plans, programs, and activities are compatible. A set of 29 compatibility factors was initially used during the development of the CUS to identify, assess, and establish the specific compatibility findings that are occurring or could occur in the CUS Study Area. These compatibility factors were further organized into four categories – social, resource, resiliency, and development. The specific compatibility factors and findings identified during the CUS are presented and assessed in Chapter 5: Compatibility Assessment.

Social Factors
Communication/ Coordination
Cultural Resources
Housing Availability
Legislative Initiatives
Public Services
Public Trespassing

Resiliency Factors
Changing Environment
Cyber Security
Extreme Weather
Stormwater Management
Utilities Security
Wildfires

Resource Factors
Air Quality
Biological Resources
Land/Air Space Competition
Scarce Natural Resources
Water Quality/ Quantity

Development Factors		
Anti-Terrorism/ Force Protection	Infrastructure Extension	Roadway Capacity
Dust/Smoke/Steam	Land Use	Safety
Energy Development	Light & Glare	Vertical Obstructions
Frequency Spectrum	Noise	Vibration

1.4 Why is a Compatible Use Study Important?

Although military installations and nearby communities may be separated by a fence line, they often share resources such as land, water, transportation networks, and other infrastructure. Because so many resources are shared, the activities or actions of one entity can unintentionally impact another, resulting in conflicts – despite positive interactions among local jurisdictions, agencies, and the military.

As communities develop and expand in response to growth and market demands, development that may be considered incompatible can occur close to military installations and associated operational areas. Uncoordinated, incompatible development can generate new, or exacerbate existing, land-use conflicts and other compatibility issues, often referred to as encroachment. Encroachment can have negative impacts on community safety and economic development as well as on the sustainability of military activities and readiness; therefore, addressing encroachment issues is currently one of the military's greatest operational challenges.

Military installations, local communities, agencies, and other stakeholders should collaborate to protect the long-term viability of existing and future military missions. Working together also enhances the health of economies in such communities before incompatible uses become an issue. In recognition of the close relationship that should exist between installations and adjacent communities, the OLDCC implemented the compatible use program to mitigate existing and future conflicts and to enhance communication and coordination among all affected stakeholders. This program aims to preserve the economic viability and quality of life of all community and installation stakeholders.

1.5 March ARB Importance

Local, Regional, and Economic Importance

March ARB is the largest installation in the Air Force Reserve, providing important contributions to the regional economy through sustained direct employment, indirect spending, and construction. In 2016, March ARB employed nearly 9,525 civilian and military personnel and contributed over $579 million in economic impact to the "Inland Empire" or inland Southern California region of Riverside and San Bernardino counties, according to a 2016 March ARB Economic Impact Analysis. This impact directly contributes to the three major local communities where the preponderance of military personnel and civilian employees reside: the cities of Riverside, Moreno Valley, and Perris. Additionally, March ARB helps sustain March Inland Port (MIP) activities and the regional economy by supporting the joint use of its airfield for commercial aviation – principally the diversion of freight cargo aircraft from Ontario International Airport to MIP. The presence of MIP and its access to the interstate transportation system facilitate growth within the increasingly vital regional logistics hub around March ARB.

Military Strategic Importance

March ARB is a critical DoD asset for meeting national security needs. It provides strategic airlift and refueling capability and supports the transportation of people, equipment, and materials across the globe. March is home to the 452nd Air Mobility Wing (AMW), the largest wing in the Air Force Reserve, and hosts the California Air National Guard's 144th Fighter Wing (FW) and 163rd Attack Wing. Additionally, the installation is an important asset to homeland security, as a U.S. Customs and Border Patrol Air and Marine Operations Center (AMOC) is based at March ARB. This key Department of Homeland Security (DHS) operating location received an expansion in 2018, which allowed job increases at the AMOC through Fiscal Year 2021.

Other key tenants at March ARB include the Naval and Marine Corps Reserve Center, 4th Air Force Headquarters, 701st Combat Operations Squadron, 144th FW, 362nd Air Force Recruiting Squadron, Defense Media and Visual Information Centers, 653rd Area Support Group (Army Reserve Center), 604th Sustainment Brigade, Civil Air Patrol (Squadron 45), Defense Commissary Agency, Army & Air Force Exchange Services, DHS, and March JPA.

1.6 Local Stakeholders

An early step in any planning process is the identification of stakeholders. Involving stakeholders at the beginning of the process is instrumental to recognizing compatibility issues that need to be addressed and can be resolved through the collaborative development of mutually beneficial strategies. Stakeholders include individuals, groups, organizations, and government entities interested in, affected by, or affecting compatibility issues and the outcome of the Study. Stakeholders identified for the March ARB CUS included, but were not limited to, the following:

- Local jurisdictions (Riverside County and the cities of Riverside, Moreno Valley, and Perris)
- March ARB, its leadership, and personnel
- Local, regional, state, and federal planning, regulatory, and resource management agencies
- Non-governmental organizations
- Other special interest groups
- The public (including residents and business owners)

1.7 How to Use this Study

The recommendations and strategies presented in Chapter 6: Implementation Plan should be implemented, when possible, to promote compatibility with the military mission as the community continues to develop near March ARB, and to mitigate any existing land use or compatibility issues. The Implementation Plan is the heart of the CUS and provides a toolbox of planning options to ensure that the relationship between the military and the surrounding communities remains strong and mutually beneficial. Each strategy identifies key participants and partners for successful implementation and suggests timelines to aid in implementation. It is important to understand that the CUS is a recommended set of strategies and tools, not an adopted plan. A coordinated and collaborative effort by the CUS partners will be required to successfully carry out its strategies.

1.8 Next Steps: CUS Implementation Team

The CUS will be successful only if the recommendations are carried forward for implementation. As is further described in Chapter 6: Implementation Plan, a CUS Implementation Committee should be established following the completion of the Study. The committee should include representation from each stakeholder that participated in the CUS and additional members as necessary if future issues or concerns arise. Many of the strategies developed in the Implementation Plan are meant to allow local government leaders, land and resource management agencies, and March ARB to roll them into their existing programs. Enhancing existing communication processes and establishing new ones, amending zoning tools, and updating long-range planning policies are some of the most cost-effective ways to ensure compatible development in the long term. This CUS is meant to be a living document, so certain strategies may need to be revisited as the local situation and applicable laws evolve. For more information on the Implementation Plan, see Chapter 6.

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2 Community Profiles

This chapter provides information on communities and jurisdictions surrounding March ARB most impacted by the CUS. These communities include:

- Riverside County
- City of Riverside
- City of Moreno Valley
- City of Perris
- March Joint Powers Authority

2.1 CUS Partner Community Profiles

The thriving and growing urban communities around March ARB include some of California's most prominent and fastest-growing cities. The cities of Moreno Valley, Perris, and Riverside, as well as Riverside County and the March JPA, are critical partners in a collaborative effort with the Air Force Reserve to protect sustainment of the base's current missions *and vital economic impact* while ensuring economic and development opportunities for the region. The once predominantly agricultural region around March today is a robust logistics center, not only because of its central geographic location along I-215 and numerous sub-regional corridors, but also because of the tremendous success of March JPA's redevelopment of land transferred from the Air Force by the 1993 Base Realignment and Closure (BRAC) decision. Additionally, this regional growth is facilitated by the development, under a Joint Use Agreement (JUA) with the Air Force, of the March Inland Port, a civil airport authority with associated commercial and general aviation use. Understanding regional growth dynamics and the nature of critical partners provides an essential context for understanding compatibility and resiliency challenges facing March ARB.

The goal of these profiles is to provide information that informs stakeholders of growth trends that have the potential to affect the future of March ARB, positively or negatively. This information is intended to be considered along with other factors to help public officials mitigate compatibility issues through coherent, informed planning policies and decisions which balance future development and economic growth with sustainment of the current missions and future mission growth potential at March ARB.

Additionally, these profiles inform March base leadership and its installation facilities, engineering, and planning staff of the nature of regional growth and urban development occurring "outside the fence" when considering future missions and installation development.

Source: *Google Earth, 2022*

Source: *Flicker/Daniel Orth, 2021*

County of Riverside

Year Established	Population	Land Area Encompassed
1893	2,418,185 (2020)	7,208 square miles

Riverside County is California's fourth largest county by land area and encompasses all of March ARB in the northwestern portion of the county. The mild climate attracted early settlement and cultivation of navel oranges. Today the climate continues to attract new residents, making Riverside County, at 2.4 million people, the fourth most populous county in California and the 10 largest in the U.S. Economically, Riverside County makes up half of the Inland Empire Metropolitan Statistical Area (MSA), which also contains San Bernardino County to the north. With a population of 4.6 million people, the Inland Empire, or IE, is a thriving MSA with a diverse and growing economy consisting primarily of tourism, direct international trade, professional and business services, wholesale distribution and logistics, health services and biomedical, and manufacturing. The vicinity of March ARB is a microcosm of the larger regional economy.

Riverside County has a five-member Board of Supervisors representing each district in the county. March ARB falls predominantly in District 5 along with Moreno Valley and the City of Perris. District 1 encompasses the City of Riverside and unincorporated areas of the county west of March ARB, with Districts 3 and 4 covering the eastern portion of the County. District 2, in the western portion of the County, includes the cities of Corona and Norco. Riverside County is involved in planning, zoning, and other land management actions for unincorporated areas near March. It cooperates

directly with March ARB through two key county organizations, Riverside County Flood Control and Water Conservation District (RCFC&WCD) and the Airport Land Use Commission (ALUC). The RCFC&WCD works with March ARB and other partners to maintain a comprehensive flood control infrastructure protecting the air base. The ALUC is tasked with compatible land use planning, review, and recommendations on development applications within its purview around 13 military and civilian airports, including March ARB.

Future County of Riverside land uses in the project study area are in the Mead Valley Area Plan and Lake Mathews/Woodcrest Area Plan. As I-215 runs south from the March JPA, the County of Riverside's future land use plans indicate the continued development of light industrial uses, commercial uses, and business parks on the west side of the highway. Residential use is primarily rural residential and very low density, as is encouraged around conservation habitats, and is dispersed around these uses.

City of Riverside

Year of Incorporation	Population	Land Area Encompassed
1870	314,998 (2020)	~82 square miles

Riverside, **"where the American Dream is realized,"** is one of the oldest incorporated cities in the county, predating Riverside County's establishment by 23 years. Situated north and west of March ARB, it does not share a jurisdictional boundary with the base. The city is the largest in Riverside County by area (11th in California) and by population (12th in California). Riverside is the county seat and boasts of being the Inland Empire's true "big city," as home to four colleges and universities: Riverside City College, University of California – Riverside, California Baptist University, and La Sierra University. Riverside has a long and rich pre-colonial, Spanish colonial, and post-statehood history, with 24 nationally registered historical sites and more than 100 city landmarks. It is home to the Mission Inn, the largest Mission Revival building in the United States.

Riverside is an incorporated city governed by an elected mayor and a seven-member city council. As a charter city, it adopted a council-manager form of government with a council-appointed city manager. Riverside follows a 2019 council-approved legislative agenda advocating support for March ARB to maintain and expand its current missions, including through the deployment or assignment of additional assets and resources.

General Plan 2025, Riverside's current general plan (amended 2021), sets planning objectives to:

- Avoid land use/transportation decisions that would adversely impact the long-term viability of the March Air Reserve Base/March Inland Port.
- Complete buildout of the Mission Grove Specific Plan, encouraging development that can harmoniously coexist near the March Airport facility.
- Minimize noise impact through objectives that ensure the viability of March Air Reserve Base/March Inland Port.

The City of Riverside General Plan (GP) 2025 guides future development in the area. The plan's policy identifies similar uses adjacent to existing land use. These include business and office parks and commercial uses along the I-215 corridor. To the west of the March JPA, much of Riverside is (or is designated as) medium- or medium/high-density residential, with small areas of high-density residential south of Alessandro Boulevard and north of Mariposa Avenue.

The Land Use and Urban Design Element of the GP states the long-range development of March ARB/IP as a joint military and air cargo facility will impact land use decisions in Riverside with the potential to affect March's operations. It directs that Sycamore Canyon Business Park be developed with uses complementary to the air cargo operations at March. The element also notes that large portions of Riverside's southeastern neighborhoods, particularly Orangecrest, Mission Grove, and unincorporated Woodcrest, will continue to be impacted by noise associated with March. The Land

Use Policy Map in the Land Use and Urban Design Element was developed to avoid allowing intensive new uses within the airport-influenced areas.

The GP 2025 recognizes the 2014 March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan (March ALUCP) and 2005 AICUZ within the Public Safety Element, including the eight compatibility zones and criteria for March ARB/Inland Port Airport established by the ALUCP.

The GP is buttressed by supportive zoning regulations in the form of an Airport Protection Overlay Zone. Current zoning land use permits heavy commercial and industrial land use within the March aircraft safety zones. Development controls include limiting development within areas subject to high noise levels and limiting the intensity and height of development within aircraft hazard zones.

Source: *Wikimedia Commons/2021*

City of Moreno Valley

Year of Incorporation	Population	Land Area Encompassed
1984	208,634 (2020)	~52 square miles

Moreno Valley, **"where dreams soar,"** is situated north and east of March ARB and adjacent to the main base. The city was incorporated as a general law city in 1984 through a merger of the existing unincorporated communities of Edgemont, Moreno, and Sunnymead – communities that grew from the presence of March Field before World War II. Today Moreno Valley is the second largest city in Riverside County by population and the 20th largest in California. It is part of the Riverside-San Bernardino-Ontario Metropolitan Area, also known as the *Inland Empire*. It is also the second largest city by land area in the county and 17th in the state. It calls itself the *home of March ARB*, a claim bolstered by its shared history and proximity to the installation.

Moreno Valley is a general law city governed by an elected mayor and a four-member city council. As a general law city, it follows state statutes for such municipalities, with subsequent adoption under state law of a council-manager form of government. Moreno Valley follows a 2022 council-approved legislative platform advocating:

- Support for federal legislation that would appropriate funding that would expand both active and reserve operations and the addition of necessary flight crews at March ARB.
- Support for federal legislation to increase joint services' use of March ARB.
- Opposition to legislation that would reduce the joint services' use of March ARB or eliminate the base entirely.

Additionally, Moreno Valley adopted **General Plan 2040** in 2021, which provides strategic goals for conformance with March AICUZ and Airport Land Use Compatibility Plan (ALUCP) in support of military readiness and (in coordination with March ARB, March JPA, and Riverside ALUC) specifically to:

- Consider development impacts, density, and intensity of nearby land use on the military mission.
- Provide airport and aviation safety measures for the March joint use airfield.
- Align planning to AICUZ and ALUCP.
- Consider circulation into and around military airports.
- Incorporate site standards to minimize bird strikes in support of March Bird Air Strike Hazard plans.

While much of Moreno Valley has been built out near the installation, some areas of opportunity exist near the installation's eastern boundary. Future land uses in this area are primarily business parks, open space, and commercial. Following the March ARB boundary from east to west along Cactus Avenue, Moreno Valley's future land use is primarily business park and light industrial. Many parcels just north of Alessandro Boulevard are planned for R-3 residential, business park and light industrial and business flex.

The General Plan 2040 also provides strategic goals for building community resiliency to climate change and other risks, and for collaboration and partnering with local agencies for energy, groundwater, and stormwater infrastructure planning and capital improvements. Specific concerns relative to March ARB are:

- Emergency evacuation routes
- Fire risk
- Flood risk
- Ground liquefaction hazard
- Heat risk

This general plan also advocates the conservation of regional open space and habitat, which are recognized as compatible with military influence areas around installations. Of note in the plan, the city supports the continued development of the Juan Bautista De Anza Trail – a planned and partially developed 1,200-mile recreational and active transportation trail system that will cross the intersection of Cactus Avenue and Heacock Street near the historic front gate of March Field. This trail system follows the historic route from Nogales, Arizona to San Francisco, California. When complete, the trails will connect March ARB to an active walkshed encompassing March Field Park, Patriot Park, and Santiago Park.

Source: *City of Moreno Valley, 2022*

City of Perris

Year of Incorporation	Population	Land Area Encompassed
1911	78,700 (2020)	~32 square miles

The City of Perris is south of March ARB and abuts the base fence line to the southwest. It is named after Fred T. Perris, the chief engineer for the California Southern Railroad who surveyed the area and added a station to what was then the town of Perris. In May 1911, Perris became an incorporated city through a community petition to Riverside County. Today Perris is the 12th largest city by land area in Riverside County and is part of the Inland Empire.

Perris is a general law city governed by an elected mayor and four at-large council members. Like Moreno Valley, the city follows state statutes and appoints a city manager to administer the operations of the city government. Appointed by the city council, the city planning commission has four members whose overarching goals are to:

- Foster sustainable urban design, policy, and development.
- Improve the Zoning Code for clarity, consistency, and flexibility.
- Increase community awareness and involvement in planning.

The 2016 **Perris General Plan** Land Use Element recognizes the March ARB Clear Zone (CZ) and Accident Potential Zones (APZs) by restricting the types of intensities and uses on some properties in the North Perris planning area. A goal of the land use element is to protect the city from natural and man-made disasters. Other goals include policy and implementation measures which align with the ALUCP by:

- Ensuring land use compatibility near March ARB according to policies from the 2014 ALUCP.
- Implementing an Airport Overlay Zone (AOZ) to reflect the boundaries and policies of the ALUCP.
- Circulating all development plans in the APZs and CZs to the Department of the Air Force (DAF) and March ARB per AICUZ guidelines.

The Perris Valley Commerce Center Land Use Plan includes most of the land in the study area. Most future land uses will consist of commercial and business offices, with a small amount of residential, including multifamily. Much of the Perris Valley Commerce Center just south of the March ARB airfield has large warehouse development.

The Perris General Plan Safety Element recognizes specific land use compatibility guidelines, further aligning with policies set forth by the ALUCP and March ARB AICUZ for allowable land uses within the safety zones and noise contours.

The Healthy Community and Safety Elements of the Perris General Plan provide strategic goals for resiliency to climate change and other risks, aligning with specific concerns relative to March ARB, such as: fire hazards, flood risks, and ground liquefaction hazards.

The Healthy Community Element supports goals and objectives to encourage development patterns that reduce commute times and promote public and open spaces. Increased sustainability measures aligning with March ARB goals include supporting regional water quality efforts to balance water conservation and best practices in watershed management and reducing emissions to improve air quality in the South Coast Air Quality Management District (SCAQMD).

Source: *Creative Commons/Doc Searls, 2013*

March Joint Powers Authority

Year Established	Employment Population	Land Area Encompassed
1993	10,336	6.9 square miles

The March JPA was formed by and made up by the County of Riverside and the cities of Moreno Valley, Perris, and Riverside to address use, reuse, and joint use as a response to the 1993 BRAC decision on March Air Force Base. The March JPA agreement created the March Joint Powers Commission (JPC), the authority's governing body which has planning, zoning, and development authority for 4,400 acres of the former Air Force property. The commission comprises eight elected officials (two from each of the four jurisdictions) selected by the jurisdictions' governing bodies. March JPA has land use and planning authority, and is responsible for all entitlements, building permits, and clearances. March Inland Port Airport Authority (MIPAA), described below, is a governing body under the governance umbrella of the March JPA.

The March JPA General Plan addresses future land uses around today's March ARB. Many future uses are industrial, with a small number of business parks, commercial, and mixed uses dispersed throughout. The March JPA General Plan aims to ensure that March JPA development does not negatively impact March ARB.

Today the March JPA continues to build out a regional jobs center with the goal of providing 38,000 jobs within its jurisdictional boundaries. When complete, this jobs center will include the completed development of the Meridian North business campus, development underway for the Meridian South business campus, and planned future development of Meridian West business campus. Successful smaller March JPA developments include the March Veterans Village and the Ben Clark Training Center. Currently, March JPA is home to the March Inland Port, the U.S. Customs and Border Protection Air and Maritime Operations Center, the CALFIRE Southern Geographic Coordination Center, the Armed Forces Reserve Center, and the March Field Air Museum.

March Inland Port Airport Authority

Year Established	Employment Population	Land Area Encompassed
2014	900	261 acres

MIPAA, a governing body under the governance umbrella of the March JPA, was formed by March JPA in 1996 and operates under a revised JUA with the Air Force from 2014. MIPAA is responsible for port operation and the development of the MIP, a joint-use aviation facility targeted for air cargo operations. MIPAA provides land-side support to commercial and general aviation that operates in and out of the port, including more than one million square feet of ramp space that can accommodate large aircraft up to 900,000 pounds. Under the JUA the port is authorized to conduct up to 21,000 aircraft operations annually through 2039, with an option to extend the JUA to 2054. March Inland Port provides the capacity to support air freight companies such as UPS and Prime Air and defense contracting firms such as Omega Air Refueling and Meta Strategic. It offers fixed-base operator aeronautical services through Million Air. Additionally, March Inland Port provides air terminal capacity supporting unit rotations to the Army's National Training Center at Fort Irwin for roughly 43,000 soldiers a year.

Source: *Matrix Design Group/ Bren Cox, 2022.*

2.2 Community Growth Trends

Population Trends (2010 and 2020)

Population trends outline the regional context for projecting growth and development in the surrounding cities. These trends can help highlight future compatibility issues between March ARB and surrounding communities.

Identifying where population growth is occurring is also essential for planning future development. Table 2.1 shows the change in population between 2010 and 2020.

Table 2.1 Population Change

Jurisdiction	2010	2020	Number Change	Percent Change
California	37,253,956	39,538,223	2,284,267	6.1%
City of Moreno Valley	193,365	208,634	15,269	7.9%
City of Perris	68,386	78,700	10,314	15.1%
City of Riverside	303,871	314,998	11,127	3.7%
Riverside County (gross)	2,189,641	2,418,185	228,544	10.4%

Source: *2020 U.S. Census*

Subarea Forecasting

The Southern California Association of Governments (SCAG) develops socioeconomic estimates and growth projections including population, households, and employment for cities and Transportation Analysis Zones (TAZs) in the SCAG region through enhanced forecasting methods and interactive public outreach. These estimates and projections provide the analytical foundations for SCAG's transportation planning and other programs.

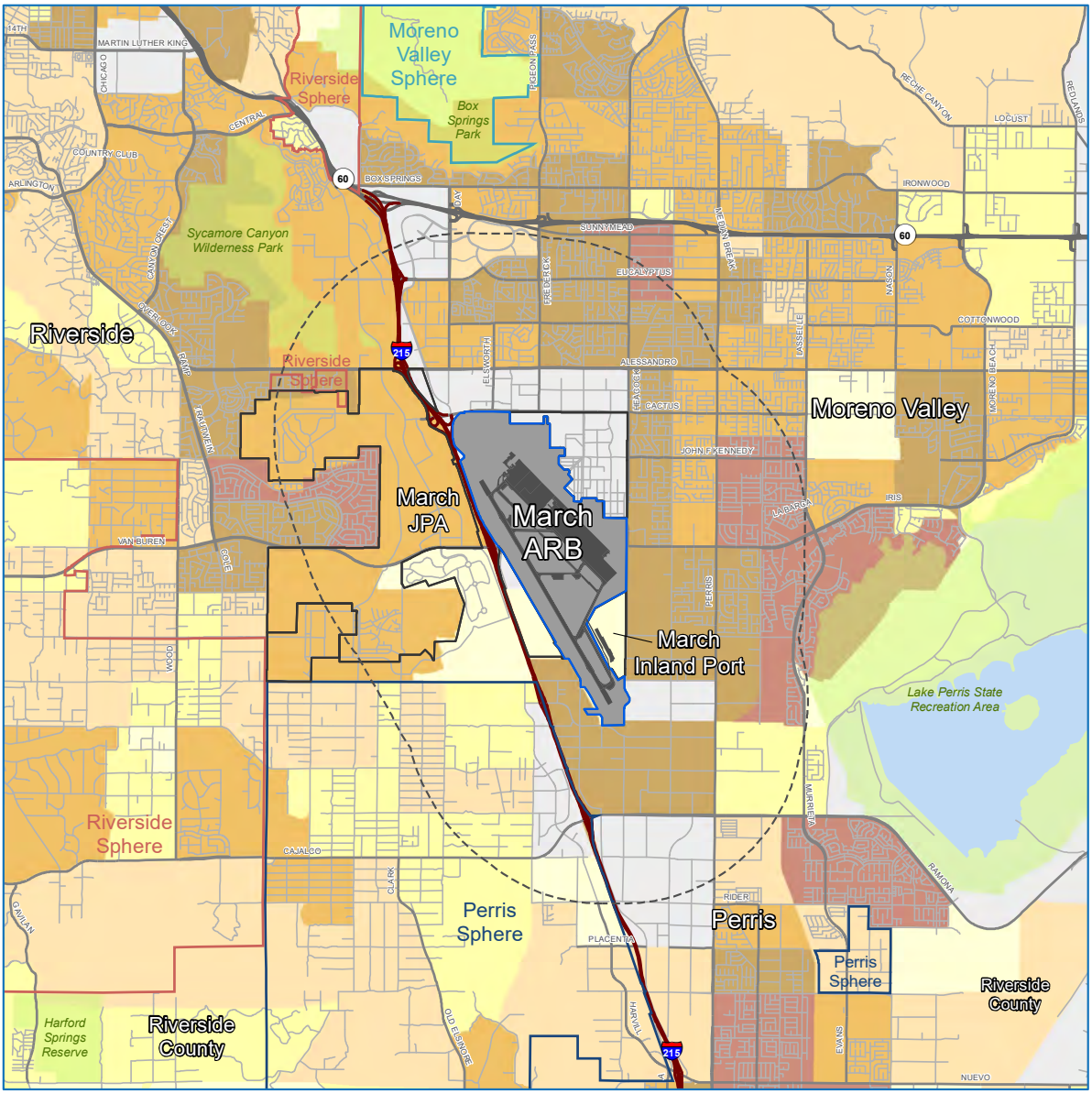
The transportation planning area covers 191 jurisdictions and six unincorporated communities in Southern California. This region is divided into over 11,000 small areas. These small areas are known as the Tier 2 TAZ system. This zone system is uniquely designed to allow highly detailed traffic analysis and predictions using SCAG's sophisticated transportation model.

Population, household and employment estimates, and forecasts are maintained at the jurisdictional and county unincorporated level. This provides SCAG current and future demographic profiles of the region in great geographical detail. These profiles are key inputs not only to SCAG's transportation model, which uses them to help estimate current and future transportation conditions, but also to inform the vicinity around
March ARB.

Population Forecast by 2035

The 2035 population forecast using the SCAG TAZ data described above is shown in Figure 2.1. The raw number population projection for each TAZ is geographically displayed on this choropleth map using numeric breaks as displayed in the map legend. This map demonstrates projected increased population densification within the study area over the next 13 years. As indicated by the darker colors, some areas are projected to grow to more than 8,000 people for a multitude of TAZs in the vicinity of March ARB.

Figure 2-1 Forecasted Population by 2035



Economic Trends and Growth Potential

March ARB is ranked third among the 10 largest employers in the city of Riverside, surpassed only by the County of Riverside and University of California, Riverside. A 2016 economic impact study conducted by the Rose Institute of State and Local Government at Claremont McKenna College estimated the annual economic regional impact from March ARB to be $579 million: a significant figure when compared to an adjusted 1996 economic impact figure of $758 million (adjusted from $500 million in 1996 using Bureau of Labor Statistics CPI Inflation calculator for 2016 numbers) from the former air force base. Further, a 2020 DoD report states DoD spending during 2020 in Riverside County to be an estimated $453.7 million, making the County California's ninth largest recipient county for DoD spending.[1]

The March JPA projects further economic growth through the creation of 38,000 jobs generated by long-term financial investment and future development of the former air force base property when complete.

Distribution and logistics center development in the vicinity around March ARB reflects the greater global change in consumer preferences. There has been a 17% worldwide increase in digital e-commerce (global retail trade) driven by changes in consumer behavior during the pre-vaccination period of the COVID-19 pandemic[2]. Such increases present an opportunity for growth in jobs and trade, mainly in areas with the resources to provide hub ports to transport e-goods, such as the March Inland Port. The proximity to several airports, a large consumer market, relatively affordable land for large warehouses, and proximity to ports and rail have made this vicinity a destination for large distribution centers. Amazon, Ross Dress for Less, Harbor Freight Tools, and Walgreens all have large facilities adjacent to March ARB.

The lists of each entity's top 10 employers help illustrate the fact that this area is an ideal location for these large distribution centers.

Riverside County[3]

1. County of Riverside - 21,672
2. Amazon - 10,500
3. University of California, Riverside – 9,770
4. March ARB - 9,600
5. Stater Bros - 8,304
6. Kaiser Permanente Riverside Medical Center - 5,700
7. Pechanga Resort & Casino - 5,078
8. Walmart - 4,931
9. Corona-Norco Unified School District - 4,903
10. Ross Stores - 4,321

[1] Defense Spending by State Fiscal Year 2020, DoD OLDDC, 2021.
[2] UNCTAD – How Covid-19 triggered the digital and e-commerce turning point: https://unctad.org/news/how-covid-19-triggered-digital-and-e-commerce-turning-point
[3] https://rivcoeda.org/Portals/0/demographicReports/Major%20Employers%202019.pdf?ver=2020-05-06-080926-827

City of Perris[4]

1. Ross Stores – 1,916
2. Val Verde Unified School District – 1,368
3. Perris Union High School District – 945
4. Perris Elementary School District – 848
5. Lowe's CA Regional Distribution Center – 799
6. NFI Industries – 728
7. Eastern Municipal Water District – 615
8. Home Depot Distribution Center – 543
9. Walmart Supercenter – 405
10. CR & R Waste – 350

City of Moreno Valley – Top 10 Employers[5]

1. March ARB – 9,600
2. Amazon – 7,500
3. Riverside University Health System Medical Center – 3,400
4. Moreno Valley Unified School District – 3,100
5. Ross Stores for Less/dd's Discounts – 2,400
6. Moreno Valley Mall – 1,500
7. Kaiser Permanente Community Hospital – 1,457
8. Skechers USA – 1,200
9. Harbor Freight – 788
10. Deckers Outdoor – 700

[4] https://www.cityofperris.org/home/showpublisheddocument/14418/637643002197400000
[5] https://www.morenovalleybusiness.com/wp-content/uploads/2020/02/Moreno-Valley-Major-Employers-2020-updated.pdf

City of Riverside – Top 10 Employers[6]

1. County of Riverside – 22,000
2. March ARB – 9,600
3. University of California, Riverside – 8,735
4. Kaiser Permanente – 4,346
5. Riverside Unified School District – 4,313
6. City of Riverside – 2,485
7. Riverside Community Hospital – 2,200
8. Riverside Community College District – 2,100
9. Alvord Unified School District – 1,898
10. Cal Baptist University – 1,442

The City of Riverside made economic development one of the most critical goals in its 2021 General Plan, which outlines 12 policies to help guide this growth. Each policy aims to help the city to become more competitive in regional, national, and international markets. The emphasis on sustaining growth across all markets will continue to impact March ARB as the surrounding area is built out and becomes more populated.

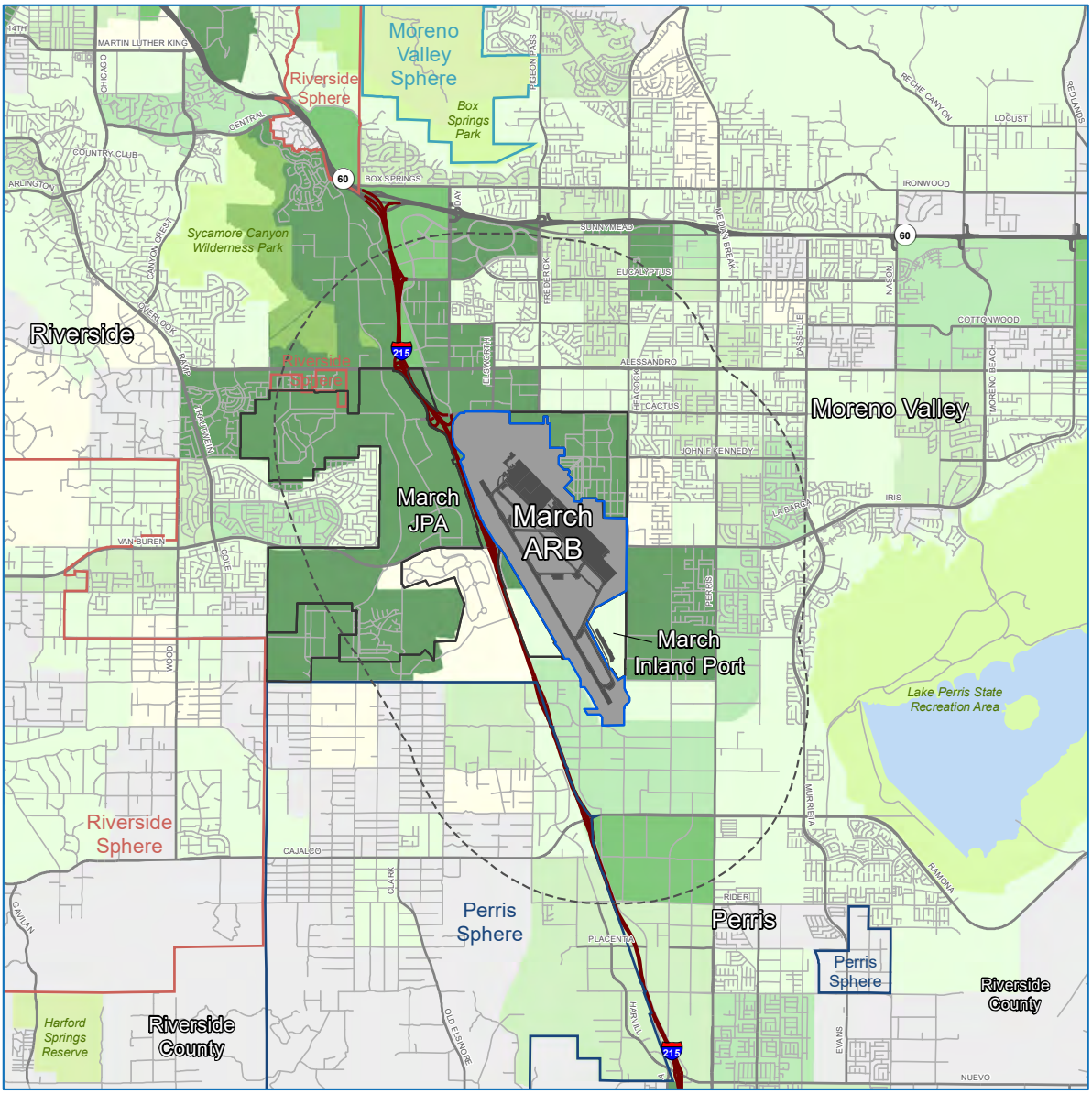
The Western Riverside Council of Governments (WRCOG) also actively supports economic development through support of state legislation to attract and retain more regional businesses[7].

Employment Forecast 2045

The 2045 employment forecast using the SCAG TAZ data described above is shown in Figure 2.2. The total employment projection for each TAZ is geographically displayed on this choropleth map using numeric breaks as displayed in the map legend. This map demonstrates projected increased employment within the study area over the next 20 years. Some areas are projected to grow to more than 4,000 jobs for a multitude of TAZs in the vicinity of March ARB, as indicated by the darker colors.

[6] https://riversideca.gov/cedd/economic-development/data-reports/top-50-employers
[7] https://wrcog.us/155/1-Economic-Development

Figure 2-2 Forecasted Employment by 2045



Housing Trends

Housing trends typically correspond to population growth and can indicate economic activity and vitality in an area. Rapid housing growth or slow-growth areas may reflect population increases, decreases, or migration out of specific communities. The rate of housing development is an indicator of the overall rate of development occurring in the region, which should be considered for compatibility with operations at March ARB.

Housing Units

There is no government-provided military housing on March ARB, except temporary lodging for Reserve/Guard components on temporary assignment to the base or attending annual training or Unit Training Assignments drill weekends. Military personnel and government civilians assigned to March live in the local communities, which provide housing for the more than 7,000 military personnel assigned to March ARB and nearly 2,500 civilian employees who work on the base. There was an increase in housing units in the local vicinity between 2010 and 2020 (Table 2.2). The City of Perris and Riverside County experienced a higher growth rate than the overall state growth while the cities of Moreno Valley and Riverside saw more modest growth.

Table 2.2 Housing Stock Trends

Jurisdiction	2010 (Units)	2020 (Units)	Number Change	Percent Change
California	13,680,081	14,392,140	712,059	5.2%
City of Moreno Valley	55,559	57,413	1,854	3.3%
City of Perris	17,906	19,424	1,518	8.5%
City of Riverside	98,444	100,255	1,811	1.8%
Riverside County	800,707	848,549	47,842	6.0%

Source: *2010 and 2020 U.S. Census*

Housing Values

Housing value trends can indicate the development level occurring near the project study area. These fluctuations can also highlight desirable locations for home buying. Rent trends also provide insight into the local market conditions.

Using the latest Federal Census data, Table 2.3 shows both the median housing purchase price and median monthly gross rent for 2010 and 2019 for each community within the project study area and for California as a whole. Median home value increased substantially over the period. Like median housing values, the median gross rents for all jurisdictions within the project study area experienced an increase between 2010 and 2019; however, median gross housing values on a percentage basis rose more substantially than median gross rent in all instances. All jurisdictions in the project study area had greater percent changes to the median housing value than the state of California, while all median rent percent increases were below the state's median rent increase.

Table 2.3 Change in Median Home Purchase Price and Median Gross Rent Between 2000 and 2019

	Median Home Purchase Price			Median Gross Rent		
Jurisdiction	2010	2019	2010 to 2019 % Change	2010	2019	2010 to 2019 % Change
California	$370,900	$505,000	36.16%	$1,163	$1,614	29.23%
City of Moreno Valley	$167,600	$312,000	46.28%	$1,266	$1,636	22.62%
City of Perris	$156,000	$340,800	54.23%	$1,110	$1,300	14.62%
City of Riverside	$228,100	$411,000	44.50%	$1,081	$1,504	28.13%
Riverside County	$227,900	$384,400	40.71%	$1,121	$1,497	25.12%

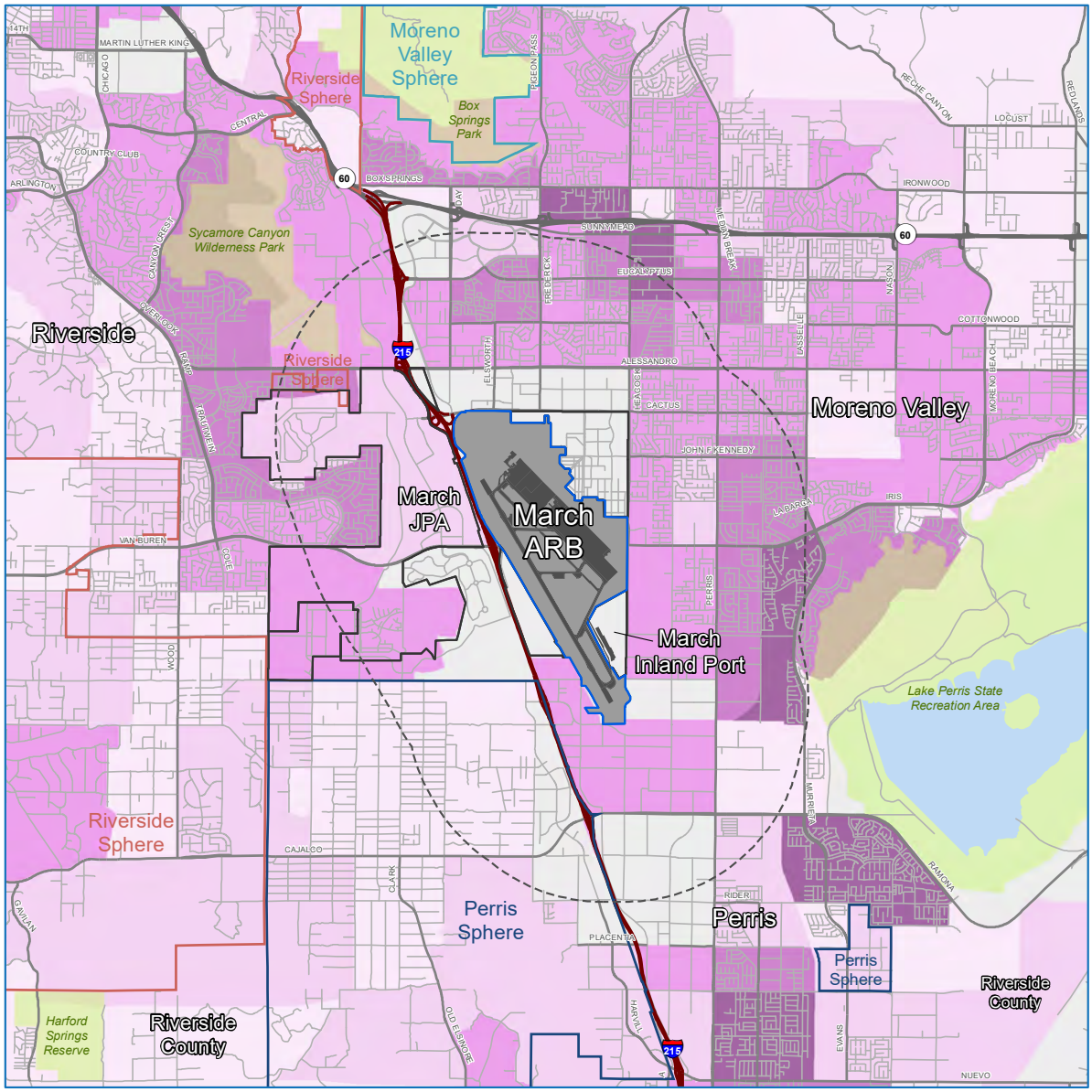
Source: *2019 American Community Survey 1-Year Estimate, 2010 U.S. Census*

Forecasted Housing Growth

Figure 2-3 in section 2.2 details the 2045 housing forecast using the SCAG TAZ data. The forecasted households for each TAZ is geographically displayed using numeric breaks as displayed in the map legend. This map demonstrates projected household densification by TAZ within the study area over the next 20 years. Some areas are projected to grow to more than 3,000 households for a multitude of TAZs in the vicinity of March ARB as indicated by the darker shades.

Notable planned housing growth is indicated in the City of Riverside's amended Canyon Springs Business Park Specific Plan, which will allow up to 2,000 dwelling units.

Figure 2-3 Forecasted Households by 2045



2.3 Regional Transportation

March ARB is located along I-215, the primary access-controlled highway that services the base through two exits (25 and 27A). Two miles to the north, State Route 60 provides direct access to downtown Los Angeles.

Metrolink, Southern California's regional passenger rail system, consists of seven lines and 62 stations along 534 miles of the rail network. The system operates in Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. The newly extended Perris Valley Line (PVL) runs 24 miles from downtown Riverside to a new South Perris station. The Moreno Valley/March Field Station along this new line was built to serve March ARB and the surrounding community. Currently, there are plans to extend the PVL to Hemet.

Amazon Air currently operates five flights a day out of March Air Base to support Amazon's warehouses and distribution centers in the area. Ontario International Airport is located 25 miles northwest of the base and offers daily flights from various airlines. It is also a shipping hub for United Parcel Service and Federal Express.

Roadways

Roadways in the study area are a mix of interstates, U.S. highways, state routes, county roads, and local roads. I-215 is a primary highway that runs in a southeast-to-northwest direction through the study area. The highway bisects the March JPA planning area. I-215 to the north of the study area connects with multiple other state routes, highways, and interstates, most notably I-15. I-215 to the south of the study area connects with State Route 74 which provides access to the City of Hemet before connecting back with I-15. State Route 60 serves Los Angeles County, Riverside County, and San Bernardino County travelers, extending westerly to Los Angeles and easterly to its merger with Interstate 10 in the City of Beaumont. Interstate 10 extends easterly to Arizona and points east.

Close to 40 percent of the nation's goods travel through the Inland Empire and are stored in warehouses[8]. Within the study area, there are primary goods movement routes, which are integral to the distribution of goods to the rest of the state and nation. The primary goods movement routes for the area are I-15, SR-91, and I-215[9].

The movement of goods plays an important role in both the circulation network and the economy of a region. Due to the location of the study area between the Los Angeles metropolitan area and destinations in the remainder of the country, the area serves as an important path for goods movement via airports, railways, and roadways. Goods movement in the study area is accommodated primarily by a set of designated truck routes, even though a rail line is also in the study area. Intermodal freight facilities, major freight generators, and warehouse distribution centers are significant contributors to goods movement in the study area. Warehousing and logistics facilities are major employment and trip generators, with many facilities located along I-215. Many logistics companies, as well as retail and online vendors, have warehouses in the Inland Empire region. Among the largest facilities, Amazon has multiple distribution and fulfillment centers in various cities and uses March ARB, Ontario International Airport, and San Bernardino International Airport for goods movement.

[8] Riverside County Long Range Transportation Study, RCTC, December 2019.

[9] Inland Empire Comprehensive Multimodal Corridor Plan (IE CMCP).

The Inland Empire Comprehensive Multimodal Corridor Plan (IE CMCP) was completed in October of 2020 to help local, regional, and state agencies deal with the balancing of infrastructure, livability, and economic, and sustainability needs as related to the regional transportation system. The IE CMCP covers the urbanized portion of both Riverside and San Bernardino Counties, excluding the Coachella Valley. The original concept for the plan was to have two corridors, one running north/south and the other east/west. However, as the study progressed, it was decided to create focused smaller "sub-corridors" to facilitate a more detailed assessment of corridor conditions and to focus on the recommended improvements and strategies. Five major regional transportation sub-corridors were identified for north/south travel and five for east/west travel, as listed in Table 2.4 and illustrated by Figures 2-4 and 2-5.

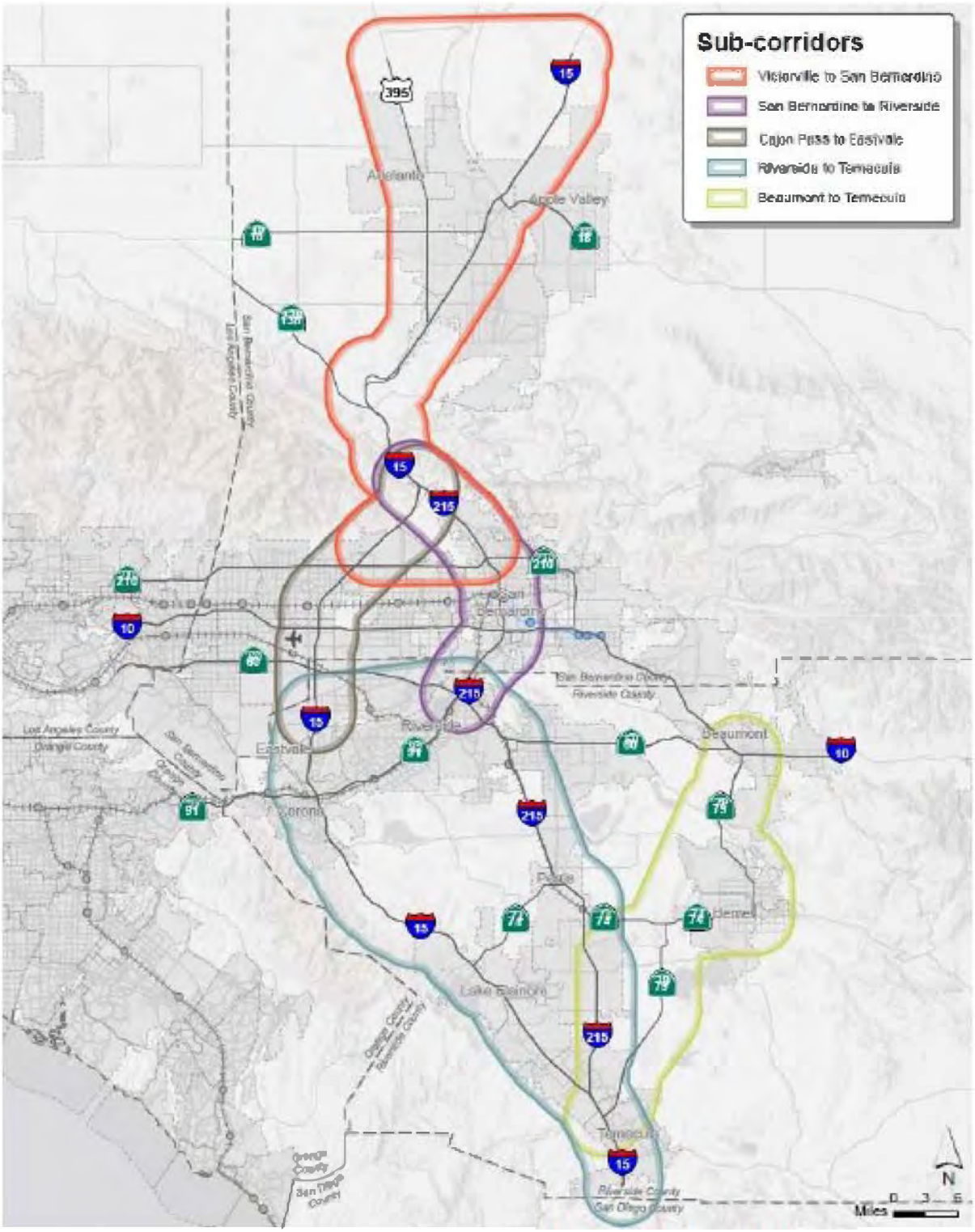
Table 2.4 Major Regional Transportation Sub-Corridors

North-South Sub-corridors:	East-West Sub-corridors:
1. Victorville to San Bernardino	1. Apple Valley to LA County Line
2. San Bernardino to Riverside	2. Banning to Rialto
3. Cajon Pass to Eastvale	3. Riverside/Rialto to LA County Line
4. Riverside to Temecula	4. Riverside to Orange County Line
5. Beaumont to Temecula	5. Hemet to Corona

Source: *2020 Inland Empire Comprehensive Multimodal Corridor Plan*

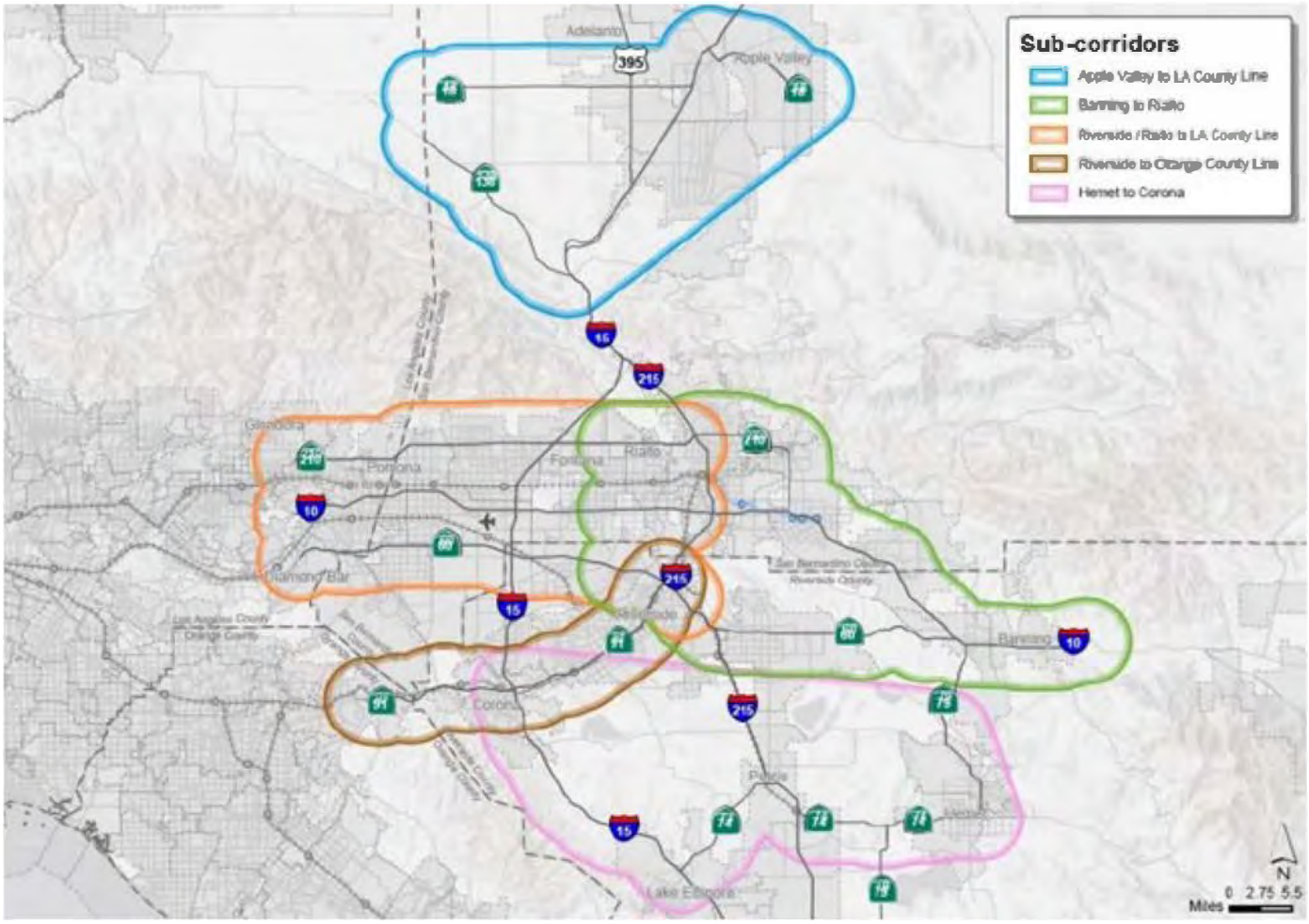
As part of the Inland Empire, the region around March ARB in western Riverside County is a major trade route for the economy at every level: global, national, state, regional, and local. As a result, March ARB is situated in the heart of a logistics network of trucking corridors that transport goods from the ports of Los Angeles and Long Beach to the rest of the country and to Ontario International Airport and San Bernardino International Airport, both of which are major cargo hubs. Concentrations of warehouses are located at the southerly edge of Moreno Valley and the northerly edge of Perris easterly of I-215, as well as in the unincorporated Mead Valley/North Perris area westerly of I-215. (see figure 2-4). The IE has had one of the fastest-growing economies of large metro areas in the country, with job growth in San Bernardino and Riverside counties outpacing the growth statewide. Job growth in the study area has been fueled by new transportation and warehousing, construction, health care, accommodation, and food services jobs. Per the IE CMCP, the area around March ARB is one of the most employment-dense sections of this area of Riverside County.

Figure 2-4 Regional Distribution Economy: North-South Oriented Sub-Corridors



Source: *Inland Empire Comprehensive Multimodal Corridor Plan, October, 2022*

Figure 2-5 Regional Distribution Economy: East-West Oriented Sub-Corridors



Source: *Inland Empire Comprehensive Multimodal Corridor Plan, October, 2022*

The transportation network servicing the area around March ARB cannot be overstated due to the type and size of development that has occurred around the base. In addition, the employment intensity and warehouse density are due, in part, to the success of the Inland Port Airport that has stemmed from the efforts of the March JPA. This effort has created a unique dual mission for the March airfield, serving both as a commercial enterprise and a military base. The employment density of warehouses on a per square-foot basis is very low compared with other types of commercial and industrial land uses, which is appropriate in areas near airports; however, in some cases, the bulk and proximity of these warehouses have led to operational issues for military aircraft in flight.

Railways

The Southern California Regional Rail Authority operates the region's commuter rail service, Metrolink, which serves the counties of Los Angeles, Orange, San Bernardino, Riverside, and Ventura. The study area is served with four Metrolink lines: Inland Empire-Orange County, Riverside, San Bernardino, and 91/Perris Valley. The San Bernardino line, serving San Bernardino to LA Union Station, has the highest daily ridership of any line in the Metrolink system as shown in Table 2.5. The Burlington Northern and Santa Fe (BNSF) Railway currently owns a rail line that runs along the eastern side of I-215, north of I-215 & State Route 60 interchange, and on the westerly side of I-215 in the immediate vicinity of March ARB, which connects to the Union Pacific (UP) line to the north in Riverside and ends in the south at San Jacinto.

Table 2.5 Metrolink Daily Ridership, 2018-2019

Line	Weekday	Saturday	Sunday	Stations
Antelope Valley Line	5,729	2,282	1,818	12
Inland Empire-Orange County Line	4,501	542	373	15
Orange County Line	8,699	2,331	1,794	15
Riverside Line	4,251	n/a	n/a	7
San Bernardino Line	9,736	3,794	2,332	14
Ventura County Line	3,639	n/a	n/a	12
91/Perris Valley Line	2,934	799	548	13

Source: *Southern California Regional Rail Authority, METROLINK Fact Sheet, Q3 2018-2019*

Airports

The Ontario International Airport is the closest major airport to March ARB and handles an average of 454,800 tons of air cargo a year, making it the second largest air cargo operation in the state after Los Angeles International and the fifth largest air cargo port in the United States. March ARB/MIP provides additional aviation capacity to the region, giving air traffic relief for cargo that otherwise would use Ontario International Airport.

Riverside Municipal Airport, owned and operated by the City of Riverside since 1953, is the neighborhood's dominant feature on the north side of the city. The airport was once expected to grow to a substantial scale comparable in site size and runway length to John Wayne Airport in Orange County. Instead, the airport fulfills an important niche in providing private general aviation services, housing the Riverside Police Department's Aviation Unit, and hosting occasional military use (usually helicopter flights associated with the region's military bases).

Perris Valley Airport is a privately-owned general aviation airport. The airport is extensively used for ultralight and parachuting activities. This public-use airport does not have a control tower or runway lighting and only operates during daylight hours.

2.4 Compatibility and Resiliency

What is Compatibility?

The goal of compatibility planning is to promote a collaborative environment in which community and military entities communicate and coordinate to address compatibility concerns and develop mutually supportive actions, the implementation of which will allow both parties to achieve their objectives. This collaborative approach provides the context in which policies and actions can be developed and recommended through the CUS in Chapter 6.

Why is Compatible Land Use Planning Important?

Although military installations and nearby communities may be separated by a physical boundary, they often share natural and man-made resources such as land, water, airspace, transportation networks, and other infrastructure. Because many resources are shared, the activities or actions of one entity can unintentionally impact another, resulting in conflicts despite the many positive interactions among local jurisdictions, agencies, and the military.

As communities develop and expand in response to growth and market demands, there is potential for incompatible development to be located closer to military installations and associated operational areas. New development that is not properly assessed for compatibility can generate new, or exacerbate existing, land use conflicts and other compatibility issues. This process is referred to as encroachment. Encroachment can have negative impacts on community safety and economic development as well as on the sustainability of military activities and readiness; therefore, addressing encroachment issues is currently one of the military's greatest operational challenges nationwide.

Military installations, local communities, agencies, and other stakeholders should collaborate to protect the long-term viability of existing and future military missions. Working together also enhances the health of economies in such communities before incompatible uses become an issue. In recognition of the close relationship that should exist between installations and adjacent communities, the OLDCC implemented the compatible use program to mitigate existing and future conflicts and to enhance communication and coordination among all affected stakeholders. This program aims to preserve the economic viability and quality of life of all community and installation stakeholders.

What is Resiliency?

Resiliency is the ability to bounce back. For this study, it refers to the ability of a military base to withstand the impacts of severe weather and adapt to changes in climate driven by a changing atmosphere. The effects of this, such as increased flood potential and wildland fires, can present operational and planning challenges to the military and surrounding communities as resources are depleted and environments altered. Military resiliency refers to the capacity and redundancies that military installations need to have in place to support critical systems and infrastructure to sustain mission requirements in the event of emergencies, disasters, or prolonged effects related to climate change.

Military installation resilience is defined in 10 U.S.C. §101(e)(8) as: the capability of a military installation to avoid, prepare for, minimize the effect of, adapt to, and recover from extreme weather events, or from anticipated or unanticipated changes in environmental conditions, that do, or have the potential to, adversely affect the military installation or essential transportation, logistical, or other necessary resources outside of the military installation that are necessary in order to maintain, improve, or rapidly reestablish installation mission assurance and mission essential functions.

California is historically prone to a wide range of natural events including earthquakes, wildfires, liquefaction, landslides, flooding (coastal and inland), and most recently the drought that is occurring throughout the southwest United States. March ARB has not been immune to these events and, more specifically, has been prone to flooding which at times has impacted operations at the base. The drainage for the northern portion of March ARB after significant rain events has shut down airfield operation of the runway.

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3

March ARB Overview

This chapter provides an overview of the physical setting, military history, assigned units, and current operations at March ARB. Identifying and describing the activities performed on the military installations provides valuable insight into the importance of the military as both a strong community partner and a national strategic asset. This information will help stakeholders make informed decisions regarding future development and economic growth in their communities, which may be influenced by installation activities because of their relative proximity. These decisions may affect the continued existence and future role of the installation.

3.1 March ARB Setting and History

March ARB is in western Riverside County, California, approximately 70 miles east of Los Angeles. It occupies approximately 2,300 acres of continuous property as well as seven geographically separate properties. The base is situated at an approximate elevation of 1,500 feet on the high valley floor of Perris Valley between the cities of Riverside and Moreno Valley. Directly west of the base, on the other side of I-215, is the March Field Inland Port and the Riverside National Cemetery. The cities of Moreno Valley and Perris are just east of the installation. Lake Perris reservoir is approximately eight miles from the base.

History

March is one of the oldest military airfields in the United States, opening in 1918 as the result of successful lobbying by the City of Riverside to the War Department and Congress. The base was originally named Alessandro Flying Training Field but was renamed March Field shortly after its establishment in honor of Lieutenant Peyton C. March, Jr. The airfield played an important role in the interwar years and during World War II as an Army Air Corps airbase where bombardment groups performed final training before embarking for duty in the Pacific It was designated as March Air Force Base in 1948, when the installation served as a Strategic Air Command base, flying B-29, B-47, and B-52 bomber aircraft for 50 years under the control of the U.S. Air Force (USAF). Its strategic bombing days ended in 1982 with the retirement of its B-52s and the arrival of the KC-10 Extenders. Its KC-135 Stratotankers have been stationed there since the 1960s.

In 1993, the base was subjected to realignment, which subsequently led to its redesignation from an active-duty base to a Reserve Base in 1996[1]. The installation was formally designated as **March Air Reserve Base** and assigned to the command of the 452nd AMW, the host to the Air Force Reserve Command's (AFRC) Fourth Air Force (4th AF). As part of the realignment, approximately 4,400 acres of March AFB land was deemed excess and was ceded to the March JPA, which is a federally recognized reuse authority responsible for activities involving reuse, planning, and development of such land. March ARB is located along I-215, adjacent to the Cities of Riverside, Perris, and Moreno Valley.

[1] About the JPA: https://marchjpa.com/about.php

Source: *March ARB 2021*

3.2 Mission and Operations

Fourth Air Force, Air Force Reserve

Fourth Air Force, headquartered at March ARB, is one of three numbered air forces assigned to the AFRC, Robins Air Force Base, Georgia. As a reserve command, 4th AF directs the activities and supervises the equipping and training of 24,000 Air Force reservists in unit programs across the continental United States, Alaska, Hawaii, and Guam. The command is responsible for 300 units and 33,500 personnel. Its roughly 200-member staff is made up of air reserve technicians, traditional reservists, and civilian employees who are dedicated to ensuring that assigned units and personnel are properly organized, trained, equipped, and ready to support national security requirements across a full spectrum of operations from war to contingency situations. 4th AF Units provide strategic airlift, airdrop, aeromedical, air refueling, and associated expeditionary support activities.

Source: *TSgt Rick Sforza/US Air Force 2022*

452nd Air Mobility Wing, Air Force Reserve

The 452nd AMW is the host organization responsible for all operational functions at March ARB supporting the Air Mobility Command (AMC), Air Combat Command (ACC), and Pacific Air Forces and is the AFRC's largest wing. The primary mission of the U.S. Air Force Reserve Command (AFRC) 452nd AMW is to:

- Provide airlift support for the USAF.
- Train in tactical airlift and airdrop of personnel and supplies in combat, air refueling, and aeromedical evacuation.

The wing conducts essential training and readiness missions, including mid-air refueling and transport of equipment and personnel in airspace across Southern California using C-17 Globemaster III and KC-135R Stratotanker aircraft. Subordinate units include:

- **452nd Operations Group** organizes, trains, and equips aircrews to provide air refueling and strategic airlift. It includes the 336th Air Refueling Squadron, 729th Airlift Squadron, 452nd Aeromedical Evacuation Squadron, 452nd Operations Support Squadron, and 452nd Airlift Control Flight.

- **452nd Maintenance Group** provides fully trained KC-135 and C-17 aircraft maintenance personnel to the 452nd AMW. It includes the 452nd Maintenance Operations, 452nd Aircraft Maintenance, 752nd Aircraft Maintenance, and 452nd Maintenance squadrons.
- **452nd Mission Support Group** provides home station services required for a combat-ready unit-equipped air mobility wing to deploy and employ. It includes the 452nd Headquarters, 452nd Civil Engineering, 452nd Services, 452nd Security Forces, 452nd Communications, 50th Aerial Port, 56th Aerial Port Squadron, and 452nd Logistics Readiness squadrons.
- **452nd Medical Group** provides medical support and enhances AMW readiness. It includes the 452nd Medical, 752nd Medical, and 452nd Aeromedical Staging squadrons.

144th Fighter Wing, California Air National Guard

The 144th FW, based at Fresno-Yosemite International Airport, operates fighter aircraft for **NORAD's Operation NOBLE EAGLE** ready alert missions out of March ARB. Under this real-world mission, NORAD detects airborne objects approaching North America and conducts its air defense mission by tracking, identifying, and taking appropriate action, which may include scrambling fighters to intercept the approaching aircraft, and/or escorting it through the air defense identification zone in coordination with the Federal Aviation Administration (FAA).

163rd Attack Wing, California Air National Guard

In addition to the 144th FW, March ARB is home to the California Air National Guard's 163rd Attack Wing, which operates the MQ-9 Reaper. Its Remotely Piloted Aircraft (RPA) mission is to provide close air support, air interdiction, intelligence, surveillance, and reconnaissance. When federally activated, the multi-role capabilities of the 163rd and its MQ-9s provide extended time over targets to locate, track, target, strike, and assess time-sensitive targets.

March Aerial Port of Embarkation (APOE) Center:

This center conducts deployment and redeployment operations for the DoD and other federal agencies located in the Southern California area. Specifically, March ARB transports troops and materiel from the First Marine Expeditionary Force, the Marine Corps Air Ground Combat Center at Twentynine Palms, and other installations in Southern California. The APOE also supports the transportation of troops and materiel to and from the Army's National Training Center at Fort Irwin.

Television-Audio Support Activity (T-ASA)

T-ASA is a DoD activity under the Defense Media Activity located at Fort Meade, Maryland. T-ASA designs, procures, installs, and supports radio and television, visual information, media archival, storage and duplication, and combat cameral systems with commercial, off-the-shelf equipment and supplies. It also supports the Armed Forces Network Broadcast Center, the sole programming source for military radio and television outlets overseas in over 177 countries around the world.

Department of Homeland Security

The **U.S. Customs and Border Protection (CBP) Air and Marine Operations Center (AMOC)** located at March ARB is a state-of-the-art, multi-domain law enforcement and operations center. AMOC uses sophisticated technology to detect, identify, track, and direct the interdiction of suspect aviation and maritime targets in the Western Hemisphere. AMOC monitors and tracks aircraft flying in U.S. airspace by integrating data from hundreds of domestic and internal radars and optical sensors, including satellite operations centers in Puerto Rico and Washington, D.C.

The **CBP Riverside Aviation Unit** operates two-fixed wing Pilatus PC-12s and one rotary-wing Airbus AS-350 from March ARB in fulfilling its role as the nation's only federal law enforcement center tasked to coordinate interdiction operations in the Western Hemisphere.

Other Tenant Units at March

Additional tenants at March ARB include:

- Air Force Audit Agency
- 912th Air Refueling Squadron 92nd Operations Group, 92nd Wing (Fairchild AFB)
- 701st Combat Operations Squadron, 940th Operations Group, 940th Wing (Beale AFB)
- 362nd Air Force Recruiting Service
- Defense Visual Information Center
- Civil Air Patrol, Squadron 45
- 653rd Regional Support Group, U.S. Army Reserve
- 358th Civil Affairs Brigade, U.S. Army Armed Forces Reserve
- 304th Sustainment Brigade, U.S. Army Reserve
- Naval and Marine Corps Reserve Center
- Army & Air Force Exchange Service
- Defense Commissary Agency

Civilian Joint Use

A joint-use airport is defined by the USAF as one where the facilities are owned and operated by the USAF and are made available for use by civil aviation.

In addition to the military and homeland security organizations at March ARB, airport facilities are used by civilian aircraft and entities. A JUA was created on May 7, 1997, between the DoD and the March JPA to establish March Airfield as a joint-use airport permitting civil aviation operations. The joint use of March ARB was backed by the FAA in June of 1997 in which the FAA stated its support of the "joint military/civilian" use of March ARB in accordance with the terms and conditions of the JUA. Consequently, the March JUA allows for the establishment and operation of commercial and general aviation, except for civilian pilot training. March ARB provides operations and maintenance of all airfield airside facilities, except March Inland Port facilities, including air traffic control and navigational systems. Table 3.1 displays MIP operations for 2021 as counted against the JUA.

Table 3.1 March Inland Port Operational Data 2021 (Number of Flight Operations)

Category of Operations	Annual Operations
Air Carrier	3480
General Aviation	1262
Military	226
Total Operations	4968

Source: *MIPAA, 2022*

3.3 Airfield Operations

Airfield operations at March Field are counted such that one operation equals one takeoff and/or one landing. Total operations include counts for military aircraft (military sorties) and civil aircraft – including those civil air operations supporting military operations such as air refueling tankers and troop movements that are not part of MIP operations or counted against the JUA.

Military usage of the airfield remains lower now than when the base was an active Air Force Base and operations peaked at approximately 125,000 per year[2]. However, the overall variety and pace of aircraft operations are increasing at March. The level of airfield activity is up by nearly 6,000 additional annual airfield operations over previous years (24,414 total operations in 2020, and 24,675 total operations in 2018).[3] The increase in air operations is attributed to increased activity from tenant units, visiting foreign military aircraft, and increased APOE operations. For example, the Army now uses March extensively for the transport of soldiers to and from its National Training Center at Fort Irwin, California. (Civilian aircraft operation numbers above include those in support of military transportation and operations that are not subject to the JUA.)

[2] March Air Reserve Base / Inland Port Airport Land Use Compatibility Plan, 2020
[3] March ARB, 2022

March ARB continues to follow flight paths published in the 2018 AICUZ study with no changes to aircraft arrival, departure, or closed loop routes.

***Source**: March ARB Public Affairs/US Air Force, 2021.*

Airfield Environment

March ARB has two active runways on the southwest side of the installation, Runway 14/32, and Runway 12/30 shown in Figure 3-1. The airfield has an active control tower manned by March ARB air traffic control personnel. The length, width, and pavement strength of Runway 14/32 enable it to accommodate nearly any type of military or civilian aircraft. The smaller secondary runway, Runway 12/30, was once the primary runway, but its length is now reduced to just over 3,000 feet and its use is restricted to light military aircraft (helicopters and Aero Club airplanes).

Runway 14/32 is 13,302 feet in length and contains 1,000-foot overruns at both ends, while Runway 12/30 (3,061 feet in length) has 200-foot overruns at both ends. The aircraft apron and hangars are located to the east of both runways and parallel to 12/30. There are 285 acres of aircraft ramp space. Runway 14/32 is a Class B runway with a width of approximately 200 feet; Runway 12/30, a Class A runway with a width of 100 feet, is closed to the public. There is a southwest-facing blast fence at the southern end of the apron and another blast fence at the midway point of the apron facing northwest.

Figure 3-1 Airfield Environment

Air Traffic Control Tower

March Air Traffic Control (ATC) controls its airspace to 5,000 feet. In addition to the 30,120 airfield operations in 2021, there were approximately 63,420 ATC operations for aircraft transiting its airspace – up a little more than 7,000 over 2020's rate. Together airfield and other ATC operations combined for a total of 93,560 operations managed by March ARB in 2021.

Ground Operations

Owing to the size and primary use of March ARB, ground operations are fairly limited, and although an outdoor range remains, it is inactive. In 2012, the Small Arms Range was moved to an indoor facility for the 452nd AMW Security Forces Squadron's combat arms training which negated noise from outdoor weapons firing[4]. The indoor range enables shooters to qualify with all weapons, firing from all positions in both day and night fire scenarios. The 28,000-square-foot facility includes 28 range positions, a weapons cleaning room, office space, and a vault to secure weapons and ammunition. This facility also supports the 163rd Air Reconnaissance Wing; 4th Air Force; local Army, Navy and Marine Corps units; and members from Los Angeles Air Force Base.

[4] https://www.march.afrc.af.mil/News/Article-Display/Article/167685/march-field-firing-range-moves-to-other-side-of-tracks-goes-high-tech/

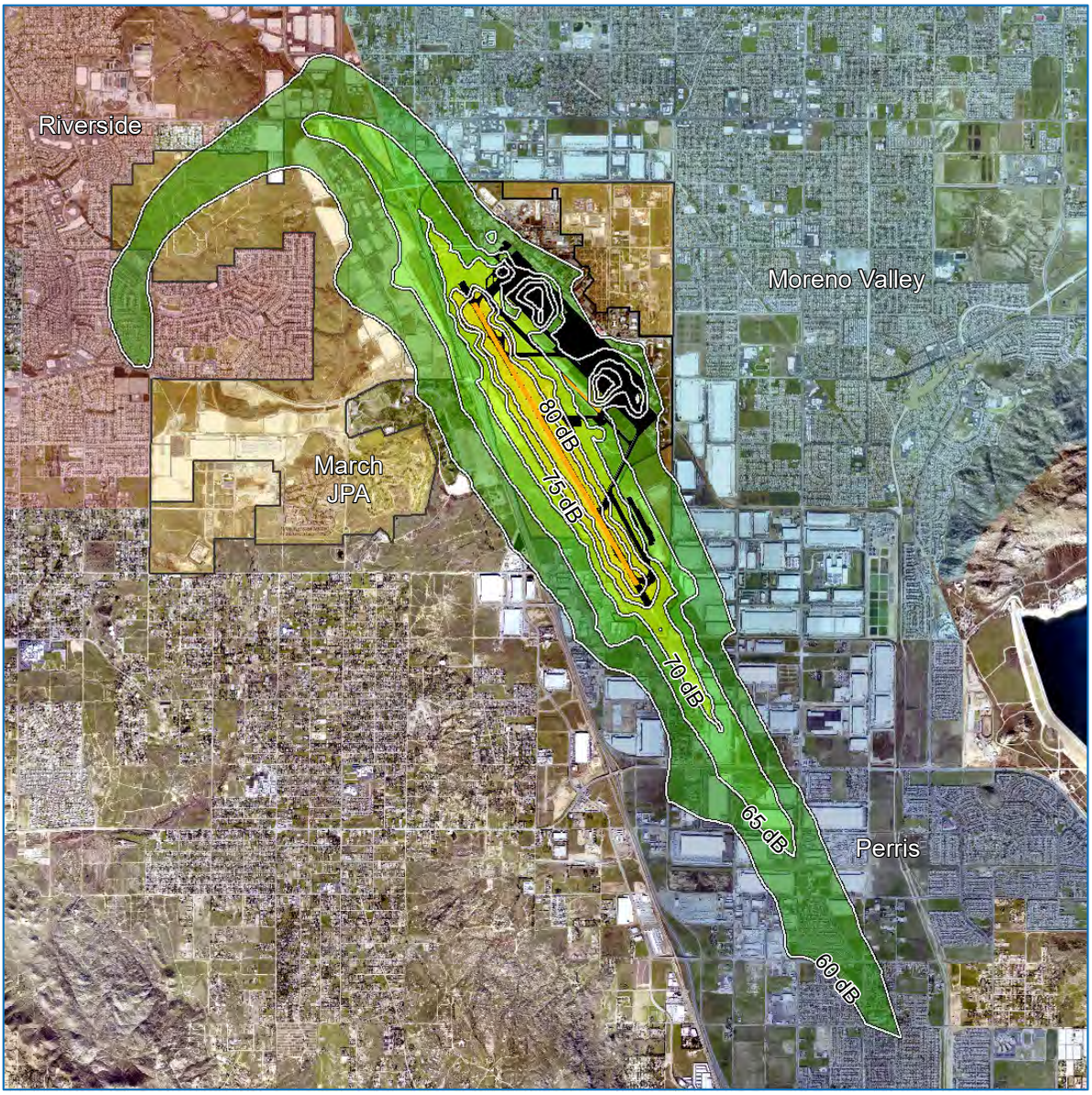
Noise

The most current published noise model (NOISEMAP) for March ARB is found in the 2018 AICUZ study. The NOISEMAP from this model reflects 51,172 air operations, including 21,000 of the maximum number of civil air operations allowed under the JUA. The NOISEMAP (Figure 3-2) combines noise modeling using DoD NOISEMAP 7.3 and the FAA Aviation Environmental Design Tool (AEDT) 2c. The number of air operations has significantly increased since the AICUZ was published. Current guidance from Air Force Instruction 32-1015 Integrated Installation Planning (AFI 32-1015) states that noise studies may be updated when there are:

- Mission changes that include aircraft types, flight operations, and flying tactics.
- Changes in Special Use Airspace or Airspace for Special Use or at ranges.
- Changes in departure/arrival flight tracks or location of Visual Flight Rules (VFR) or Instrument Flight Rules (IFR) traffic patterns.
- Changes of more than 500 feet in downwind altitudes.
- Additions or deletions of runup locations and/or suppression equipment.
- Changes in location or orientation of an unsuppressed engine run-up or trim pad.
- Changes in types of aircraft or engines run at an unsuppressed location.
- Changes in runway usage, including offset thresholds of 500 feet or more.
- Changes in the number of flight operations occurring between 10 p.m. and 7 a.m.
- Mission or flight-path changes that arise as a result of incompatible development, such as wind energy/turbine construction projects in operating areas.
- Changes in locations, operations, or types of munitions in the training of explosives and ground weapons.

March ARB maintains a Noise Abatement Program with published quiet hours that limit pattern work and engine run-ups. In addition, in 2007, a Noise Abatement Departure Profile was applied to civil air carrier departure which subsequently mitigated impacts on residential areas. March publishes notices to air missions to advise of these restrictions. Noise complaints occur infrequently.

Figure 3-2 Airfield Noise Environment



Legend

2018 CNEL Noise Contour
- 60 dB CNEL
- 65 dB CNEL
- 70 dB CNEL
- 75 dB CNEL
- 80 dB CNEL

- Runway
- Airfield Surfaces
- March Air Reserve Base
- March Joint Powers Authority

MARCH ARB COMPATIBLE USE STUDY

Source: March ARB 2020/2021

Matrix

0 ½ 1 2 Miles

Airfield Noise Environment

Future Mission Potential

In 2022, the DAF selected March ARB as the preferred location to host the next generation air tanker aircraft – the KC-46A Pegasus. The decision was based on factors related to mission, infrastructure capacity, community support, environmental considerations, and cost. If the relocation decision is finalized, 12 KC-46As will replace the venerable KC-135 Stratotankers based at March. The Pegasus offers enhanced capabilities such as boom and drogue refueling on the same sortie, worldwide navigation and communication, cargo capacity on the entire main deck floor, receiver air refueling, improved force protection, and multi-point air refueling capability. A final basing decision will be made after an Environmental Impact Analysis, including a new noise study, which is expected to take place in the fall of 2023. Grissom ARB, Indiana and Tinker Air Force Base, Oklahoma are considered reasonable alternatives and will also undergo Environmental Impact Analyses.

3.4 Economic Benefit

A 2016 Economic Impact Analysis report published by Claremont McKenna College found an annual economic impact from March ARB of $579 million on the counties of Riverside and San Bernardino. This economic impact consisted of an estimated $267 million of payroll for active military, reserve, and civilian employees on the base; $183 million for purchases of goods and services for the base; and $129 million in off-base payroll generated by the direct expenditures. Approximately 9,525 people are employed at the base, with another 3,113 jobs resulting indirectly from the expenditure of the employee payroll. The base produces at least $296 million of activity and 1,591 off-base jobs in Riverside County, with the remainder in adjacent San Bernardino County.

3.5 March ARB Community Contributions

March ARB is active throughout the community and has contributed greatly to the overall success and health of the region. The March JPA is an award-winning Base Reuse Authority that fosters public-private partnerships for the development of former March AFB properties. The March JPA is under the joint leadership of the Riverside County Board of Supervisors and the city councils of Moreno Valley, Perris, and Riverside. Together these communities have built one of the most sustainable and progressive business centers in California. Revenue from the JPA supports local communities, education facilities, and utilities.

The March Field Air Museum provides insight into the pivotal role that March Field played in the development of flight. The museum contains over 80 aircraft and more than 30,000 artifacts which help illustrate the importance of the base to aviation advancement.

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4 Planning & Compatibility Tools

This chapter provides an overview of existing programs, plans, policies, governing regulations, government agencies, and other planning tools that are used, applied, or available for evaluating and addressing compatibility issues in the project Planning Area. Several of these tools are designed either to address compatibility directly or to address it indirectly through the topics they cover. This review is meant to provide an overview of applicable planning tools and to determine how each may apply to compatibility as presented under the compatibility factors discussed in Chapter 5.

The tools presented in this chapter are organized by level of government: federal, military, state, regional, and local.

4.1. Federal Programs and Policies

Federal law authorizes federal, state, and local entities to implement regulatory measures and policies to protect the multiple resources that are involved in land use and military compatibility planning. The intent of these measures and policies is to protect the quality of life and general welfare of the public and to preserve military areas. These tools assist land use decision-makers and planners at all levels of government to make informed decisions that ensure compatible land use development between military installations and the surrounding communities.

Federal policy, laws, and programs have evolved to impact almost every aspect of land use. This is particularly true in metropolitan areas that host major military facilities such as March ARB. A broad range of federal plans, programs, and actions impact March ARB both directly and indirectly. Federal programs and policies are carried out by the various arms of the federal government, although in some cases these tools also authorize state, county, regional, or local governmental agencies to implement related policies, programs, and regulations. The following federal programs and policies were evaluated to assist with determining where areas of improvement could enable better compatibility and recommended land use planning at the local level.

The following does not attempt to provide an exhaustive accounting of every relevant federal law or program but simply attempts to capture those considered to be most relevant to the assessment of compatibility issues and to the potential strategies stakeholders might employ to avoid or mitigate conflicts. The federal plans and programs that are included in this section are:

- Air Force Community Partnership (AFCP) Program
- Air Force Installation Energy Strategic Plan 2021
- Air Force Instruction 90-2001
- Air Force Policy Directive (AFPD) 90-17
- Air Installation Compatible Use Zones (AICUZ) Program
- Building Resilient Infrastructure and Communities (BRIC)
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- DoD Defense Community Infrastructure Program (DCIP)
- DoD Directive 4170.11 Installation Energy Management
- DoD Directive 4715.21 Climate Change Adaptation and Resilience
- DoD Military Aviation and Installation Assurance Siting Clearinghouse

- DoD Operational Noise Management Program
- DoD Operational Noise Manual
- DoD Readiness and Environmental Protection Integration (REPI)
- Department of Housing and Urban Development (HUD) Noise Regulation
- Endangered Species Act
- Federal Aviation Act
- FAA Guidance on Drone Operations
- FAA Order JO 7110.65T
- FAA Policy: Review of Solar Energy System Projects on Federally-Obligated Airports
- FAA 5-G Guidance
- Federal Land Policy and Management Act of 1976
- FAA Advisory Circular 150/5200-33C - Hazardous Wildlife Attractants on or near Airports
- Intergovernmental Support Agreements
- Migratory Bird Treaty Act
- National Environmental Policy Act (NEPA)
- National Historic Preservation Act
- Noise Control Act of 1972
- Partners in Flight Program
- Safe Drinking Water Act
- Telecommunications Act of 1996 and the Federal Communications Commission
- The Sikes Act
- U.S. Avian Hazard Advisory System

Air Force Community Partnership (AFCP) Program

The AFCP Program is an initiative led by the Office of the Assistant Secretary of the Air Force for Installations, Environment and Energy (SAF/IE) to cultivate partnerships among installations and their host communities and focuses on enhancing military readiness and saving money. Other objectives include fostering installation-community relationships and promoting innovation such as Inter-Governmental Support Agreements. The Air Force currently emphasizes initiatives with greater returns on investment that can be applied across a variety of installations, such as having public entities provide municipal services (water and wastewater service, solid waste collection, etc.) to bases.

Air Force Installation Energy Strategic Plan 2021

The Air Force Installation Energy Strategic Plan 2021 supports mission assurance using a mission-centric view to improve the resilience of energy and water systems that enable DAF capabilities. To execute this approach, the Plan lays out three goals – identify enabling system vulnerabilities, improve resilience planning, and ensure resilience results – that have been selected to support the installation energy vision of Mission Assurance through Energy Assurance. Strategic objectives set the major milestones or actions required to achieve each goal. The Plan includes an overview of the DAF Facility Energy Program governance structure introduced in DAF Instruction 90-1701 (which is an updated instruction to AFPD 90-17, listed below) as well as a suite of assessment, planning, execution, and verification tools to assist the DAF in realizing these goals. The Plan enhances the ability of the DoD to further build military readiness in support of a more lethal force, and reform DoD business practices as outlined in the 2018 National Defense Strategy. By taking a mission-focused approach to mitigate potential vulnerabilities in enabling systems supporting critical infrastructure and key military capabilities, the Plan ensures DAF readiness is not impaired by unexpected disruptions. The content of this Plan will be reviewed every two years and updated as needed to keep pace with the continuously changing operational landscape.

Air Force Instruction 90-2001

Air Force Instruction 90-2001 was published in September 2014 to implement the Encroachment Management Program. The Instruction applies to all Air Force installations to address encroachment issues and prevent or reduce the impacts of encroachment. The Instruction includes an Encroachment Management Framework, which has four elements (Organize, Assess, Act, and Monitor) to address the variety of challenges. Organization requires leadership involvement, a cross-functional management structure, an issue evaluation structure, a designated Executive Director at the installation level, and a geographic scope. Assessment includes studying internal and external relationships and developing encroachment studies, such as an Installation Complex Encroachment Management Action Plan (ICEMAP). Action involves implementation of programs. Lastly, monitoring involves maintaining awareness of mission needs and encroachment issues.

Air Force Policy Directive (AFPD) 90-17

AFPD 90-17 "establishes the framework for energy management within the Air Force; the Air Force energy management program addresses the use, conservation, and security of energy and water across all Air Force missions." AFPD 90-17 requires that the Air Force be able "to power any infrastructure identified as critical to the performance of mission essential functions independent of the utility grid for the period of time needed to relocate the mission or for at least seven days, whichever is longer." As many Air Force missions can be temporarily relocated during disruptive events – e.g., by flying aircraft to other installations – this policy is flexible enough to fit energy resilience capabilities to mission requirements as appropriate.

Air Force Playbook for Foreign Investment Assessments Proximate to Military Equities

The Air Force published this document in 2023. The playbook is designed to inform and educate installation staff and surrounding local governments on protocols for obtaining critical information and identifying and addressing potential concerns related to foreign investment transactions near Air Force installations and training and testing areas. This playbook assists in the flow of information for transaction review by the Committee on Foreign Investment in the United States. This federal interagency committee is charged with the review of certain transactions involving foreign investment in the United States and certain real estate transactions by foreign persons, in order to determine the effect of such transactions on the national security of the United States.[1]

Air Installations Compatible Use Zones (AICUZ) Program

The AICUZ program was created by the DoD in 1973 to address noise and safety hazards associated with aviation operations at military airfields. Air Force Instruction 32-7063 was updated in 2015 to implement the AICUZ and the Air Force Directive 90-20, Encroachment Management. The Instruction applies to all Air Force installations with active runways. The AICUZ program provides guidelines to promote compatible or recommended land development in areas subject to operational noise and accident potential. The program was initiated to protect the public's health, safety, and welfare, as well as to protect military airfields from encroachment by incompatible or discouraged uses and structures. The AICUZ framework evaluates noise from military aircraft, applying the concept of CZs and APZs with corresponding development and building densities and intensities designed to encourage compatible or recommended uses between military operations and communities. An installation's AICUZ study provides land use tables that set land use compatibility guidelines within the CZs, APZs, and noise zones.

Building Resilient Infrastructure and Communities

Building Resilient Infrastructure and Communities (BRIC) is a Federal Emergency Management Agency (FEMA) grant. BRIC will support states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The BRIC program's guiding principles are supporting communities

[1] https://home.treasury.gov/policy-issues/international/the-committee-on-foreign-investment-in-the-united-states-cfius

through capability- and capacity-building, encouraging and enabling innovation, promoting partnerships, enabling large projects, maintaining flexibility, and providing consistency.

Clean Air Act

The Clean Air Act (CAA) is a comprehensive federal law that regulates air emissions from stationary and mobile sources to control air pollution. Under the CAA, the Environmental Protection Agency (EPA) establishes limits on six criteria pollutants through the National Ambient Air Quality Standards (NAAQS). Standards are established to protect public health and public welfare. The CAA also gives the EPA the authority to limit emissions of air pollutants originating from sources such as chemical plants, utilities, and steel mills. Individual states may have more stringent air pollution laws, but they may not have weaker pollution limits than those set by the EPA. Under the law, states must develop State Implementation Plans (SIPs) that outline how each state will control air pollution under the CAA.

Clean Water Act

The Clean Water Act (CWA) governs the management of water resources and controls and monitors water pollution in the U.S. 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.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

This legislation was designed to assist with the clean-up of sites with hazardous contaminants to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA has relevance as a potential Compatible Use Plan tool through the Superfund environmental program, established to address hazardous waste sites. Hazardous waste is sometimes present in or around military installations, particularly where munitions and ordnance are stored and used for training purposes, and if not disposed of properly could be potentially harmful to the installation tenants and surrounding communities. While the Superfund cleanup process may be complex, it protects communities and the environment from further contamination.

DoD Defense Community Infrastructure Program

In 2021, DoD awarded $4,329,268 to Western Municipal Water District, California to undertake a $12,457,527 project to build a local groundwater resiliency connection to support March Air Reserve Base.

Piloted in 2019, the Defense Community Infrastructure Program allows the DoD to provide funding to state and local governments for off-base infrastructure projects or on property under the jurisdiction of a Secretary of a military department that is subject to a real estate agreement (including a lease or easement); to support military installations. The program authorizes the department to fund projects that address deficiencies in community infrastructure if the assistance will enhance the value of the military, its resilience, or the quality of life of military families.

Eligible community infrastructure projects are any complete and useable transportation project, community support facilities (e.g., school, hospital, police, fire, emergency response, or other community support facility), and utility infrastructure projects [e.g., water, wastewater, telecommunications, electric, gas, or other utility infrastructure (with necessary cyber safeguards)] that:

- are located off a military installation
- support a military installation
- are owned by a state or local government or a not-for-profit, member-owned utility service
- will enhance military value, military installation resilience and/or military family quality of life at the supported military installation (definitions of these enhancements are provided in Section E., paragraph 1. of the Notice of Funding Opportunity)
- are endorsed by the local installation commander who represents the installation benefitting from the proposed project
- are where ground-disturbing work has not yet commenced and are construction ready

DoD Directive 4170.11 Installation Energy Management

Directive 4170.11 requires that installation energy management meet applicable goals and policies and:

- That utility infrastructure be secure, reliable, and efficient
- That utility commodities be procured effectively and efficiently
- That energy and water conservation efforts be maximized

The availability, reliability, and security of electrical, water, and fuel resources and supporting infrastructure are critical for installation resiliency and continuity in case of events driven by climate change impacts.

DoD Directive 4715.21 Climate Change Adaptation and Resilience

This directive provides DoD policy on adapting current and future military operations to address climate change impacts on mission planning and execution. Key elements of the directive are to:

- Identify and assess the effects of climate change on DoD missions
- Account for climate change effects when developing plans and procedures
- Anticipate and manage risks associated with climate change to ensure resilience

DoD Military Aviation and Installation Assurance Siting Clearinghouse

Section 358 of the 2011 National Defense Authorization Act requires the DoD to study the potential effects of proposed structures on military installations and operations. The Military Aviation and Installation Assurance Siting Clearinghouse (formerly the Energy Siting Clearinghouse) coordinates the review of energy project applications. Key elements of Section 358 include designating a senior official and lead organization to conduct the review of energy project applications, a specific timeframe for completing a hazard assessment associated with an application (30 days), and specific criteria for DoD objections to projects. Section 358 also requires the DoD to provide an annual status report to Congress. This legislation promotes the ongoing development of renewable energy sources and increased resiliency of the commercial electrical grid, while minimizing or mitigating any adverse impacts on military operations and readiness.

This legislation establishes procedural certainty and a predictable process for promoting compatibility between alternative energy development and military capability.

DoD Operational Noise Management Program

The DoD Operational Noise Management Program is the mechanism for addressing military noise-related issues associated with test and training operations consistent with maintaining military readiness and integrating military noise management principles into plans and programs for installations, operational ranges, and other training and offshore operating areas. DoD components are required to analyze and incorporate military noise considerations into environmental reviews, determinations, and decisional documents in accordance with the National Environmental Policy Act, National Historic Preservation Act, Endangered Species Act, and other applicable federal regulations and DoD guidance. This program is intended to promote encroachment prevention through community outreach and compatible land use.

DoD Operational Noise Manual

The Operational Noise Manual was prepared for the DoD by the U.S. Army Center for Health Promotion and Preventive Medicine and released in November 2005. It provides a practical guide for military and civilian personnel with duties and responsibilities in operational noise management so that they can work together to be good neighbors and mitigate noise issues. The manual assists personnel with understanding and implementing current DoD environmental policy and guidance. The majority of the manual is devoted to characteristics of sound, effects of noise, military noise sources, noise monitoring, and reduction of noise conflicts.

DoD Readiness and Environmental Protection Integration

To implement the authority provided by the Department of Defense Conservation Partnering Initiative, the DoD established the Readiness and Environmental Protection Integration (REPI) program. This initiative enables the DoD to work with state and local governments, Non-government Organizations (NGOs), and willing landowners to limit encroachment and incompatible land use. REPI funds are used to support various DoD partnerships that promote compatible and recommended land use. By relieving encroachment pressures, the military can test and train in a more effective and efficient manner. Habitats for plant and animal species are conserved and protected by preserving the land surrounding military installations. It is important for March ARB to ensure that military activities are not encroached upon by incompatible and not recommended land uses. The REPI gives local agencies an opportunity to partner with the military and other local agencies. This will allow for buffers around the base to be established to help further protect its mission.

Department of Housing and Urban Development Noise Regulation

The United States Department of Housing and Urban Development (HUD) has instituted policies through Section 24 Code of Federal Regulations (CFR) Part 51 that are designed to promote the creation of controls and standards for community noise abatement by state and local governments. The focus of these regulations is to reduce noise levels within residential developments funded by HUD. Generally, external noise exposure within Noise Zone 3 (as identified in an installation's AICUZ study) is considered unacceptable without exception, and within Noise Zone 2 exposure is normally unacceptable with respect to new construction. HUD funds may also be available to encourage noise abatement planning and acoustical treatment for proposed and existing incompatible and not recommended land uses within the AICUZ.

HUD may fund residential construction within certain noise contours, provided sound attenuation is accomplished. The added construction expense of sound attenuation, however, may make siting in these noise exposure areas financially less attractive. Since the HUD policy is discretionary, variances may also be permitted, depending on regional interpretation and local conditions. HUD also has a policy (24 CFR 51D) that prohibits funding for projects in runway CZs and APZs, unless the project is compatible and recommended with any applicable AICUZ recommendations.

Endangered Species Act

The Endangered Species Act (ESA) of 1973 established a program for the conservation of threatened and endangered plants and animals and their habitats. Under the ESA, species may be listed as either endangered or threatened.

When a species is proposed for listing as endangered or threatened under the ESA, U.S. Fish and Wildlife Service (USFWS) must consider whether there are areas of habitat believed to be essential to species conservation. Those areas may be proposed for designation as "critical habitat." A critical habitat designation does not necessarily restrict further development; it is a reminder to federal agencies that they must make a special effort to protect the important characteristics of these areas.

The ESA requires federal agencies 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."

Federal Aviation Act

The Federal Aviation Act was passed in 1958 to oversee and regulate civilian and military use of airspace. The Act requires the Secretary of Transportation to make long-range plans that include policies for the orderly development and use of navigable air space in order to serve both civilian aeronautics and national defense needs. The Act further authorized the FAA to manage airspace over the United States. The primary objectives of the FAA are to promote air safety and the efficient use of navigable airspace.

The Federal Aviation Act is largely implemented through Title 14 Code of Federal Regulation Part 77, commonly referenced as Part 77, which provides standards for determining if a proposed structure or object will create a vertical obstruction or flight hazard in navigable airspace. Local jurisdictions can use a formula provided in the regulation to assess proposed developments relative to height restrictions near airfields. The FAA uses its Obstruction Evaluation/Airport Airspace Analysis tool to make Determinations of Hazards/No Hazards for proposed structures or objects.

Part 77 defines an obstruction to air navigation as an object that meets one or more of the following conditions:

- A height of 499 feet above ground level
- A height that is 200 feet above ground level or 200 feet above the established airport elevation, whichever is higher, and within three nautical miles (NM) of the established reference point of an airport that has a runway that is at least 3,200 feet long. Heliports are excluded from these criteria. The height criterion increases by 100 feet for every additional NM from the airport, up to a maximum of 499 feet.
- A height within a terminal obstacle clearance area, including initial approach segments, departure areas, and circling approach areas, 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 clearance.
- A height within an en-route obstacle clearance area of a federal airway or approved off-airway route, including turn and termination areas, that would increase the minimum obstacle clearance altitude.
- The surface of a takeoff and landing area of an airport, or of any imaginary surface established under 14 CFR 77.19 and 14 CFR 77.21, as well as heliports (14 CFR 77.23). However, no part of the takeoff or landing area 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 apply to traverse ways used or to be used for the passage of mobile objects only after traverse way heights are increased by the following:
  - 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 a 17-foot 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.

When the FAA identifies obstructions, it may require proposed developments to be altered to avoid creating obstructions or minimize their potential impacts. Additional information on Part 77 can be found on the FAA website at http://www.faa.gov/.

Federal Aviation Administration (FAA) Guidance on Drone Operations

The FAA governs unmanned aircraft systems (UAS), commonly known as drones, in the national airspace. Drone operations for small UAS, defined as under 55 pounds, can be conducted under the Small UAS Rule (Title 14 CFR, Part 107), which requires operator certification among other UAS regulations. Recreational use of small UAS is permitted by 49 United States Code § 44809 as an exception to Part 107 provided the operator follows the eight requirements of this exception, which includes registration of UAS vehicles. This exception is sometimes referred to as the Recreational Use of Model Aircraft Rule.

FAA Small Unmanned Aircraft Systems

Title 14 CFR Part 107 specifies operating requirements for all UAS under a weight of 55 pounds. This includes manually operating the UAS, maintaining a visual line-of-sight and getting approval from the relevant air traffic control tower before operating in Class B, C, D, and E airspace using the Low Altitude Authorization and Notification Capability (LAANC) desktop or mobile app. It also sets operational limitations, including a weight limit of 55 pounds, a speed limit of 100 miles per hour, a height limit of 400 feet, and daylight operations only. UAS operators are required to pass a remote pilot certification exam and UAS must be registered with the FAA. Certified UAS operators can request waivers to operational requirements including altitude, special use airspace, and flying at night. Exceptions to this rule under the Recreational Use of Model Aircraft Rule require registration of small UAS with the FAA, marking the aircraft with a registration number, and carrying the registration on the operator's person while operating the UAS.

FAA UAS Registry

All UAS operating in the national airspace are required to be registered with the FAA at its Drone Zone website. The only exception is for model aircraft with weights under 0.55 pounds. The Drone Zone website is https://faadronezone.faa.gov/#/.

The FAA may take enforcement action against anyone who conducts an unauthorized UAS operation or operates a UAS in a way that endangers the safety of the national airspace system. The types of FAA enforcement tools include warning notices, letters of correction, and civil penalties.

FAA Guidance to Law Enforcement

The FAA asks local law enforcement agencies (LEAs) to document and provide the following information to the FAA:

- Identity of operators and witnesses (name, contact information)
- Type of operation (hobby, commercial, public/governmental)
- Type of device(s) and registration information (number/certificate)
- Event location and incident details (date, time, place)
- Evidence collection (photos, video, device confiscation)

Additionally, the FAA recommends law enforcement always follow agency policies and take appropriate action based on the facts and circumstances of the incident and site/area-specific laws and rules. FAA enforcement action does not impact any enforcement action(s) taken by LEAs.

Local ordinances that may apply include, but are not limited to, reckless endangerment, criminal mischief, voyeurism, and inciting violence.

FAA Order JO 7110.65T

The FAA Order JO 7110.65T became effective in February 2010 and set the provisions for safe fuel jettisoning or dumping for aircraft. This order established rules for pilots operating in IFR and VFR conditions to dump fuel in certain situations such as emergencies. This order delineates the means by which fuel dumping can safely occur. This is in response to ensuring the general welfare of the public and the structural integrity of the aircraft during landing operations.

FAA Policy: Review of Solar Energy System Projects on Federally-Obligated Airports

This document establishes FAA policy for proposals by sponsors of federally-obligated airports to construct solar energy systems on airport property. FAA is publishing this policy because it is in the public interest to enhance safety by analyzing the ocular impact of proposed solar energy systems on federally-obligated airport traffic control tower personnel.

FAA 5G Guidance

Radio altimeter interference from 5G, specifically C-Band, communications infrastructure is a documented aviation safety risk. Transmissions from 5G communication towers in the vicinity of airports can interfere with the proper operation of radio altimeters. This interference presents a particular safety risk to aircraft crew and passengers, as several aircraft control systems are reliant on properly functioning radio altimeters. Boeing 737, 757, and 767 series aircraft are particularly impacted (see below). The FAA is actively working with both the aviation industry and communications industry to mitigate this risk by retrofitting aircraft with improved radio altimeters that filter out 5G spectrum interference and limiting full 5G infrastructure implementation near priority airports until this risk can be fully mitigated. The FAA has issued a Notice to Air Missions (NOTAM) to advise pilots to use alternative methods of compliance around certain airports for any aircraft not cleared for operation in 5G environments.

The FAA has issued Airworthiness Directives (AD) for airplanes equipped with a certain flight control system. This AD was prompted by a determination that radio altimeters cannot be relied upon to perform their intended function if they experience interference from wireless broadband operations in the 3.7-3.98 GHz frequency band (5G C-Band). This directive determined that, during the approach, landings, and go-arounds, as a result of this interference, certain airplane systems may not properly function, resulting in increased flight crew workload while on approach with the flight director, auto throttle, or autopilot engaged, which could result in the reduced ability of a flight crew to maintain safe flight and landing of the airplane. This AD requires revising the limitations and operating procedures sections of the existing

airplane flight manual (AFM) to incorporate specific operating procedures for instrument landing system (ILS) approaches, speed brake deployment, go-arounds, and missed approaches, when in the presence of 5G C-Band interference.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management 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.

FAA Advisory Circular 150/5200-33C - Hazardous Wildlife Attractants on or near Airports

This Advisory Circular (AC) provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants.

The FAA recommends the guidance in this AC for land uses that have the potential to attract hazardous wildlife on or near public-use airports. This AC does not constitute a regulation, is not mandatory, and is not legally binding in its own right. It will not be relied upon as a separate basis by the FAA for affirmative enforcement action or other administrative penalties. Conformity with this AC is voluntary, and nonconformity will not affect rights and obligations under existing statutes and regulations, except as follows:

- Airports that hold Airport Operating Certificates issued under Title 14, CFR, Part 139, Certification of Airports, Subpart D, may use the standards, practices, and recommendations contained in this AC as one, but not the only, acceptable means of compliance with the wildlife hazard management requirements of Part 139.
- The FAA recommends the guidance in this AC for airports that receive funding under Federal grant assistance programs, including the Airport Improvement Program. See Grant Assurance #34.

Intergovernmental Support Agreements

Intergovernmental Support Agreements (IGSAs) are formal public-public partnerships between the military and state or local governments. The purpose of IGSAs is to provide, receive, or share installation support services. They can create efficiencies for the military to enhance mission readiness and are an effective partnering strategy. The IGSA statute (10 U.S.C. § 2679) authorizes such agreements based on a determination that the agreement will serve the best interests of the department by creating efficiencies or economies of scale, including by reducing costs or by enhancing mission effectiveness. The law also states that IGSAs are not subject to other provisions of law governing the award of federal government contracts for goods and services. In addition, IGSAs may be entered into on a sole source basis with a state or local government and may use wage rates normally paid by that state or local government.

At the same time, there are limitations on the use of IGSAs. Specifically, any installation services obtained through an IGSA must already be provided by the state or local government for its own use, and any contract awarded by the federal government or by a state or local government pursuant to an IGSA must be awarded competitively. In addition, IGSAs cannot be used to circumvent the requirements of Office of Management and Budget Circular A-76, which governs competitions to determine whether commercial activities should be performed by government employees or by private contractors. Finally, IGSAs are statutorily limited to a term of no more than 10 years, but the statute does not preclude their renewal after the initial agreement period ends.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 U.S.C. 703-712) was established in 1918 with Canada, Mexico, Japan, and Russia to protect migratory bird species. This Act prohibits the killing, capturing, and transporting of protected migratory bird species without Department of Interior, or other signatory entity, authorization. Many birds common to Southern California are protected under this Act, including ducks, geese, and gulls. The presence of protected migratory birds within air operational areas could delay or otherwise impact military operations.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) is a federal regulation enacted in 1970 that establishes policies for environmental protection and enhancement. It requires federal agencies to identify and consider the potential impacts of their actions on the environment, as well as on scientific and cultural resources. The purpose of NEPA is to promote informed decision-making by federal agencies by ensuring that detailed information concerning significant environmental impacts is available to both agency leaders and the public.

All federal agencies, including the military, and all federally funded projects must be compliant with NEPA. Federal actions that will result in changes to the environment require the completion of a full Environmental Impact Statement (EIS). Actions that are considered unlikely to cause a significant impact can meet NEPA obligations through an Environmental Assessment (EA). An EIS is a report that describes and assesses the potential environmental effects of a particular action or project in which the federal government is involved. An EIS outlines, in detail, the proposed action, alternative actions, and their probable environmental ramifications.

NEPA compliance is a public process that encourages participation by the community and all stakeholders. Public hearings are required for EIS-level documents. EA documents must be published for a minimum 30-day public comment period, and EIS documents must be published for a minimum 45-day public comment period. Assessments can result in either a Finding of No Significant Impact (FONSI) or a Record of Decision (ROD). The latter records a determination that a project will have a significant impact. 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. These NEPA documents can serve as valuable planning tools for local planning officials and specifically for compatibility planning in defense communities.

National Historic Preservation Act

Compatibility issues and associated mitigation strategies have been developed based on the National Historic Preservation Act (NHPA) of 1966, which requires federal agencies and the military to consider the impacts of a proposed action on cultural resources that are listed or eligible for listing on the National Register of Historic Places (NRHP) to mitigate any negative effects. It is typically easiest to avoid the immediate area in which historic properties are found, limiting the amount of land that is available for development but in negligible ways. Because the presence of historic properties may constrain or require modifications to development plans, cultural resources and any needed compliance actions should be identified early in the planning process.

Noise Control Act of 1972

The Noise Control Act of 1972 concluded 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. In 1973, military installations were experiencing the impacts of encroaching urban development located adjacent to the installation and the resulting complaints regarding noise from military flight operations. 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 communities work together to mitigate the issue of noise and develop ways to coexist compatibly.

Partners in Flight Program

The DoD has implemented a program entitled Partners in Flight that sustains and enhances the military testing, training, and safety mission through habitat-based management strategies. The program assists natural resource managers with monitoring, inventory, research, and management of birds and their habitats. As part of the Partners in Flight program, a strategic plan is created that can be incorporated into a Bird/Wildlife Aircraft Strike Hazard (BASH) plan. This program reaches beyond the boundaries of the installation to facilitate community partnerships and determine the status of bird populations to prevent the further endangerment of birds.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of drinking water in the United States. The SDWA authorizes the EPA to set national health-based drinking water standards to protect against both naturally occurring and man-made water contaminants. The SDWA applies to every public water system in the U.S.

Telecommunications Act of 1996 and the Federal Communications Commission

The Telecommunications Act of 1996 was the first comprehensive update to a federal telecommunications law in over 60 years and was in large part intended to open the marketplace to greater competition. The increasing use and development of personal mobile phones, satellite transmission, high-speed fiber optics, and related technologies continually create demand for new telecommunications technology and infrastructure.

New telecommunication tower siting requires compliance with the Federal Communications Commission's (FCC) environmental standards and procedures (including NEPA and ESA compliance), National Historic Preservation Act compliance, adherence to applicable FAA requirements, and structure registration with the FCC. The actual approval of telecommunication improvements is subject to state and local permitting and review; however, state and local authority is limited by federal law. For instance, states and local jurisdictions cannot base their decisions on any purported environmental effects of radio frequency transmissions.

The Sikes Act

The Sikes Act requires the DoD to develop and implement Integrated Natural Resources Management Plans (INRMPs) for military installations. The INRMPs are prepared in cooperation with the USFWS and state fish and wildlife agencies to ensure proper consideration of fish, wildlife, and habitat needs. The Sikes Act requires INRMPs to be reviewed at least every five years by the military and the states. Air Force Instruction 32-7064, Integrated Natural Resources Management, guides the Air Force implementation of the Sikes Act.

U.S. Avian Hazard Advisory System

The U.S. Avian Hazard Advisory System (USAHAS) is a geographic information system (GIS)-based bird avoidance model developed by the USAF and used for "analysis and correlation of bird habitat, migration, and breeding characteristics, combined with key environmental and manmade geospatial data." The model provides up-to-date information – "near real-time" – about bird activity and movements to assist pilots and flight planners with 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/.

4.2. State of California Legislation and Programs

Plans and programs that originate at the state level provide further assistance with development planning and the protection of lands in the State of California. The tools authorize or mandate local counties and cities to provide for the protection of the state's valuable industries, including the military. In addition, the state's tools require communities and developers to protect and preserve the state's natural resources, including land and water, through regulatory measures that are intended to provide a sustainable water supply.

California has a history of collaboration with the military; at times, compatibility requires legislation to ensure notification, awareness, and review that are inherent in the development process. Compatible growth is related to military training and balanced growth. This section summarizes the legislation and programs that support that collaboration, including legislation that ensures notification, awareness, and review processes that are integral to compatible development.

California Business and Professions Code, Section 115.6

Section 115.6 of the California Business and Professions Code relates to the licensure of veterans and military spouses. After January 1, 2023, the requirements to issue temporary licenses to practice a profession or vocation for a temporary license would be expanded to include licenses issued by any board within the Department of Consumer Affairs.

Government Code, Section 65040.2

California Government Code 65040.2 requires the State Office of Planning and Research (OPR) to provide guidance on incorporating military installation compatibility into a general plan and on 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, it considers 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 another territory adjacent to those military facilities, or underlying designated military aviation routes and airspace.
- In the open-space element, it defines open-space land to include areas adjacent to military installations, military training routes (MTR), and restricted airspace.
- In the circulation element, it includes the general location and extent of existing and proposed military airports and ports.

Assembly Bill 2776 (2002)

The Aviation Noise Disclosure legislation (AB 2776, Chapter 496, Statutes of 2002) amended 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 airport proximity if a house 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.

State Aeronautics Act

The State Aeronautics Act (Public Utilities Code, Section 21001) requires the preparation of a Land Use Compatibility Plan (LUCP) for nearly all public-use airports and military airfields in the state. It requires an ALUC to formulate a LUCP for military airfields with the same requirements as public-use airports, consistent with the safety and noise standards found in the AICUZ study. The intent of a LUCP is to encourage compatibility between airports and the various communities that surround them.

Sustainable Groundwater Management Act (SGMA)

The Sustainable Groundwater Management Act of 2014 (SGMA) legislation provides a framework for long-term sustainable groundwater management across California. Under the roadmap laid out by the legislation, local and regional authorities in high and medium priority basins have formed Groundwater Sustainability Agencies (GSAs) that oversee the preparation and implementation of a local Groundwater Sustainability Plan (GSP).

The California Department of Water Resources (CDWR) has developed regulations governing the content of GSPs, which local stakeholders are required to have. GSAs will have until 2040 to achieve groundwater sustainability.

The Sustainable Groundwater Planning (SGWP) Grant Program provides funds for projects that develop and implement projects consistent with groundwater planning requirements outlined in Division 6 of the California Water Code.

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 pesticides, waste reduction, and recycling. The Cal/EPA has several financial assistance programs for both public and private entities to assist with 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. Cal/EPA provides 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 that threatens 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 Grant Program, a partnership among states, tribes, and the U.S. EPA to share environmental information. The information is organized by medium:

- Air
- Facilities
- Hazardous materials
- Water

California Advisory Handbook for Community and Military Compatibility Planning

The requirement for a compatibility handbook was established in Government Code §65040.9, which directed the Governor's OPR 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…."

The handbook was updated in 2016 and designed to serve as a resource to help develop processes and plans that would sustain local economies, safeguard military readiness, and protect the health and safety of residents living near military bases. The handbook is a useful tool for developing a Compatible Use Study (CUS), as it describes in detail the different compatibility issues that should be explored and the types of compatibility tools available to address the identified issues. The handbook can be found at: http://www.opr.ca.gov/docs/2016_CA_Handbook_Final.pdf.

California Military Land Use Compatibility Analyst

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

The Airport Land Use Planning Handbook, Caltrans

Prepared by the California Department of Transportation (Caltrans) Division of Aeronautics in 2011, the Airport Land Use Planning Handbook supports the implementation of the State Aeronautics Act (California Public Utilities Code, Section 21670 et seq.), which established statewide requirements for the conduct of airport land use compatibility planning. The Handbook can be found at:
www.dot.ca.gov/hq/planning/aeronaut/documents/alucp/AirportLandUsePlanningHandbook.pdf.

California Clean Air Act

In 1988, the State of California adopted the California Clean Air Act (CCAA) which furthers the mission of the Federal CAA. The CCAA establishes the authority for air pollution control districts or air quality management districts to implement the necessary measures to maintain and/or restore air quality to the state air quality standards for air pollutants. In addition, the CCAA establishes requirements for district plans or measures to ensure that they will achieve the state standards for air pollutants. For example, the CCAA requires either that district plans or measures achieve an annual five percent emission reduction, or the measures and plans must include all feasible measures that could achieve such reduction, which must be implemented on an expeditious schedule.

Per the CCAA, district plans must include the following statement regarding areas that are in serious nonattainment:

> No net increase in emissions from new and modified stationary sources; and best available retrofit technology for existing sources.

The CCAA directly applies to the March ARB CUS area because the area is in nonattainment for ozone and particulate matter 2.5 (PM2.5). For more information about the air quality, see Section 5.3. Air Quality.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) was enacted in 1970 to protect the environment by requiring public agencies to analyze and disclose the potential environmental impacts of proposed land use decisions. CEQA is modeled after the federal NEPA, so fulfilling NEPA compliance obligations will also fulfill CEQA compliance obligations. For example, all of these laws are nested: fulfillment of cultural resources clearance under NEPA can be achieved through compliance actions for Section 106 of the NHPA. Fulfilling compliance obligations under NHPA will fulfill compliance obligations under state historic preservation laws.

The purpose of CEQA is to inform agency decision-makers and the public about the potential environmental effects of proposed activities. Using this information, decision-makers can identify ways that environmental impacts can be avoided or significantly reduced.

California Public Resource, Code Environmental Quality (CEQA statute_ § 21098 LOW-LEVEL FLIGHT PATH; MILITARY IMPACT ZONE; SPECIAL USE AIRSPACE) mandates CEQA lead agencies notify military installations when a project meets certain criteria. The purpose is to ensure the military is aware of proposed projects that could potentially impact military operations. This statute provides military agencies with early notice of proposed projects within two miles of installations, low-level flight paths, and special use airspace. Military installations must provide local planning agencies with relevant information such as land use needs and boundary lines for critical operations and impact areas, as well as a viable point of contact. Local lead agencies must, in turn, give notice to military installations of proposed projects within those boundaries, if: (1) a project includes a general plan amendment, (2) a project is of statewide, regional, or area-wide significance, or (3) a project must be referred to the ALUC or similarly designated body. The CEQA provision allows military installations early input on local projects so that potential conflicts can be identified, evaluated, and addressed proactively.

Porter-Cologne Water Quality Act

Under this Act, last amended in January 2022, the State Water Resources Control Board and the nine Regional Water Quality Control Boards (RWQCB) have broad authority to perform water quality regulatory oversight to preserve and enhance all beneficial uses of the state's water.

4.3. Regional Compatibility Tools

County Of Riverside Multi-Jurisdictional Local Hazard Mitigation Plan

The purpose of the County of Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan is to identify the County's hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, and set goals to mitigate potential risks to reduce or eliminate long-term risk to people and property from natural and man-made hazards.

The plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 to achieve eligibility and potentially secure funding through FEMA Flood Mitigation Assistance, Pre-Disaster Mitigation, and Hazard Mitigation Grant Programs. Riverside County's continual efforts to maintain a disaster-mitigation strategy are ongoing. The goal is to develop and maintain an all-inclusive plan to include all jurisdictions, special districts, businesses, and community organizations and to promote consistency, continuity, and unification.

The County's planning process followed a methodology presented by FEMA and Cal-OES which included conducting meetings with the Operational Area Planning Committee (OAPC) coordinated by Riverside County Emergency Management Department comprised of participating Federal, State, and local agencies, special districts, school districts, non-profit communities, universities, businesses, tribal leaders, healthcare facilities, and the general public. The plan identifies vulnerabilities, provides recommendations for prioritized mitigation actions, evaluates resources, identifies mitigation shortcomings, and provides future mitigation planning and maintenance of the existing plan.

Riverside County Airport Land Use Commission

The main goal of the ALUC is to protect the 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 extensive noise and safety hazards within areas around them. Requirements for the creation of ALUCs are established under the California State Aeronautics Act (Public Utilities Code Section 21670). The ALUC reviews land use compatibility issues for development surrounding airports including safety, noise, overflight, and airspace protection. These issues are identified and analyzed in the Airport Land Use Compatibility Plans for each airport, and implementation of these plans promotes compatible development around the airports. The ALUC is comprised of seven Commissioners: two selected by the County Board of Supervisors, two selected by the cities in Riverside County, two selected by the airport managers, and one selected by the other six.

The fundamental relationship between the Riverside County ALUC and the governments of Riverside County and affected cities in the county is set by the State Aeronautics Act. The ALUC is not simply an advisory body for the Riverside County Board of Supervisors or city councils in the manner that their respective planning commissions are. Rather, it is more equivalent to a Local Agency Formation Commission (LAFCo). Within the bounds defined by state law, the decisions of the ALUC are final and are independent of a board of supervisors or city councils. The ALUC does not need county or city approval in order to adopt the compatibility plan or to carry out ALUC land use project review responsibilities.

Another aspect of the relationship between the ALUC and county and city governments concerns the implementation of the compatibility plan. As noted earlier, although the ALUC has the sole authority to adopt this plan and conduct compatibility reviews, the authority and responsibility for implementing the compatibility policies rests with the local governments, after a jurisdiction's General Plan has been reviewed by ALUC and determined to be consistent with the Compatibility Plan.

Riverside County Habitat Conservation Agency

The Riverside County Habitat Conservation Agency (RCHCA) is a JPA comprised of the County of Riverside and the cities of Corona, Hemet, Lake Elsinore, Menifee, Moreno Valley, Murrieta, Perris, Riverside, Temecula, and Wildomar. The RCHCA has managed conserved lands within Southern California and specifically Western Riverside County since 1996. The RCHCA's staff has over 35 years of combined experience working within Southern California's ecological communities, and regularly carries out biological studies, surveys and assessments of natural resources. The RCHCA's mission is to effectively manage conserved and open space lands in Riverside County, and it understands the importance of preserving the plants, animals, and natural communities. The vision of "Conservation, Coordination, Education and Collaboration" creates a sense of public appreciation for the environment.

Riverside County Opportunity Zones

Opportunity Zones are select census tracts in which businesses, equipment, and real property can seek equity-based capital from investors who will receive federal tax benefits for investments made by December 31, 2026. Opportunity Zones allow investors to receive federal tax incentives (temporary deferral, step-up in basis, and permanent exclusion) by investing their short- or long-term capital gains into select communities. These investments are intended to be patient capital, with the maximum benefits received after a 10-year period.

Opportunity Zones were added to the IRS tax code by the 2017 Tax Cuts and Jobs Act, bipartisan legislation designed to spur economic development and job creation in distressed communities throughout the country. Riverside County has 49 Opportunity Zones, the third highest in California.

Southern California Association of Governments

Founded in 1965, the SCAG is a JPA under California state law, established as an association of local governments and agencies that voluntarily convene as a forum to address regional issues. Under federal law, SCAG is designated as a Metropolitan Planning Organization (MPO) and under state law as a Regional Transportation Planning Agency and a Council of Governments.

The SCAG region encompasses six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 191 cities in an area covering more than 38,000 square miles. The agency develops long-range regional transportation plans including sustainable communities strategy and growth forecast components, regional transportation improvement programs, regional needs allocations, and a portion of the South Coast Air Quality management plans. In 1992, SCAG expanded its governing body, the Executive Committee, to a 70-member Regional Council to help accommodate new responsibilities mandated by the federal and state governments, as well as to provide a more broad-based representation of Southern California's cities and counties. With its expanded membership structure, SCAG created regional districts to provide for more diverse representation. The districts were formed with the intent to serve equal populations and communities of interest. Currently, the Regional Council consists of 86 members.

In addition to the six counties and 191 cities that make up SCAG's region, there are six County Transportation Commissions that hold the primary responsibility for programming and implementing transportation projects, programs, and services in their respective counties. SCAG bylaws also provide for the representation of Native American tribes and Air Districts in the region on the Regional Council and Policy Committees.

Western Riverside Council of Governments

The purpose of the WRCOG is to unify Western Riverside County so that it can speak with a collective voice on important issues that affect its members. Representatives from 18 cities, the Riverside County Board of Supervisors, and the Eastern and Western Municipal Water Districts have seats on the WRCOG Executive Committee, the group that sets policy for the organization, and the Riverside County Superintendent of Schools is an ex-officio member.

Recognizing that many issues related to growth are not constrained by political boundaries, WRCOG focuses on a number of regional matters important to our future. WRCOG is cost-effective because it works together through its committee structure and utilizes resources to reduce duplication of effort and enhance sharing of information, enabling strong advocacy and strengthening Western Riverside's standing in the region and the state. In all its efforts, WRCOG strives to "respect local control, provide regional perspective, and make a difference" to elevate the quality of life throughout the subregion.

Western Riverside County Climate Action Plan

The WRCOG subregion is a diverse area, exhibiting a variety of socioeconomic conditions, infrastructure types, neighborhood compositions, geographies, and character. Nearly two million people live, work, and recreate in Western Riverside County. For the subregion to flourish, it is important to understand how the climate could change and begin implementing strategies that help the subregion thrive in a variety of future climate conditions. To achieve this objective, the Adaptation and Resiliency Strategy provides a brief overview of expected climate change effects, assets in the subregion that are vulnerable to climate change effects, and adaptation strategies intended to reduce vulnerability and increase resilience. The strategies in this document represent actions that increase resilience to natural hazards regardless of the rate and severity of climate change. The Adaptation and Resiliency Strategy concludes with sample work plans to enable local government implementation.

4.4. March ARB Compatibility Tools

Plans and programs that are specific to the March ARB provide guidance for land uses and development activities on and adjacent to the Installations. These tools govern land use decisions that occur inside the fence line or within the boundary of the military mission footprints, as defined by the military missions.

These tools also provide guidance and establish measures for standard operating procedures during certain events, such as bird air strike hazard conditions, and/or establish the parameters for conducting missions within the boundaries of the military complex. There are various installation tools that are instrumental in assisting and guiding land use decisions in regard to base operations.

AICUZ Study

AICUZ studies are required by DoD policy for all military air installations in the United States and are periodically updated based on a variety of factors which may include the introduction of new aircraft, operational changes, or new flight tracks, expansion of airfield infrastructure, or significant development in the vicinity of an air installation. The Air Force's stated purpose of the AICUZ program is to manage mission encroachment while influencing mission sustainability by promoting compatible land use in the community.

The 2018 March ARB AICUZ Study updated the 2005 study. This update was initiated because of the bed down of new aircraft, operational changes, and the introduction of new flight tracks. It is a reevaluation of aircraft noise and accident potential related to Air Force flying operations and is designed to aid with the development of local planning mechanisms which will protect public safety and health, as well as preserve the operational capabilities of March ARB. The AICUZ study contains a summary description of the affected area around the base. It outlines the location of runway CZs, aircraft APZs, and noise contours modeled of the numbers and types of annual aircraft operations (including both civil and military operations) and provides recommendations for development compatible with military flight operations.

As part of the AICUZ program, air installations are required by Air Force Instruction 32-1015 Integrated Installation Planning (AFI 32-1015) to acquire real property within designated runway CZs – the base civil engineer "in cooperation with the Real Property Office, shall identify private lands within the CZ, determine the real property interest to be acquired, and fund the acquisitions through programming avenues."

Integrated Cultural Resources Management Plan

DoD Instruction (DoDI) 4715.3 and AFI 32-7065 require installations to develop an Integrated Cultural Resources Management Plan (ICRMP) as an internal compliance and management tool integrating the entirety of the cultural resources program with ongoing mission activities. As a component of the installation master plan, the ICRMP is the base commander's decision document for conducting cultural resources management actions and specific compliance procedures. It also allows for ready identification of potential conflicts between the USAF mission and cultural resources and identifies compliance actions necessary to maintain the availability of mission-essential properties and acreage.

Installation Development Plan

Installation development plans (IDP) for the Air Force are real property master development plans, which are required for all Air Force bases and satellite operating locations and are intended to guide base development across the long term. One required component of the IDP is an alignment with ICEMAPs. Additional AFI 32-105 guidance states "the Installation Development Plan shall also include an executive summary document that is publicly accessible to outside the fence partners."

Integrated Natural Resources Management Plan

The March ARB Integrated Natural Resources Management Plan (INRMP) was created to ensure that long-range habitat protection and natural resource management occurs at the installation and supports mission readiness. The INRMP outlines various natural resources including, when applicable, threatened and endangered species and important habitat, management of noxious weeds, grasslands and wildland fires, wildlife and riparian management, water resources and water rights, inter-agency responsibilities and coordination efforts, and the overall management plan for natural resources at March to ensure no loss of capability for training exercises. The INRMP serves as a planning tool for future activities at March and as a road map for the stewardship of natural resources found on the base.

March Bird/Wildlife Aircraft Strike Hazard (BASH) Plan 91-212

The current March ARB BASH Plan, effective September 22, 2017, provides guidance for reducing wildlife strike hazards where flying operations are conducted and includes:

- Establishment of a Wildlife Hazard Working Group (WHWG).
- Procedures for reporting hazardous bird activity and altering or discontinuing flying operations.
- Provisions to disseminate information to all assigned and transient aircrews for specific bird hazards and procedures for avoidance.
- Procedures to eliminate or reduce environmental conditions that attract birds and other wildlife to the airfield.
- Procedures to disperse and remove wildlife from the airfield.

March Joint Land Use Study (JLUS) 2010

This study was prepared under contract with the March JPA with financial support from the Office of Economic Adjustment, Department of Defense and completed in December 2010. Much of the material presented is drawn from the January 2002 edition of the California Airport Land Use Planning Handbook The preparation of the JLUS was broadly intended to assist March ARB and the nearby communities with efforts to mitigate and avoid land use compatibility conflicts. A compatibility map and basic compatibility criteria were included to serve as a basis for the development of a Compatibility Plan for the March Air Reserve Base Airport Influence Area, which was adopted in 2014.

Severe Weather and Climate Hazard Screening and Risk Assessment

The Air Force Civil Engineer Center (AFCEC) published the Severe Weather/Climate Hazard Screening and Risk Assessment Playbook (Severe Weather Playbook) (AFCEC, 2020), which provides a framework for installation professionals to address the requirements outlined in Installation Master Planning (UFC 2-100-01, 2020) and other USAF and DoD guidance, that severe weather and climate risk be considered in installation planning and projects. The Severe Weather Playbook outlines a three-phase Severe Weather/Climate Hazard Screening and Risk Assessment process, as follows:

- Phase 1 – Screen Hazards. Screen each potential hazard to identify the ones that could impact an installation currently or in the future.
- Phase 2 – Assess Risk. Assign probability, severity, and risk ratings for applicable current and future hazards.
- Phase 3 – Determine Next Steps. Define next steps needed to address and mitigate the potential impacts of applicable current and future hazards.

The study determined that the most significant severe weather and climate hazards for March ARB are extreme heat and seismicity. Non-storm-surge flooding, high winds, tornados, drought, precipitation changes, annual average temperature increases, and disease vectors pose a medium risk to the installation, and some of these hazard risks may change over time due to climate change. The study indicated that facilities sustainment, restoration, modernization, and military construction projects should be reviewed for relevance to severe weather and climate risks. Mitigation measures that address or lessen the effects of severe weather and climate risks should be considered and incorporated into plans for the development of projects and the sustainment, restoration, or modernization of facilities on the installation.

4.5. CUS Partnership Community Plans & Regulations

This section provides an overview of existing governing regulations, programs, plans, and tools that are available or currently being utilized to evaluate and address compatibility issues for March ARB and the surrounding community.

Regional Tools and Regulations

March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan

The basic function of ALUCPs is to promote compatibility between airports and the land uses that surround them. Compatibility plans serve as a tool for use by airport land use commissions to fulfill their duty to review proposed development plans for airports and surrounding land uses. Additionally, compatibility plans set compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and ordinances and to landowners (including special district and other local government entities as well as private parties) in their design of new development.

As adopted by the Riverside County ALUC, the Riverside County ALUCP Policy Document establishes policies applicable to land use compatibility planning in the vicinity of airports throughout Riverside County, in this case, March ARB. Included in the document are compatibility criteria and maps for the influence areas of individual airports. Also spelled out in the plan are the procedural requirements associated with the compatibility review of development proposals.

This plan replaces compatibility plans for individual airports adopted by the ALUC at various times from 1974 through 1998. The adoption of the March ARB/IP ALUCP in 2014 superseded the previously adopted mapped delineations of the Airport Influence Area that had established boundaries for Areas I, II, and III in accordance with the Riverside County Airport Land Use Plan, as adopted in the 1980s. Jurisdictions affected include:

- City of Moreno Valley
- City of Perris
- City of Riverside
- County of Riverside
- March Joint Powers Authority
- City of Menifee

This fundamental objective notwithstanding, airport land use commissions are limited in their powers to achieve it. Two limitations are explicitly written into the law: ALUCs have no authority over either existing land uses or the operation of airports.

A third, less absolute, limitation concerns the types of land use actions that are subject to ALUC review. The law emphasizes local general plans as the primary mechanism for implementing the compatibility policies set forth in an ALUC's plan. Thus, Riverside County and each city affected by an ALUCP are required to make their general plans consistent with the ALUC plan (or to overrule the commission). Once a local agency has taken this action to the satisfaction of the ALUC, ALUC's authority to review projects within that agency's jurisdiction is narrowly limited..

The only actions for which ALUC review remains mandatory are proposed adoption or amendment of general plans, specific plans, zoning ordinances, and building regulations affecting land within an airport influence area. For an ALUC to review other individual projects, the local agency must agree to submit them.

One final limitation worth noting is that ALUCs have no jurisdiction over federal lands, such as lands controlled by the U.S. Forest Service, Bureau of Land Management, or Indian tribes. ALUCs can merely inform these agencies about the ALUC policies and seek their cooperation.

ALUCPs are distinct from airport master plans in function and content. In simple terms, the issues addressed by airport master plans are primarily on-airport whereas those of concern in a compatibility plan are mostly off-airport. The purpose of airport master plans is to assess the demand for airport facilities and to guide the development necessary to meet those demands. An airport master plan is prepared for and adopted by the agency that owns or operates the airport. In contrast, the major purpose of a compatibility plan is to ensure that incompatible development does not occur on lands surrounding the airports. The responsibility for preparation and adoption of compatibility plans lies with each county's ALUC.

This distinction notwithstanding, the relationship between the two types of plans is close. Specifically, Public Utilities Code Section 21675(a) requires that ALUC plans be based upon a long-range airport master plan adopted by the airport owner/proprietor. If such a plan does not exist for a particular airport, an airport layout plan may be used subject to approval by the California Division of Aeronautics. The compatibility plan for each of the airports within the jurisdiction of the Riverside County ALUC is based upon the respective airport master plan or, as allowed by the statutes, a state-approved airport layout plan.

March ARB Air Installation Compatible Use Zones

The communities surrounding March ARB have each adopted overlay zones for compatibility with March ARB. Four jurisdictions have incorporated standards from the March ARB/Inland Port ALUCP into their respective development regulations:

- City of Moreno Valley
- City of Perris
- City of Riverside
- Riverside County

The March ARB/Inland Port overlay zones include seven subzones:

- **Zone A** clear zone that includes the land at each end of the runway.
- **Zone B1** inner approach/departure zone that includes the land within the March ARB APZ I and II.
- **Zone B2** high noise zone that includes areas beneath or adjacent to final approach and initial departure flight corridors or adjacent to runway, but outside of the APZs.
- **Zone C1** primary approach/departure zone that includes the areas beneath or adjacent to low altitude overflight corridors and have a moderate accident potential risk.
- **Zone C2** flight corridor zone that includes the areas distant (beyond 5 miles) portion of instrument arrival corridor; or closed-circuit flight training activity corridors.
- **Zone D** flight corridor buffer that includes the areas on periphery of flight corridors.
- **Zone E** other airport environs that includes the areas within outer or occasionally used portions of flight corridors

The development standards for March JPA apply land use standards and development standards within an AICUZ Study Overlay District.

County of Riverside Land Use Plans and Regulations

In California, counties and municipalities have the authority to regulate land use. They control land use through various regulations and planning efforts, including general plans, zoning ordinances, and other programs. The communities surrounding March ARB have adopted these local planning tools, zoning ordinances, and general plans to guide future growth.

Riverside County General Plan

The Riverside County General Plan addresses several critical issues facing the county and provides a framework to guide decisions regarding the location of future development. The plan is meant to be a living document that implements the long-term, general policy for the physical development of unincorporated areas of Riverside County. The General Plan is grounded in the Riverside County Integrated Project (RCIP) Vision and sets the direction for Riverside County's land use and development in strategic locations, as well as the development of its economic base, the framework of its transportation system, and the preservation of the extremely valuable natural and cultural resources it contains. The Riverside County General Plan serves as a guidebook containing direction that will enable achievement of its Vision Statement. The General Plan's structure is two-tiered. It covers the entire unincorporated portion of the County of Riverside and is augmented by 19 more detailed Area Plans covering the county's territory except for the undeveloped desert areas and the March Joint Air Reserve Base. The Plan contains eleven elements including land use, safety, noise, and housing, among others. The thrust of the General Plan is to manage the overall pattern of development more effectively. The Area Plans provide a clear and focused opportunity to enhance community identity within the County of Riverside and stimulate quality of life at the community level.

The land use element is broken into several sub-elements that pertain to specific areas of Riverside County. The future land use plan outlines the proposed general distribution of various land uses within the county and consists of a set of goals, objectives, policies, and programs. The plan recommends Riverside County to implement and be consistent with the purposes of the Airport Land Use Law which provides for the creation of the Riverside County ALUC and the adoption of ALUCPs by the Commission to assist the County of Riverside and affected cities in land use planning in the vicinity of public-use airports located in the county. In addition, the Plan's policies recommend for airport facilities to continue operating to meet existing and future needs respecting potential noise and safety impacts as well as review all proposed projects and require consistency with any applicable ALUCP.

Riverside County Zoning Regulations

Title 17, the Zoning Ordinance of the County of Riverside, establishes zoning districts and supporting land use regulations. The purpose of the ordinance is to implement the County's General Plan and to protect the health, safety, and general welfare of residents. The primary zoning districts include residential, business, redevelopment, and special purpose, with multiple zoning categories within each district. Each zoning district category establishes allowable land uses, densities, and specific supporting regulations. The zoning ordinance includes provisions for several specific plans within the County.

Additionally, the Zoning Ordinance for the County does not currently have regulations relating to an airport overlay zone. However, Riverside County ALUC is the recommending body to local jurisdictions and lays out policies for the communities surrounding March ARB.

Riverside County Subdivision Regulations

Title 16 of the Riverside County Code provides regulations regarding the subdivision of land. The regulation provides standards and procedures for the acceptance, processing, hearing, and final action on subdivision and other mapping applications.

Riverside County Building Code

Title 15, Buildings and Construction adopted the 2019 California Building Standards Code, California Code of Regulations, and Title 24; however, there are no specific provisions for military compatibility. The March ARB Chapter 15.68-Airport Approaches Zoning Regulations speaks to restrictions, mostly dealing with height restrictions and nonconforming uses in one of the five zones called out in the chapter.

March Air Reserve Base/Inland Port ALUCP

This plan is one of the fundamental planning tools guiding land use and development around March ARB. The ALUCP is updated based on significant changes to related plans or airfield operations. The ALUCP was last updated in 2014, reflects the latest AICUZ/JLUS study/studies performed at that time and may be updated based on the recommendations of this study. The ALUCP is the fundamental guidance document for use by the Riverside County ALUC when considering development applications in the vicinity of March ARB. Additionally, the ALUCP provides a defined set of compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and

ordinances and to landowners (including special district and other local government entities as well as private parties) in their design of new development.

The Riverside County ALUCP is organized into three volumes. The first volume of the ALUCP contains the policies by which the ALUC operates and conducts compatibility reviews of proposed land use and airport development actions. The second and third volumes present various background data regarding each airport and its environs. Data for airports in western Riverside County is included in Volume 2; data regarding eastern county airports is found in Volume 3. In addition to serving as a convenient information reference for each airport, the material in Volumes 2 and 3 serves to document the data and assumptions upon which the compatibility map for each airport was based.

March Air Reserve Base Approach Protection Study

The 2017 Approach Protection Study (APS) identifies parcels that may be perceived by their owners or by land developers as potential sites for the development of highly intensive, incompatible uses attracting a large number of people to areas susceptible to risk of an aircraft accident. The study was prepared for the County of Riverside Economic Development Agency (EDA), recognizing the EDA's role as managers of the airports owned by Riverside County. The study focuses on actions that can be taken by the EDA to help protect the March ARB from encroachment of incompatible land uses.

The stated purpose of the APS is to further protect the March ARB/Inland Port Airport (IPA) from encroachment of incompatible land uses by identifying parcels that potentially could be acquired by the Riverside County EDA. The APS focuses on properties located within the AICUZ-defined CZs, and APZs I and II. The APS also focused heavily on parcels located south of the March ARB as this area has experienced significant growth in recent years and is considered to be the most vulnerable to encroachment of incompatible development. The APS included a review of some 330 parcels in the southern APZs and CZ off Runway 14-32. The APS identified fifty (50) parcels that would be the highest priority for acquisition, based on the potential for incompatible development.

Municipal Land Use Plans and Regulations

City of Riverside General Plan

The City of Riverside General Plan was developed to provide broad and comprehensive policy direction for future land use decisions and related aspects of community planning. In keeping with its tradition of looking forward and engaging the community in important planning decisions, the City undertook a comprehensive Visioning Riverside program. Riverside's Vision establishes five key themes around which this Plan was crafted; how we work, how we play, how we live, how we get around, and how we learn. There are 12 Elements and a housing technical report within the plan, with the Land Use and Urban Design Element being the largest and most extensive in the document. with numerous neighborhood and specific plans. The Land Use and Urban Design Element also references numerous neighborhood and specific plans.

The objectives and policies set forth in the Land Use and Urban Design Element will be implemented through a variety of planning tools to be adopted separately and refreshed periodically through the 20-year horizon of the General Plan. The Element describes present and planned land uses and their relationship to Riverside's visionary goals and consists of text, maps and diagrams that outline the future land uses within the City and how these uses are integrated with the other General Plan elements, objectives, and policies.

The land use policy map illustrates the various types and distributions of land uses planned for Riverside. The land use classification system includes 24 land use designations which identify the types and nature of development allowed in particular locations depicted on the land use map. These designations provide a spectrum of land use types and intensities, including several categories intended to reduce urban sprawl and conserve public resources by focusing on mixed-use and higher-density residential development along key corridors and at designated activity centers.

The residential categories include nine designations that allow for a range of housing types and densities. The non-residential categories include two different intensities of commercial uses, areas for offices and business parks, and industrial uses, all to promote a range of revenue and employment-generating businesses and a more balanced community. Other non-residential designations include agriculture, public facilities, open space/natural resources and parks, and private recreation.

In addition to these policies, in 2021, the City of Riverside adopted an updated Safety Element that directly addresses aviation-related policies. This Element underscores the value of land planning for public safety, the Riverside County ALUCP, and the role of the ALUC in land use planning within the airport-influence areas around March ARB.

The Public Safety Element complements the Land Use and Urban Design Element's objectives and policies as well as the specific objectives and policies of the General Plan for the Orangecrest and Mission Grove neighborhoods. It reinforces City support for compatible development surrounding March ARB and the continued operation of its airfield, specifically:

> Policy LU-75.1: (Orangecrest) Avoid creating any hindrance to safe operations at the March Air Reserve Base/Inland Port using the Riverside County ALUCP when reviewing projects within the airport influence area for consistency.
>
> Policy LU-69: Complete buildout of the Mission Grove Specific Plan, encouraging development that can harmoniously co-exist near the March Airport facility.

City of Riverside Zoning Regulations

The Zoning Code of the City of Riverside, Title 19, provides regulations for zoning districts and land uses and is intended to be fully consistent with the Riverside General Plan to protect the health, safety, and general welfare of the community. There are several residential, commercial, and industrial district types, as well as various overlay districts and specific plans. Chapter 19.149 – Airport Land Use Compatibility, establishes and implements the requirements of the Riverside County ALUCP for airports that affect land uses within the City of Riverside. Airports that affect land uses within the City of Riverside are the Riverside Municipal Airport, Flabob Airport, and the March ARB/IPA.

Specifically, 19.149.070 – Compatibility zones and criteria for March Air Reserve Base/Inland Port Airport for uses proposed within airport influence areas of the March Air Reserve Base/Inland Port Airport refers to the March ALUCP to determine whether a particular use is compatible with the applicable airport and a permissible use. A general description of each compatibility zone is provided in an accompanying table.

City of Riverside Subdivision Regulations

Title 18 regulates the division of lands for the City. The purpose of this Subdivision Code is to regulate and control the design and improvement of subdivisions in order to achieve the following purposes:

- To assist with implementing the Riverside General Plan adopted by the City Council as a long-range, general comprehensive guide to the physical development of the City
- To provide lots of sufficient size and appropriate design for the purposes for which they are to be used
- To provide streets of adequate capacity and design for the traffic that will utilize them and to ensure maximum safety for pedestrians and vehicles
- To provide sidewalks or pedestrian ways where needed for the safety and convenience of pedestrians
- To preserve the natural assets of the City's setting, to prevent the indiscriminate clearing of property and the destruction of trees and shrubs and other desirable landscape features, to ensure adequate access to each building site, and to create new beauty and safeguard the public safety and welfare through skilled subdivision design
- To provide adequate systems of water supply, sanitary sewage disposal, storm drainage, street lighting, and other utilities needed for public health, safety, and convenience
- To provide adequate sites for other public facilities needed to serve the residents of the new developments
- To ensure that the costs of providing land for streets, alleys, pedestrian ways, easements, and other rights-of-way, and for the improvements therein needed to serve new developments, are borne by the subdividers rather than by the taxpayers of the City at large
- To ensure that, insofar as possible, land is subdivided in a manner that will promote the public health, safety, convenience, and general welfare
- To encourage clustering, preserve natural features, and limit grading.

City of Riverside Building Code

Title 16, Buildings and Construction, of the Riverside Municipal Code adopted the 2019 California Building Standards Code. However, there are no specific provisions for military compatibility and March ARB.

City of Perris General Plan

The General Plan provides direction for local government decisions pertaining to growth, capital investment, and the development of land in the City of Perris, so that the community's vision for its future may be achieved. The Plan includes eight elements: Land Use (including a Land Use Map), Circulation (including a Truck Route Map), Conservation, Noise, Safety, Healthy Community, and Environmental Justice. An Environmental Impact Report was prepared in conjunction with the adoption of the General Plan.

In addition, to the General Plan, the City of Perris has Master Plans for Parks and Recreation and Trails. The Parks and Recreation Plan identifies existing resources in the community, discusses its current and future needs, and includes an action plan to achieve success. The Perris Trail Master Plan is intended to implement a future trail and bikeway network consisting of pedestrian and bicycle facilities that will link neighborhoods, parks, recreational open spaces, transit hubs, employment areas, schools, and places of interest.

The City also has several special plans and policies, including an active transportation plan and an airport plan, as well as City Council policies relating to various topics, such as small wireless facilities and vehicle miles traveled. The airport plan includes the following:

- Air Installation Compatibility Land Use Zone Plan 2005
- Air Installation Compatibility Use Study March ARB 2018
- March Air Reserve Joint Land Use Plan 2010
- Perris Valley Airport Land Use Compatibility Plan 2010

City of Perris Zoning Regulations

The City of Perris Development Code, Title 19, provides regulations for zoning districts. The purpose of this development code is to protect the public health, safety, and welfare of the city by establishing zone districts and development regulations within its boundaries. All established districts are designed to obtain the economic and social advantages resulting from the planned use of land, in accordance with the Land Use Element of the General Plan. The enactment of these regulations encourages the growth and development of the community in a proper and orderly manner, as provided by the City's General Plan for the maximum benefit of the community. To achieve this purpose, the code has the following objectives:

- To implement the goals, policies, and programs of the City General Plan;
- To guide future growth and development in accordance with the policies of the General Plan;
- To adequately accommodate community facilities, including, but not limited to, transportation, utilities, recreation, and open space;
- To attain the physical, social, and economic advantages resulting from a comprehensive approach to orderly land use and resource planning.

The City of Perris Development Code includes Chapter 19.51, which establishes a March ARB/Inland Port Airport Overlay Zone ("AOZ"), regulates the development and those uses within development surrounding the base for compatibility with operations at the airport. The purpose and intent of the airport overlay zoning district is to:

- Implement the City's General Plan policies to ensure that all land uses within the AOZ are consistent with the State Aeronautics Act, state law, FAA regulations, and guidance of the California Airport Land Use Planning Handbook.
- Ensure that land uses and development within the AOZ are compatible with the March Air Reserve Base/Inland Port ALUCP, adopted in 2014.
- Prohibit the establishment or further expansion of incompatible land uses to avoid or minimize exposure of people to potential hazards associated with current and future airport operations.
- Prohibit development, use, or any installation or activity that could represent a hazard to existing and future flight operations.
- Recognize unique constraints and considerations that apply to properties that airport operations potentially affect by establishing regulations and reviewing criteria for land use and development within the AOZ.
- Recognize the boundary of the Riverside County ALUCP within the Perris City limits and Perris Commerce Center Specific Plan (PVCC SP) area by the establishment of an AOZ.

Regulations in this chapter are the same as the City of Riverside for the eight compatibility zones for March Air Reserve Base/IPA.

City of Perris Subdivision Regulations

Title 18.04 of the City of Perris Development Code provides regulations regarding the subdivision of land. The regulation provides standards and procedures for the acceptance, processing, hearing, and final action on subdivision and other mapping applications.

City of Perris Building Code

The City has adopted the 2019 International Building Codes. Title 16 of the City of Perris Code is known as the Buildings and Construction Code and sets forth the minimum requirements for building construction for the city. Section 16.22 includes provisions for noise attenuation standards for buildings located within noise-sensitive areas, establishing standards of insulation against noise for areas in the vicinity of arterials, railroads, and airports where the exterior CNEL exceeds 60 dB.

City of Moreno Valley General Plan

City of Moreno Valley General Plan 2040 was adopted on June 15, 2021. The General Plan is a dynamic document that sets forth conditions to guide how and where Moreno Valley will grow for years to come. This Plan reflects community aspirations to cultivate a family-friendly city with a modern, innovative brand and unique sense of place that reflects its

growing reputation as a model community where people choose to live, work, and play for the next generation and generations to come.

The Moreno Valley General Plan can be considered the City's development constitution, containing a statement of the community's vision of its long-term development and the policies to support that vision by guiding the physical growth of the City. The Moreno Valley General Plan serves to:

- Establish a long-range vision that reflects the aspirations of the community and outlines steps to achieve this vision.
- Guide decision-making related to development, housing, transportation, environmental quality, public services, parks, open space, and agricultural conservation.
- Help Moreno Valley achieve compliance with applicable state and regional policies, including around housing production and environmental regulations.
- Allow city departments, other public agencies, and private developers to design projects that will enhance the character of the community, preserve environmental resources, and minimize hazards.
- Provide the basis for establishing and setting priorities for detailed plans and implementing programs, such as the Zoning Ordinance and future specific plans.

The General Plan's Chapter 7 on noise seeks to proactively address sources of noise in Moreno Valley, protect against excessive noise, and support the social and economic vitality of the community.

The sub-section regarding airport noise states that airport noise levels resulting from air traffic to and from the joint-use airport at March ARB depend on the number, path, elevation, and duration of flights, the characteristics of the aircraft, and the time of day, evening, or night that flights occur. As demand for cargo shipping increases, operations at March ARB are projected to increase. This section has several policies and actions regarding noise from March ARB operations.

City of Moreno Valley Zoning Regulations

Title 9 of the City of Moreno Valley Municipal Code establishes regulations for planning and zoning. It is intended to protect and promote the general health, safety, and welfare of the City's populace. The code also serves as an implementation mechanism for the goals and objectives in the General Plan by providing regulations that set clear standards for how development occurs.

The Municipal Code provides the zoning regulations for the city, along with property development regulation requirements for each zoning district and use type. In addition to the standard zoning designations, the Municipal Code includes zoning special districts with a mixed use and overlay district.

Specifically, Chapter 9.07.060 (ALUCP) establishes and implements the requirements of the Riverside County ALUCP for the portions of the March ARB/IPA Airport Influence Area within the City of Moreno Valley and to encourage future development that is compatible with the continued operation of March ARB. It is also the intent of this chapter to recognize and implement the purpose for the guidelines contained in the March ARB AICUZ report.

City of Moreno Valley Subdivision Regulations

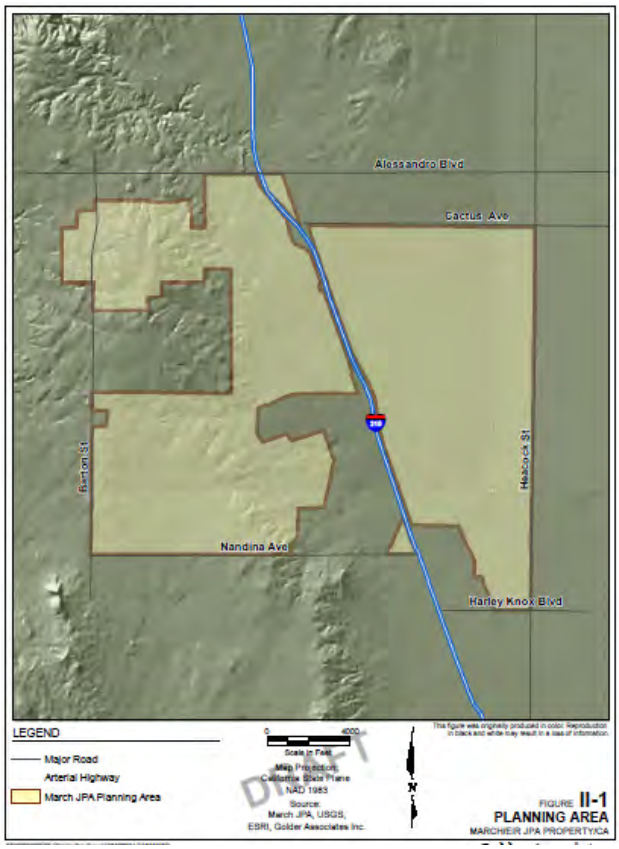
Chapter 9.14 - Land Divisions of the City of Moreno Valley Municipal Code provides regulations regarding the subdivision of land. The regulation provides standards and procedures for the acceptance, processing, hearing, and final action on subdivision and other mapping applications.

City of Moreno Valley Building Code

The City has adopted the California Building Code, 2019 Edition, based on the 2018 International Building Code as published by the International Code Council; however, there are no specific provisions for military compatibility and the March ARB.

March Joint Powers Authority Land Use Plans and Regulations

March JPA General Plan



The March JPA General Plan area is comprised of the federal property transferred from the areas that were formerly part of March AFB. Its planning area is bisected by the I-215 corridor, approximately 3 miles south of State Highway 60.

March JPA is a public entity created for the purpose of addressing the use, reuse, and joint use of March ARB. The four individual public entities that cooperatively formed the March JPA are the cities of Perris, Moreno Valley, and Riverside, and the County of Riverside. The March JPA General Plan is designed to implement the March Air Force Base Master Reuse Plan, which includes the disposal and redevelopment of approximately 4,400 acres of the 6,500 acres of the former March AFB.

The General Plan establishes policies to guide day-to-day decisions based on identified land use, circulation, environmental, economic, and social goals and objectives. The General Plan provides a basis for local government decision-making, including a nexus to support development exactions.

The General Plan's six elements, which cover the seven State-mandated elements, are as follows; Land Use, Transportation, Housing, Noise/Air Quality, Resource Management, and Safety/Risk Management. Each of the General Plan elements consists of four sections: the introduction, the goals and policies, the plan, and the implementation program. The introduction describes the purpose and focus of the element and also introduces other plans and programs outside the General Plan which may be used to achieve specific General Plan goals. The Goals and Policies section presents March JPA's long-term objectives for the subject area of each element. The Plan has several goals that encourage compatible development around March ARB such as support for the continued military mission of March ARB and preservation of the airfield from incompatible land use encroachment, as well as other goals pertaining to adequate water quality, safe and efficient wastewater treatment and disposal, and adequate flood control facilities.

The Land Use Element represents the graphic blueprint for the development and reuse of the March JPA Planning Area, contains the land use map, and sets forth goals, policies, and objectives for the long-term physical development of the Planning Area. The land use map provides the framework for development and establishes classifications of land use,

designates the general location and distribution of these uses, and sets standards of density and development intensity for each identified land use type.

The land use plan contains significant amounts of industrial, business park, aviation, and office land uses. The land use designations are divided into four general classifications with a total of 13 distinct designations:

- Industry
  - Business park
  - Industrial
- Commerce
  - Office
  - Mixed use
  - Commercial
  - Destination recreation
- Special
  - Military operations
  - Aviation
  - Historic district
  - Air Force Village West expansion
  - Cemetery expansion
- Public
- Parks/recreation/open space

The land use plan was designed to create land use patterns that are compatible with March ARB operations and the continuing use of March ARB as a military base. To the extent possible, land use designations minimize the introduction of new residences, which is the use least compatible with aircraft operations. The plan accounts for the recommendations of the AICUZ for March ARB, which sets out guidelines to minimize conflicts between aircraft operations and surrounding development.

March JPA Zoning Regulations

Chapter 9 of the March JPA Development Code, as adopted by the March Joint Powers Commission, establishes standards, guidelines, and procedures to protect and promote the public health, safety, convenience, and welfare of present and future citizens of Riverside County and of the member jurisdictions of the March JPA, and more specifically to:

- Implement the goals, objectives, policies, and programs of the March JPA General Plan, and to manage future growth and change in accordance with that plan.
- Protect the physical, social, and economic stability and the vitality of residential, commercial, industrial, public, institutional, and open space uses within the March JPA Planning Area to ensure their orderly development.
- Reduce or eliminate hazards to the public resulting from potentially inappropriate location, use, or design of buildings and other improvements.
- Attain the physical, social, and economic advantages resulting from comprehensive and orderly land use and resource planning.

The Development Code provides for five distinct districts: residential, commercial, employment, open space and agriculture, and special districts, as well as sections for specific plans, development review process, land use approvals, permitting, and land divisions. Section 9.07.040 AICUZ is the Air Installation Compatibility Use Overlay (AICUZ Overlay) and is intended to limit public exposure to aircraft accidents and noise and to encourage future development that is compatible with the continued operation of March ARB. It is also the intent of the AICUZ Overlay to recognize and implement the purpose for the guidelines contained in the March Air Reserve Base Air Installation Compatible Use Zone Report.

March JPA Building Code

The March JPA adopted the California Building Code, 2019 Edition, as published by the International Code Council.

4.6. Other References

In the interest of land use compatibility between the military and local communities, the DoD OLDCC and public interest groups such as the National Association of Counties (NACo) have prepared educational documents and videos to inform municipalities and the public about encroachment issues and methods that can be used to address existing or future compatibility concerns. Each of the items cited can be accessed at the link that follows its description.

Guides/Resources

State Policy Options: A Report of the National Conference of State Legislatures Task Force on Military and Veterans Affairs (January 2012)

This report provides state legislators and staff with information about the range of policy options available to them to sustain their neighboring military installations and the associated testing and training operations. It is designed to instill a greater understanding of the roles that state legislators, local government officials, land conservation organizations, and the military play in managing development near military bases and protecting natural resources and the health and safety of citizens.

http://www.ncsl.org/documents/environ/NCSL_State_Policy_Options_020112_FINAL.pdf

Collaborative Land Use Planning: A Guide for Military Installations and Local Governments, International City/County Management Association and the Metropolitan Institute at Virginia Tech

This guide provides essential observations about land use policies and procedures, discusses critical questions, and suggests model practices for military commanders to build stronger relationships with local policymakers and planning officials.

www.fedcenter.gov/_kd/Items/actions.cfm?action=Show&item_id=7667&destination=ShowItem

Working with Local Governments: A Practical Guide for Installations, (May 2012), International City/County Management Association and the National Association of Counties

This guide is a primer on how local governments operate and on what installation personnel can do to engage state and local governments in dialogue on compatibility issues.

http://www.repi.mil/Portals/44/Documents/Primers/Primer_LocalGovernments.pdf

Goodfellow Air Force Base and The City of San Angelo: a True Example of a One Community Effort to Integrate Partnerships at All Levels.

This document presents an overview on how, in two years, Goodfellow and San Angelo doubled their community partnerships, increased yearly cost savings from $400,000 to $6 million, and achieved the DoD's first IGSA for contracted quarters with a public university and the USAF's first Base/Wing IGSA for faculty development with a public university. The key to their success is unity of effort focused on co-developing the overall community.

https://knowledge-online-defense-communities.knowledgeowl.com/help/federal-grant-opportunities-for-communities-whats-out-there-beyond-dod

Beyond The Fence Line: Strengthening Military Capabilities Through Energy Resilience Partnerships

This document presents case studies of leading-edge energy resilience projects in which defense community partnerships have been instrumental to success. Each case study provides background on the military installation, details of the energy resilience innovations that were deployed, and an overview of the defense community partnerships involved.

https://knowledge-online-defense-communities.knowledgeowl.com/help/installation-energy-water-beyond-the-fence-line-strengthening-military-capabilities-through-energy-resilience-partnerships

Installation-Community Partnerships: A New Paradigm for Collaborating in the 21st Century, Journal of Defense Communities

This article explores the changes that are prompting military and community leaders to take a closer look at partnerships and provides a template for assessing the success of a prospective collaboration. Two case studies are presented: the arrangement under which the City of Monterey, California provides all facility maintenance at the Presidio of Monterey, and the enhanced use lease at Nellis Air Force Base that resulted in the city of North Las Vegas building a $25 million fitness center for the Air Force.

https://files.monterey.org/Document%20Center/City%20Hall/City%20Manager/Community%20Partnership/The%20Monterey%20Model/Literature/Installation%20-%20Community%20Partnerships.pdf

The Base of the Future: A Call for Action by States and Communities (April 2016), Association of Defense Communities

This article examines the areas of interest that all bases share with their local hosts and proposes an overarching approach to advising defense communities and states in the development of their own policies regarding adaptation and resilience when dealing with infrastructure, service, and economic changes inside and outside the fence line. Five key components focus on economic development and community planning, expanded sharing of services and infrastructure, mission capability and natural resource conservation, and military involvement and engagement for policy and legislation.

https://knowledge-online-defense-communities.knowledgeowl.com/help/base-of-the-future-report

Strengthening National Defense: Countering Encroachment through Military-Community Collaboration (2009), National Academy of Public Administration

This report discusses the significant and growing challenges to military readiness resulting from nearby civilian community growth and proposes recommendations for increasing collaboration among key stakeholders – local and state governments, non-profit organizations, the military services and installations, and other federal agencies – to creatively and effectively address these complex and critical issues.

https://s3.us-west-2.amazonaws.com/napa-2021/studies/strengthening-national-defense-countering-encroachment-through-military-com/09-20.pdf

California Governor's Military Council

According to its website, the Governor's Military Council helps position California to maintain and grow military operations in the state, providing insight and recommendations to state leaders who are developing a strategy to support and grow military operations. As federal leaders consider cuts and realignment of federal military operations, the Council also articulates the unique military value of California's diverse network of installations and of the Californians and businesses that support them. The Council also supports the efforts of local and regional organizations to improve partnerships with military installations in their communities.

https://militarycouncil.ca.gov/

Videos

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

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

Managing Growth, Communities Respond, OLDCC

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.
https://www.youtube.com/watch?v=rea6d3bDp3c

5 Compatibility Assessment

In relation to military readiness, compatibility can be defined as the balance or compromise between the needs and interests of both the community and the military. The goal of compatibility planning is to promote a collaborative environment in which both community and military entities communicate and coordinate to identify and implement mutually supportive actions that allow both parties to achieve their objectives. This collaborative approach provides the context in which policies and actions can be developed and recommended through a March ARB CUS Implementation Plan.

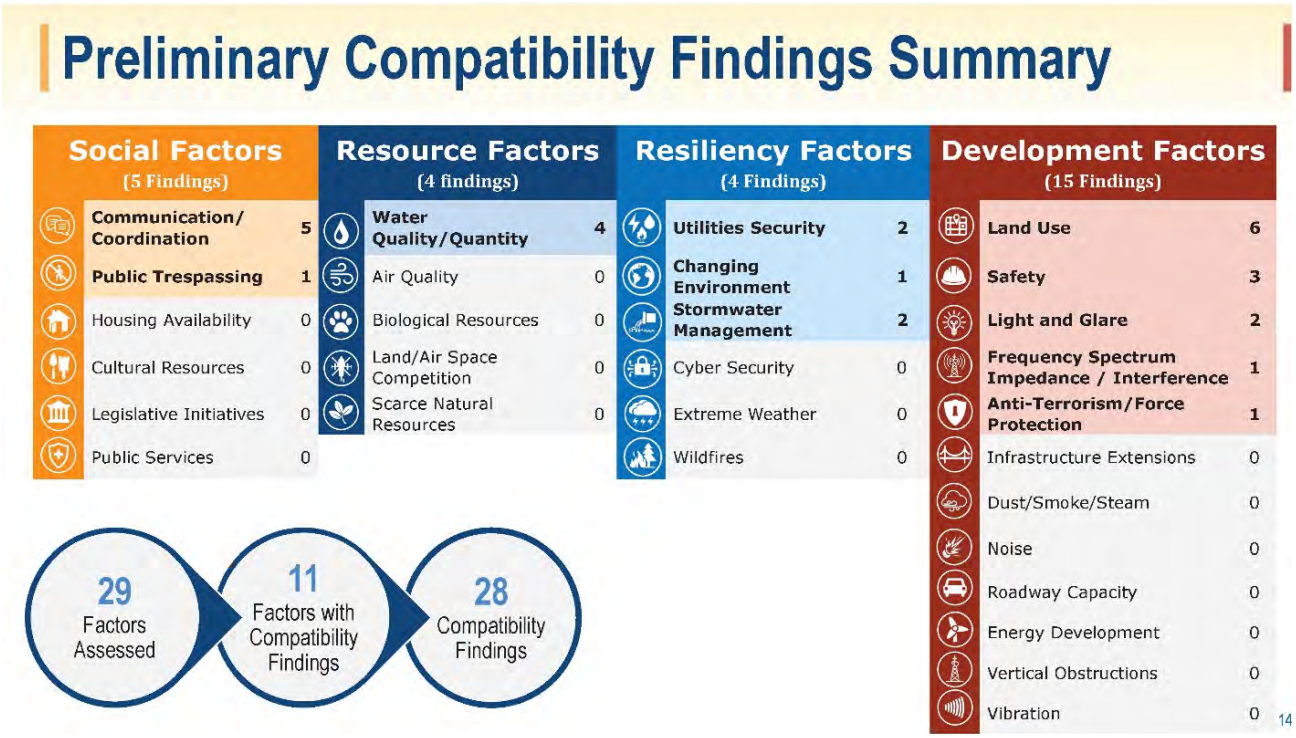
Chapter 5 assesses the compatibility factors and issues applicable to March ARB and discusses key findings therein.

5.1 Compatibility Factor Overview

A number of variables are used to determine whether military and community plans, programs, and activities are compatible or in conflict. For the March ARB CUS, 29 compatibility factors, or general types of compatibility problems (Figure 5-1), were used to identify, assess, and establish the specific set of compatibility issues that are occurring in the Study Area.

A compatibility issue is defined as something that impacts, hinders, or presents an obstacle to either the military mission(s) or to nearby communities and that requires an action to be resolved or effectively mitigated. This chapter provides an assessment of each compatibility issue that was identified through the March ARB CUS. The issues are evaluated in terms of the existing or potential impacts they have or may have on the military and/or surrounding communities and in terms of the severity of those impacts.

Each compatibility issue is identified under one of the 29 compatibility factors used as the basis for the compatibility analysis. The compatibility factors with findings are assessed in alphabetical order in Section 5.3 of this chapter. Each finding has an alphanumeric compatibility factor code numbered in the order the findings are presented within the specific compatibility factor. For example, LU-1 stands for Land Use and refers to the first finding within this development factor.



Compatibility Factor Evaluation Methods

This section outlines the methodology that was used in assessing each factor for compatibility issues of specific concern for the March ARB and surrounding communities.

The identification of compatibility issues consisted of a comprehensive and inclusive discovery process to identify significant stakeholder issues relative to the 29 factors. During the beginning phase of the project, interviews were conducted with key project stakeholders to discuss the CUS process and document any compatibility issues they felt existed or could exist in the future. The following stakeholder groups participated:

- County of Riverside
- City of Riverside
- City of Moreno Valley
- City of Perris
- March Joint Powers Authority
- March Inland Port Airport Authority

Additional compatibility issues were identified through meetings with the CUS Policy Committee and Technical Working Group (TWG), at public workshops, and based on the technical evaluation and experience of the project consultant. Opportunities for additional stakeholder input were provided on the project website and at other stakeholder events throughout the project.

The development of strategies that address the identified compatibility issues (see the March ARB CUS, Chapter 6: Implementation Plan) was both directly and indirectly affected by the evaluation process. Issue assessment included determining the severity of each issue's impact(s) on both the missions at March ARB and the quality of life of nearby residents. The severity of impacts was also used to help prioritize implementation.

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

- This chapter provides technical background on the compatibility issues that were identified as relevant to the March ARB CUS. The intent is to provide appropriate information for stakeholders to be sufficiently aware of and knowledgeable about the issues and the potential mitigation strategies to assess the viability of specific CUS recommendations. The discussion is not designed or intended to be utilized as an exhaustive technical evaluation of existing or future conditions within the CUS Area.

- Of the 29 compatibility factors considered, 18 were determined to be inapplicable to this CUS based on the lack of issues identified by stakeholders and the public, as well as CUS Team experience. The 18 factors are listed below.
    - Air Quality
    - Biological Resources
    - Cultural Resources
    - Cyber Security
    - Dust/Smoke/Steam
    - Energy Development
    - Extreme Weather
    - Housing Availability
    - Infrastructure Extension
    - Land/Airspace Competition
    - Legislative Initiatives
    - Noise
    - Public Services
    - Public Trespass
    - Scarce Natural Resources
    - Vertical Obstructions
    - Vibration
    - Wildfires

Although there were no compatibility issues identified relating to these 18 factors, they are defined and briefly summarized in this section in order to define all the factors that were considered and so represent the actual analysis conducted.

Air Quality (AQ)

Air quality is defined by criteria air pollutants and hazardous air pollutants that are 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 operational changes or new growth/development at the installation or limit growth and development in surrounding jurisdictions.

Biological Resources (BIO)

Biological resources include threatened and endangered species and the habitats they live in or utilize, such as wetlands and migratory corridors. The presence of sensitive biological resources may require special development considerations. Biological resources may also include "species of concern," which are living organisms in need of concentrated conservation efforts, as well as areas such as wetlands and migratory corridors that are critical to the overall health and productivity of an ecosystem. The presence of sensitive biological resources in an area where increased use or development is planned may prompt special development considerations or limitations and protective measures and should be identified as a concern early in the planning process. Several threatened, endangered, and species of concern, species and habitats are present at March ARB and managed by U.S. Fish and Wildlife Service staff.

Cultural Resources (CR)

Cultural resources are objects, places, and practices that are especially representative of, and/or meaningful to, a specific group of people, their worldview, belief system, or way of life. Cultural resources include prehistoric and historic-period artifacts, archaeological sites, buildings, structures, districts, and landscapes, as well as historic-period records and photographs.

Cyber Security (CS)

The continued advancement of computers and other technology has drastically expanded the Air Force's capabilities. However, these same advancements have created vulnerabilities in security. The need to prevent, detect, and repel cyber-attacks is critical; today's military must ensure the security of their computer networks and online communications to maintain combat effectiveness. From programming to hardware, the need to keep systems and information safe is imperative in keeping an effective fighting force.

Dust/Smoke/Steam (D/S/S)

Particles of dust and other materials found in the air are referred to as particulate matter. PM10 and PM2.5, with particles less than 10 µm (micrometer) in diameter and less than 2.5 µm (micrometer), respectively, and considered toxic, can be caused by many phenomena, including vehicular traffic on unpaved roads and surfaces, wind blowing over unpaved and unvegetated areas, vehicle maneuvers, explosions, aircraft operations, and other earth-moving activities such as construction, demolition, and grading. Smoke can be created by fire (controlled burns, agricultural burning, and artillery exercises), industrial activities, and other similar processes. Similarly, steam can be created by industrial and other activities and is more prominent during cooler weather. Dust, smoke, and steam are compatibility issues if sufficient in quantity to impact flight operations, such as by reducing visibility or damaging equipment.

Energy Development (ED)

The development of energy sources, including alternative energy sources such as solar, wind, or geothermal, could pose compatibility issues related to glare (solar photovoltaic (PV) panels), vertical obstructions (wind turbines and geothermal steam plumes), and radar operations (wind energy disturbance). It is in the military's interests, as well as in communities' interests, to support alternative energy development for both energy security and economic reasons. The emphasis of this analysis is to identify gaps in coordination and/or communication regarding energy development and to increase understanding of communities' pursuits, opportunities sought by alternative energy developers, and the intersection of these endeavors with military missions in order to improve communication and coordination efforts that ensure mutually compatible development. By identifying potential sources of conflict if uncoordinated or pursued in isolation from either the community, private development, or the military unilaterally, this process serves to highlight the existence of potential conflict and (as discussed in strategies later in the CUP Implementation Plan) address technological approaches or processes and communication and coordination approaches to prevent any entity from encroaching upon the other.

Extreme Weather (EW)

Increasingly more extreme weather is the result of atypical shifts in global atmospheric conditions and temperatures caused by natural factors and human activities such as burning fossil fuels that impact ozone levels and other variables. Extreme weather is linked to excessive wind force, flooding, drought, and wildland fire with associated risks to life, property, infrastructure, and resource availability. Defense readiness and community safety and sustainability hinge on the ability to withstand extreme weather and both short- and long-term impacts through mitigation efforts and adaptive methods.

Housing Availability (HA)

Housing availability refers to the supply and demand for housing in a region. It also identifies the competition for housing that may result from changes in the number of military personnel and/or the supply of military family housing provided by an installation.

Infrastructure Extension (IE)

Infrastructure plays an important role in land use compatibility. It can enhance the operations of an installation and nearby communities by providing needed services, which, in turn, eliminates or reduces competition for those resources. Conversely, infrastructure can create encroachment issues if facilities are expanded without considering the consequences of future development. The extension or expansion of community infrastructure to areas adjacent to an installation can induce growth that may result in incompatible uses and conflicts between a military mission and community activities and needs. Within general planning efforts and through appropriate consideration and guidance, infrastructure extensions can serve as a mechanism to guide development toward appropriate areas, protect sensitive land uses, enhance resiliency, and improve compatibility between community land uses and military missions.

Land/Airspace Competition (LAS)

The military manages and uses land and air space for testing, training, and operational missions. These resources must be available and of sufficient size, cohesiveness, and quality to accommodate effective training and testing. Military and civilian land and air operations can compete for limited land and air space, especially when the usage areas are near each other. The use of these shared resources can impact future development and operations for all users.

Legislative Initiatives (LI)

State and local legislation can have a significant impact on compatibility planning by allowing or restricting local jurisdictions' ability to control land use and planning activities near military assets. Legislation can prompt changes in state and local laws and ordinances to support the objectives of recommended CUS strategies. Military compatibility-related legislation in the State of California is robust and addresses many compatibility factors within this study. As such, no legislative initiatives are identified within this study.

Noise (NOI)

Noise is sound that reaches unwanted levels. The impacts, or perceived impacts, of noise on people and both wild and domestic animals, can pose notable concerns. Exposure to high noise levels can have a significant impact on activities, health, safety, and quality of life.

Public Trespassing (PT)

Public trespassing onto military installations, whether intentional or unintentional, is a safety concern and can also be a potential concern with regard to malicious threats to military personnel and assets. The potential for trespassing increases with ease of access due to proximity of development, public use areas such as parks, and access to public transportation. Intentional and unintentional trespass occurs at March ARB. Base Security Forces continuously monitor and frequently respond to trespassing incidents. Due to the nature of military missions and routine airfield operations, this can present a public safety issue as well.

Public Services (PS)

Public services concerns include assurances that services such as police, fire, emergency medical services, parks and recreation, and infrastructure are of good quality and available to the installation and surrounding communities as the area develops. The supply and demand of these public services in the event of emergency situations are also considered.

Scarce Natural Resources (SNR)

Pressure to gain access to valuable natural resources (such as oil, natural gas, minerals, and water) that are located on military installations, within military training areas, or on public lands historically used for military operations can impact land utilization and military missions. Natural resources are assets for installations, and ensuring that the resources and associated environment are properly conserved, managed, and used sustainably is critical to support the current and future military mission.

Vertical Obstructions (VO)

Vertical obstructions are buildings, trees, structures, and other features that encroach into airspace used for military operations. Vertical obstructions can present safety hazards for both the public and military personnel. Vertical obstructions are addressed by FAA Part 77 authority near civilian airports and military airfields.

Vibration (V)

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. Vibrations may be caused by military and/or civilian activities and can disrupt civilian activities and impact the quality of life.

Wildfires (WF)

Wildland fire intensities have increased throughout the West, with large fires able to cause severe impacts on operations and military readiness. California is historically prone to wildland fires. According to the California Department of Forestry and Fire Protection Fire Siege report, wildland fires claimed the lives of 28 civilians and three firefighters, destroyed 9,248 structures, and consumed 4.2 million acres in 2020. California experienced its first "Gigafire," with the August Complex consuming over 1 million acres alone. Wildland fires can occur through man-made or natural events. As the climate continues to change with increasingly drier conditions, the threat of wildland fires is exacerbated, especially in areas of lower elevation where non-native grasses are prevalent. Wildland fires can threaten the public safety and welfare for all community members. Wildland fires also threaten the integrity of military installation facilities and can affect military training and operations. Installation facilities include the natural landscape as well as the built facilities needed to meet training and mission requirements.

5.2 Previous Compatibility Studies

2018 Air Installation Compatible Use Zones Study

This AICUZ Study for March ARB is an update of the AICUZ study dated 2005. This update was initiated because of the beddown of new aircraft, operational changes, and the introduction of new flight tracks. It is a reevaluation of aircraft noise and accident potential related to Air Force flying operations and is designed to aid in the development of local planning mechanisms which will protect public safety and health, as well as preserve the operational capabilities of March ARB.

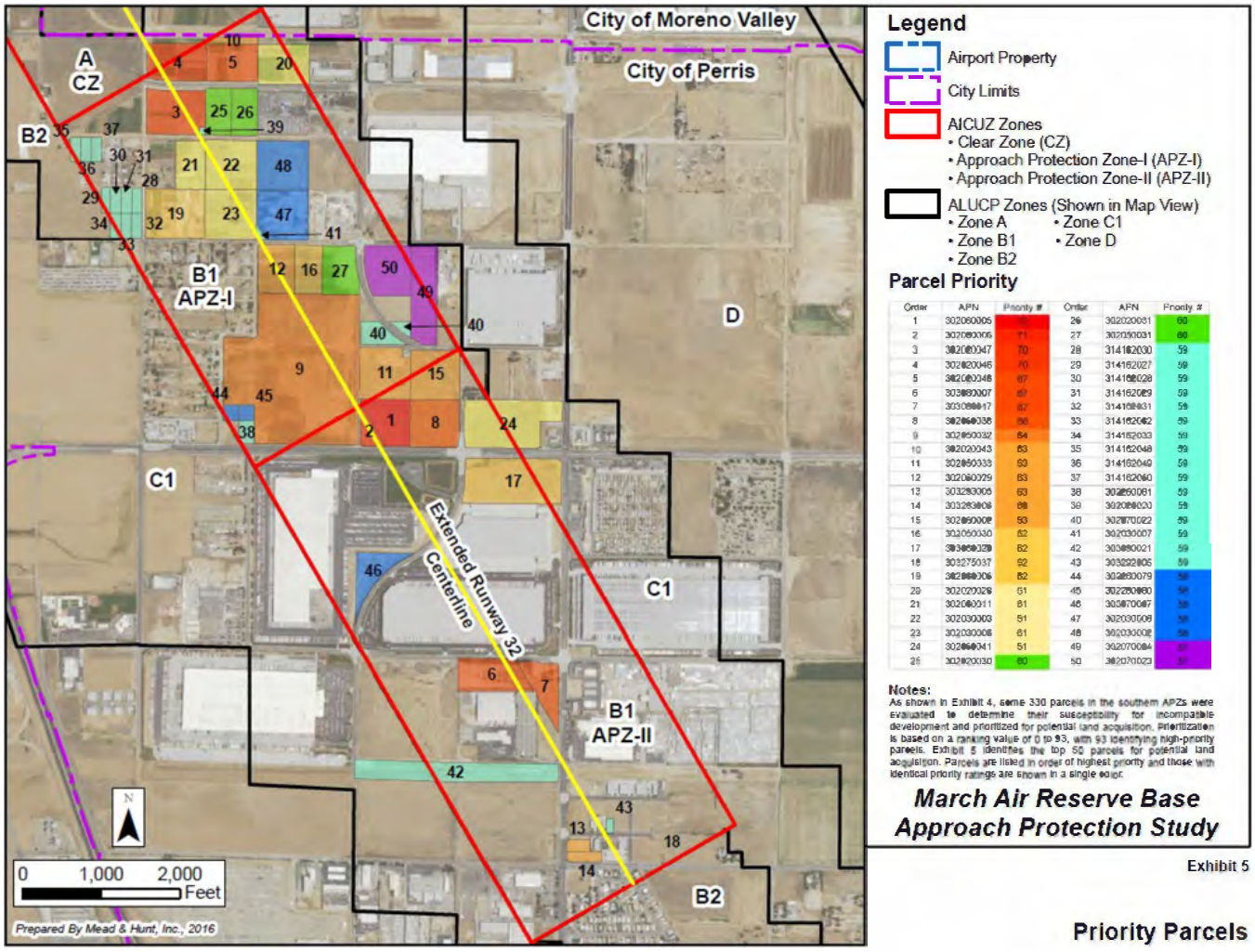
The AICUZ study contains a summary description of the affected area around the base. It outlines the location of runway CZs, aircraft APZs and noise contours and provides recommendations for development compatible with military flight operations. It is the intent of the designers of the AICUZ program that local governments incorporate these recommendations into community plans, zoning ordinances, subdivision regulations, building codes, and other related documents.

The 2018 AICUZ update provided noise contours, including a planning noise contour utilizing the CNEL metric. Long-range planning by local land use authorities involves strategies to influence present and future uses of land. Due to the long-range nature of planning, the Air Force provides planning contours–noise contours based on reasonable projections of future missions and operations. AICUZ studies using planning contours provide a description of the long-term (5-10 year) aircraft noise environment for projected aircraft operations that is more consistent with the planning horizon used by state, tribal, regional, and local planning bodies.

2017 March ARB Approach Protection Study (APS)

The stated purpose of the 2017 March ARB APS was to "further protect the March ARB/IPA from encroachment of incompatible land uses by identifying parcels that potentially could be acquired by the Riverside EDA." The APS conducted a detailed analysis of all property within the southern safety zones, including the CZ and both APZs of Runway 14-32. This study identified 50 property parcels with the highest potential for incompatible development and "highly intensive uses" which could attract "a large number of people to areas susceptible to risk of an aircraft accident." These parcels are shown in the Priority Parcel map from the APS (Figure 5-1 below). The APS provides a complete Parcel Report for each parcel identified by Riverside County as a priority for potential acquisition.

Figure 5-1 Exhibit 5 March ARB Approach Protection Study



Source: *March ARB/IPA, Riverside County Economic Development Agency, 2017*

2010 Joint Land Use Study

The 2010 March ARB/IPA JLUS was created to serve as the March JPA's land use compatibility planning recommendations to each of these entities. It need not be adopted by the March JPA except as it applies to the lands under the March JPA's direct control. Additionally, though, the JLUS was to be recommended to the Riverside County ALUC for adoption as the ALUCP for March ARB/IPA, then each of the five jurisdictions exercising land use authority would be obligated to either bring its general plan and any specific plans into consistency with the ALUC plan.

Given the original direction of the document, the JLUS recognized four compatibility factors: noise, overflight, safety, and airspace protection, which are discussed below.

Compatibility Factor 1: Noise. The purpose of noise compatibility policies is to avoid the establishment of noise-sensitive land uses in the portions of airport environs that are exposed to significant levels of aircraft noise. Noise contours and interior noise reduction were found to further these policies.

Compatibility Factor 2: Overflight. Noise from individual operations, especially by comparatively loud aircraft, can be intrusive and annoying in locations beyond the limits of the mapped noise contours. Sensitivity to aircraft overflights varies from one person to another. The purpose of overflight compatibility policies is to help notify people about the presence of overflights near airports so that they can make more informed decisions regarding acquisition, or lease of property in the affected areas, especially regarding residential land uses. Avigation easements, deed notices, and disclosures as required by California law were recognized as means of providing awareness of overflight.

Compatibility Factor 3: Safety. The intent of land use safety compatibility criteria is to minimize the risks associated with an off-airport aircraft accident or emergency landing.

- Risks both to people and property in the vicinity of an airport and to people on board the aircraft shall be considered.
- The most stringent land use controls shall be applied to the areas with the greatest potential risks.

Vulnerable occupants, maximum number of people, multi-story buildings, hazardous materials, open land, limitations to clustering, risk reduction through building design (concrete walls, strength of roof), and critical community infrastructure (power plants) were determined to be issues for this factor.

Compatibility Factor 4: Airspace protection; tall structures, trees, and other objects, particularly when located near airports or on high terrain, may constitute hazards to aircraft in flight. Federal regulations establish the criteria for evaluating potential obstructions (Part 77 of Federal Aviation Regulations). These regulations also require that the FAA be notified of proposals for creation of certain such objects. The FAA conducts "aeronautical studies" of these objects and determines whether they would be hazards, but it does not have the authority to prevent their creation. The purpose of ALUC airspace protection policies, together with regulations established by local land use jurisdictions and the state government, is to ensure that hazardous obstructions to the navigable airspace do not occur. The FAA's Form 7460-1 online process is the means by which ALUC and the local land use jurisdictions prevent the establishment of hazardous obstructions.

Key 2010 JLUS Recommendations

March ARB:

- Ensure that wherever possible, flights be routed over sparsely populated areas so as to reduce the exposure of lives and property to a potential accident.
- Periodically review existing traffic patterns, instrument approaches, weather conditions, and operating practices and evaluate these factors in relationship to populated areas and other local situations.
- Limit, reduce, and control the impact of noise from flying operations on surrounding communities.
- Establish a community forum between the installation and surrounding stakeholders to discuss land use and other issues of concern; these meetings should be held on a quarterly basis.
- Schedule land use planning meetings to provide a forum for agencies to meet and discuss future developments and to address issues that may surface as a result of new proposals. In an effort to further information sharing.
- Provide copies of AICUZ studies to local, county, tribal, and regional planning departments and zoning administrators to aid in the planning process. Also, provide copies of the AICUZ study to appropriate state and federal agencies.

Local Government:

- Recommend local government planners consider AICUZ policies and guidelines when developing or revising city comprehensive plans and use AICUZ overlay maps and Air Force Land Use Compatibility Guidelines to evaluate existing and future land use proposals.
- Ensure that new development applications or "changed use of property" are submitted to March ARB to afford the opportunity to assess those applications for potential impacts on defense missions.
- Recommend zoning ordinances be adopted or modified to reflect the compatible land uses outlined in the AICUZ report, including the creation of military airport overlay zones.
- Recommend local government and county planners establish procedures to consult on land use matters within overlapping extra-territorial jurisdictions near March ARB.
- Recommend local governments review their capital improvement plan infrastructure investments and development policies to ensure they do not encourage incompatible land use patterns near March ARB, with particular emphasis on utility extension and transportation planning.
- Recommend local governments implement height and obstruction ordinances that reflect current Air Force and Title 14 of the CFR Part 77 requirements, presented in this study as Hazards to Aircraft Flight Zones.
- Recommend fair disclosure ordinances be enacted to require disclosure to the public for those AICUZ items that directly relate to aircraft operations at March ARB.

- Recommend local governments, where allowed, require real estate disclosure for individuals purchasing property within noise contours or CZs/APZs.
- Enact or modify building/residential codes to ensure that any new construction near March ARB has the recommended noise-level reduction measures incorporated into the design and construction of structures.
- Recommend government planning bodies monitor proposals for tall structures such as wind turbines and communication towers to ensure that new construction does not pose a hazard to navigable airspace around March ARB. Where appropriate, coordinate with the FAA on height of structures.
- Recommend that local government land use plans and ordinances reflect AICUZ recommendations for development in CZs/APZs and noise zones.
- Recommend that local governments consult with March ARB on planning and zoning actions that have the potential to affect base operations.
- Invite the Air Force leadership to sit on as an ex officio member on boards, commissions, and regional councils addressing long-range development and other planning policies.
- Encourage the development of a working group of city, county, and March ARB representatives to discuss land use concerns and major development proposals that could affect aircraft operations.

5.3 Awareness Topics

The following three awareness topics are drawn from the 18 compatibility factors that were determined not to present significant issues for March ARB or the surrounding communities. These three topics -, air quality, cultural resources, and military housing availability - are offered for awareness and as potential future concerns for either the air base or the surrounding communities.

Air Quality (AQ)

Air quality is defined by criteria air pollutants and hazardous air pollutants that are 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 operational changes and new growth/development at the installation or in the surrounding jurisdictions.

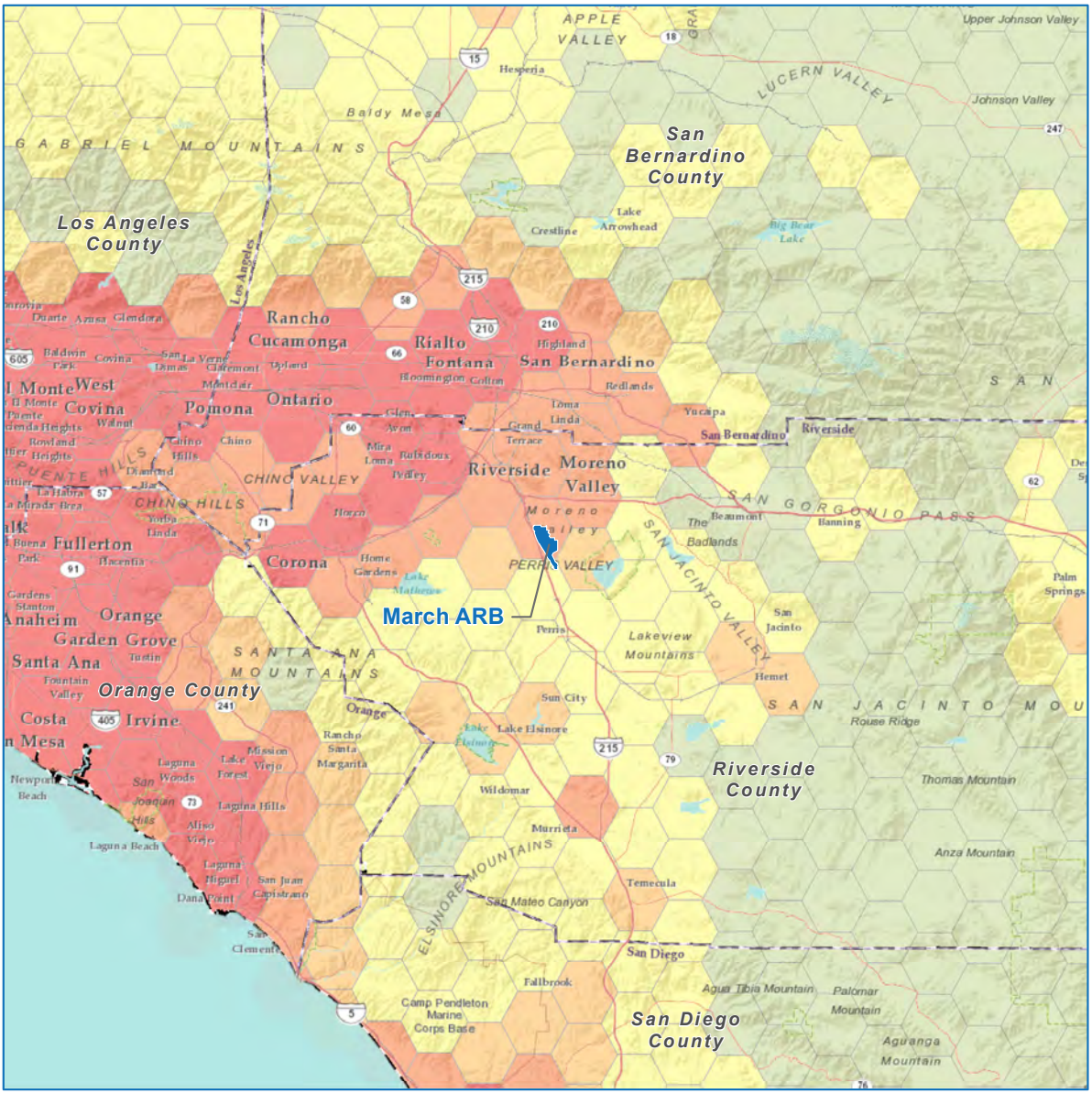
Certain factors can influence air quality in a region. These include the variety of emission sources and types of pollutants emitted, topographic conditions, weather, and other factors. California has unique issues related to attaining and maintaining compliance with both the federal NAAQS and the state California Ambient Air Quality Standards (CAAQS) due to weather patterns and topography (e.g., mountain ranges) that can impede airflow resulting in air pollutants being trapped and causing exceedances of the ambient air quality standards.

Air quality was not identified as having a specific issue during engagement with regional stakeholders, and as a result, there is no air quality compatibility assessment. However, air quality is identified as an awareness issue due to the general concerns and potential impacts to March ARB and the surrounding communities. At certain concentrations, this particulate matter can be harmful to humans and animals if inhaled and strain is placed on the heart and lungs that provide oxygen to the body.

March ARB is located in the SCAQMD, which is classified as non-attainment for the NAAQS and CAAQS standards for ozone and particulate matter 2.5 (PM-2.5) as well as the state standard for PM-10. These non-attainment classifications have the potential to impact future air permitting for new or modified stationary emission sources (e.g., generators, paint booths, etc.) at March ARB. In addition, new mission growth related to mobile emission sources (e.g. aircraft, vehicles, etc.) may be impacted depending on the outcome of a conformity analysis required under the federal CAA.

The region is also identified as marginal non-attainment for the World Health Organization (WHO) guidelines for PM2.5. The average PM levels were between 10.1 and 11.0 micrograms per cubic meter from 1998 through 2016 and are depicted in Figure 5-2. The WHO assesses and rates outdoor air quality in terms of health impacts for the general population. According to the WHO, chronic exposure to particles contributes to the risk of developing cardiovascular and respiratory diseases, as well as of lung cancer.

Figure 5-2 Regional Air Quality Near March ARB.



Legend

Average PM 2.5 from 1998-2016 (micrograms per cubic meter)

- 2.4 - 5.0
- 5.1 - 8.0
- 8.1 - 10.0 Approaching WHO Guideline
- 10.1 - 11.0 WHO Guideline
- 11.1 - 14.0
- 14.1 - 18+

MARCH ARB COMPATIBLE USE STUDY

Source: NASA: Global Annual PM2.5 Grids from MODIS, MISR and SeaWiFS Aerosol Optical Depth (AOD) with GWR, v1 (1998–2016); Esri, 2021.

Matrix

0 5 10 20 Miles

Air Quality (PM 2.5)

Cultural Resources (CR)

Cultural resources are objects, places, and practices that are especially representative of, and/or meaningful to, a specific group of people, their worldview, belief system, or way of life. Cultural resources include pre-contact period and historic-period artifacts, archaeological sites, buildings, structures, districts, and landscapes, as well as historic-period records and photographs. Historic properties are cultural resources that are listed or eligible to be listed on the NRHP and are protected under the NHPA and other federal and state laws. The presence of cultural resources on an installation or in the surrounding jurisdictions has the potential to impact military mission growth and community development. Under the NHPA and associated implementing regulations, federal entities must consider the effects of their projects on historic properties and take action to mitigate negative impacts. The most common mitigation strategy is to avoid the immediate area where historic properties are found, which can limit the amount of land that is available for development, but typically in negligible ways. In some cases, historic structures can be re-utilized or incorporated into new structures. In other cases, the nature and/or location of a proposed project may require alternate siting, and in rare instances, projects may be abandoned altogether to protect important cultural resources. Because the presence of historic properties may constrain or alter development plans, these properties and any needed compliance actions should be identified early in the planning process.

The March Field Historic District (MFHD) is listed on the NRHP under Criterion A for its significance in the area of military history and under Criterion C for architectural significance. The entire MFHD consists of 158 acres and 228 buildings, including administrative buildings, hangars, support facilities, and housing, of which 71 are on March ARB. Currently, a portion of the MFHD is located on March ARB, and a portion is on property owned by the March JPA as a result of past BRAC actions.

Green Acres is a housing area owned and managed by the March JPA and consists of 111 residential homes that are part of the MFHD. Future changes involving Green Acres must be in compliance with the NHPA and NRHP requirements as it is part of the larger MFHD. Because the MFHD is split between the Air Force and the March JPA (or any subsequent entity as the JPA evolves), ensuring the integrity of the historic properties has the potential to become more complicated than it would be under single ownership. It is important that March ARB, the March JPA, and any other involved parties work closely together to ensure the MFHD is maintained in accordance with federal and state requirements.

March ARB has completed an ICRMP and multiple surveys for prehistoric and historic sites. Both archeological resources and historic properties have been identified on the installation. No traditional cultural properties related to Indian tribes have been identified on March ARB. However, 12 tribes have historic relations to land at March ARB and are actively involved during ground disturbing activities on base.

Housing Availability (HA)

There is limited military housing at March ARB. What housing exists is reserved for temporary lodging requirements for military personnel. The March Inn currently has 455 rooms in 10 buildings and 15 houses for temporary lodging. Full-time personnel and their families must compete for available housing options. Due to the transient nature of many military personnel, they may wish to rent properties instead of purchasing. Military demand for off-base homes to purchase and rent is impacting the housing market in the area near March ARB.

The BAH that provides Airmen equitable housing compensation to rent or purchase a home is based on housing costs in local civilian housing markets. Table 5-1 identifies the BAH rates for March ARB personnel.

Table 5.1 BAH Rates for March ARB, 2022.

Grade	With Dependents	Without Dependents	Grade	With Dependents	Without Dependents
E-1	$2,985	$2,433	O-1E	$3,696	$3,117
E-2	$2,985	$2,433	O-2E	$3,750	$3,348
E-3	$2,985	$2,433	O-3E	$3,909	$3,642
E-4	$2,985	$2,433	O-1	$3,180	$2,850
E-5	$3,117	$2,706	O-2	$3,639	$3,075
E-6	$3,645	$2,862	O-3	$3,756	$3,453
E-7	$3,687	$2,985	O-4	$4,095	$3,681
E-8	$3,732	$3,225	O-5	$4,338	$3,705
E-9	$3,855	$3,381	O-6	$4,374	$3,744
WO-1	$3,663	$2,949	O-7	$4,410	$3,801
WO-2	$3,705	$3,222			
WO-3	$3,759	$3,399			
WO-4	$3,891	$3,651			
WO-5	$4,044	$3,693			

Source: *DoD, 2022 (https://www.defensetravel.dod.mil)*

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 stationed at an installation, and the supply of military family housing provided by the DoD.

Basic Allowance for Housing (BAH) refers to a monthly allowance that the military provides personnel who live off base to offset the cost of housing in the public sector. Factors determining the specific BAH provided include pay grade, location, and number of dependents.

Regional housing rental prices and purchasing prices continue to increase in the project study area. Increasing housing rents and prices could present challenges for military personnel and other community members when looking for housing. 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 stationed at an installation, and the supply of military family housing provided by the DoD.

Rising home prices could be a challenge for the community, including military personnel that are currently living in the area, looking to relocate within the area, or relocating to the area from a different region or state. The rising housing prices will continue to be a factor in the overall affordability within the region, which can ultimately impact recruitment and retention for the military and its civilian workforce.

Table 5.2 shows the housing trends for the cities within the study area. As the table shows, the housing selling prices and rents have increased for all cities within the study area within the last three years. These trends show a competitive housing market within the study area, which can continue to drive up prices and create conditions for military personnel and other members of the community to choose to live in areas farther away from the base.

Table 5.2 Median Home Prices and Rents near March ARB

	Median Home Purchase Price			Median Gross Rent		
Jurisdiction	2010	2019	2010 to 2019 % Change	2010	2019	2010 to 2019 % Change
California	$370,900	$505,000	36.16%	$1,163	$1,614	29.23%
City of Moreno Valley	$167,600	$312,000	46.28%	$1,266	$1,636	22.62%
City of Perris	$156,000	$340,800	54.23%	$1,110	$1,300	14.62%
City of Riverside	$228,100	$411,000	44.50%	$1,081	$1,504	28.13%
Riverside County	$227,900	$384,400	40.71%	$1,121	$1,497	25.12%

Source: *2019 American Community Survey 1-Year Estimate, 2010 U.S. Census*

5.4 Compatibility Findings

Anti-Terrorism/Force Protection (AT)

Anti-Terrorism/Force Protection (AT/FP) relates to the safety and security of personnel, facilities, and information on a military installation. The DoD AT/FP standards require that all installation components, such as access gates, adhere to design/planning criteria and minimum construction standards that mitigate vulnerabilities and threats to an installation and its occupants. Important aspects of these criteria and standards include access control and clearance zones around installation perimeters to maintain sight lines and manage access to the installation. Due to current domestic and global conditions, military installations have implemented more restrictive standards to address AT/FP concerns. These measures may vary based on daily activities and include increased security checks and/or the creation of physical barriers at entry points (e.g., gates, spike barriers, tire shredders).

Key Terms

Antiterrorism. Defensive measures used to reduce the vulnerability of individuals and property to terrorist acts, to include limited response and containment by local military and civilian officials.

Controlled perimeter. A physical boundary at which vehicle access is controlled with sufficient means to channel vehicles to the access control points. At a minimum, access control at a controlled perimeter requires the demonstrated capability to search for and detect explosives.

Clear Zone. Areas commonly associated with perimeters that are free of all obstacles, topographical features, and vegetation exceeding 8 inches in height that could impede observation or provide cover and concealment of malicious intent.

Force Protection. Preventive measures taken to mitigate hostile actions against DoD personnel (to include family members), resources, facilities, and critical information. Force protection does not include actions to defeat the enemy or protect against accidents, weather, or disease.

Installation Perimeter. A demarcation identifying the limit of DoD property and directly or indirectly indicating that unauthorized access is prohibited. The landside perimeter may be established with fences, walls, signage, natural barriers, or other means.

Setback. Local government zoning requirement which establishes by code the minimum distances from front, side, and rear property lines where building structures are not permitted to be constructed.

Uncontrolled Public Access. Spaces within and beneath buildings where there is insufficient positive access control to preclude unauthorized access. For the purposes of these standards, positive access control will be considered to include, but not be limited to, electronic access control on all exterior doors or personnel controlling visitor access.

Unobstructed space. Space around inhabited buildings in which there are no opportunities for concealment from observation of explosive devices in areas of no less than a 6 inch by 6 inch by 6-inch cube.

Technical Background

Antiterrorism (AT) Standards authorize commanders at all levels to enforce security measures at their will and are charged with the responsibility of the protection of persons and property under their control. As such, numerous Unified Facilities Criteria (UFC) guidance publications outline various fencing and security measures appropriate for military installations. The following are UFC criteria applicable to security engineering:

- 4-022-01 Security Engineering: Entry Control Facilities/Access Control Points, 2005
- 4-010-01 DoD Minimum Antiterrorism Standards for Buildings
- 4-020-01 Security Engineering: Facility Planning Manual
- 4-022-02 Security Engineering: Design and Selection of Active Vehicle Barriers
- 4-022-03 Security Fences and Gates
- 3-530-01 Design: Interior, Exterior Lighting, Security Lighting, and Controls

The Military Handbook (MIL HNDBK 1013/10) Design Guidelines for Security Fencing, Gates, Barriers, and Guard Facilities indicates that installations should use signage at 200-foot intervals on the exterior installation fencing to inform and warn potential trespassers that there is a U.S. military installation at the specified location. All military services recognize the importance of a secured installation; however, only the U.S. Navy has published specific guidelines for the installation of warning/no trespassing signs.

AT-1

There are concerns about development next to or along the March ARB security perimeter fence line. (See also PT-1)

Physical development of large warehouses and other tall structures directly along the perimeter of March ARB presents security challenges to Air Force security requirements. Current setbacks and building height restrictions for new construction along the boundary of the air reserve base may not be compatible with air installation security requirements.

Compatibility Assessment

Encroachment can take a variety of forms. For this finding, building form and property setback requirements constitute the primary issues. Tall structures built in close proximity to March's security fence can provide advantages for surreptitious activities, such as surveillance or malicious attacks against base personnel. Additionally, massive structures such as warehouses or distribution centers can block security cameras and security forces' line of sight when conducting routine patrols along the installation boundary.

There is a potential for future growth in surrounding communities to encroach on the boundaries of March ARB. Encroachment is generally understood as ground-level horizontal development and use of land near military facilities; however, encroachment can also take a more vertical form in the development of taller buildings or exist via proximity of structures due to an increased intensity of activity immediately adjacent to military installations and access control points.

Under the March JPA Development Code, commercial and industrial sites are subject to the following rear setbacks.

Section 9.04.040 Commercial Site Development Standards. There is no specific standard rear property setback established, and structures can be built on the property line. One special setback for commercial abutment to residential areas that would be effective for March, if modified and adopted, is based on this rule: "Wherever a lot in any commercial district abuts a lot in any residential district, a minimum setback equal to the building height, but not less than 10 feet shall be required." For industrial properties, the setback rule is that "structures shall be constructed on the property line or a minimum of 3 feet from the property line." A second rule allows for building heights up to 80 feet, subject to FAA Part 77 clearance if the setback is at or greater than the proposed height. If the second rule is enforced, the angle of visibility from the top of a structure's roof to March's fence line would be 45 degrees.

DoD sets installation AT/FP standards for internal and external setbacks, or required buffers. The standoff, or setback, standards for the perimeter fence on a military installation are a minimum 30-foot inside standoff distance for internal buffers, if a minimum 50-foot external buffer outside the perimeter security fences exists. The internal buffer requirement is 50 feet if the external buffer is less than 50 feet.

AT-2

Transfer of Green Acres from March JPA to private commercial property presents a force protection risk for unvetted individuals to gain access or conduct surveillance/data collection

The potential future transfer of Green Acres to private commercial interest presents an unusual force protection concern and potential risk for March ARB. Currently, the base perimeter security fence follows a gerrymandered path that divides this contiguous historic district between JPA-managed properties and installation facilities including headquarters facilities. The effectual subdivision of Green Acres from the historic March Field district presents a unique security challenge as the recommended minimum standoff distances for an external buffer cannot be achieved without the demolition of existing structures.

Compatibility Assessment

The Green Acres neighborhood, formerly March AFB military family housing, is a gated property managed by March JPA as Green Acres Rental Homes. Residents are currently vetted following Fair Housing Laws for personal identification, credit and criminal background checks, and verification of employment. The vetting process requires two forms of identification, including social security number, tax, credit and employment information, and requires a minimum credit score of 625 for obtaining residency in this gated community. In effect, the current gated community and vetting of residents provide an additive security buffer to the March ARB security perimeter within the March Field historic district.

Management and occupant stability mitigate the risk related to the perimeter of the Base adjoining the Green Acres property. The JPA has a two-year waiting list for Green Acres. Excellent customer service and property management leadership by a single owner controlling the entire project consistent with the historical preservation requirements is attributable for the stable occupancy. It is important to note that the JPA residents are long-time occupants of existing historical homes with an average occupancy rate of 15 years. The longest resident, a military veteran, has resided in Green Acres for more than 23 years. More than half of current residents are affiliated with the military (active duty/guard/reservists/military veterans); remaining homes are occupied by working professionals including healthcare (nurses and doctors) and administrative professionals (government and labor workers).

NOTE: In March 2023, the MJPA voted to retain ownership of the Green Acres community and work with March ARB on a military housing program. This strategic action by MJPA negates the potential of real property transfer to private ownership in this finding.

Changing Environment (CE)

The effect of the changing environment, both physical and environmental changes, presents shared challenges for a region, requiring the need for adaptation and mitigation strategies. It is critical for community and military leaders to be aware of and prepare for such changes to implement measures that minimize adverse impacts on development, military readiness, and overall quality of life.

Key Terms

Climate Adaptation. The process of adjusting to the effects of the changing climate.

Changing Environment. Changes in the earth's environment, including the atmosphere, as a result of natural ecological processes and human activities.

Greenhouse Gases. Gases emitted into the atmosphere that trap reflected solar heat.

Groundwater. Water found underground in cracks and spaces among soils, sand, and rocks.

Radiative Forcing. Positive radiative forcing results when solar heat reflected by the earth's surface is trapped by greenhouse gases and temperatures in the atmosphere increase.

Resilience. The condition or capacity of a system and its components to absorb and recover from the effects of a disruptive hazard or threat.

Soil Liquefaction. Liquefaction occurs when saturated soils experience stresses such as movement and pressure associated with earthquakes that undermine soil integrity and cause soils to behave like liquids.

Soil Saturation. Saturation occurs when soil pore spaces are completely filled with water, reducing the soil's structural integrity.

Technical Background

The environmental changes that are occurring across the globe are related to shifts in temperatures and weather patterns. While the exact causes of these changes are not fully understood, a combination of natural cycles and human activities is considered the likely drivers. The buildup of greenhouse gases, including carbon dioxide, methane, nitrous oxide, and fluorinated gases, causes solar heat to be trapped in the atmosphere instead of radiated back into space. Changes in the earth's climate that result in cooling or heating of the atmosphere, land, and oceans are referred to as radiative forcing.

Carbon dioxide emissions are the primary human drivers of the changing environment, accounting for nearly 80% of U.S. greenhouse gas emissions in 2020. Primary carbon dioxide emitters in the U.S. are listed below:

- Transportation activities
- Electric power generation
- Industrial processes
- Residential and commercial activities
- Other non-fossil fuel combustion

The military has identified multiple threats and hazards to military installations as a result of conditions due to environmental changes:

- Temperature extremes
- Precipitation extremes
- Extreme weather, including hurricanes, tornados, and other intense storms
- Flooding, including riverine, coastal, and flash floods
- Sea level rise
- Land degradation, including excessive soil erosion and desertification
- More frequent and intense wildland fires
- Drought conditions
- Increased energy demand

The long-term prognosis indicates that conditions causing the changing environment, such as increasing temperatures and extreme weather patterns, are likely to continue without aggressive measures to reduce greenhouse gas emission sources and mitigate the associated impacts. Efforts are underway at federal, state, and local levels, including military installations and communities, to identify and implement actions to adapt to the changing environment to increase resiliency and reduce the impacts of threats and hazards.

Rising groundwater impacts existing facilities and the design and construction of new facilities on March ARB.

CE-1

The rising groundwater table has the potential to impact existing facilities/infrastructure on March ARB. This includes impacts to the airfield runways and related facilities. In addition, new designs and construction projects must account for impacts such as saturated soils that create significant technical, budget, and schedule challenges (see also WQQ-3).

Compatibility Assessment

In recent years, groundwater levels under March ARB and in the immediate surrounding area have risen above historic normal levels. The groundwater levels in the area have been rising at varying rates of up to three feet, annually. The specific causes of rising groundwater levels are not fully understood, although there are several potential reasons:

- Reduced groundwater pumping in the region partially due to change in land use
- Seepage of water from the Lake Perris Dam
- Limited groundwater outflow in the area

As a result of the rising levels, installation development activities, such as new construction and maintenance and/or the renovation of existing facilities and infrastructure, may face challenges associated with high water tables. One of the more serious concerns is the potential for soil liquefaction created by soil saturation.

Soil saturation can occur when the space between soil particles fills completely with water. The soil becomes fully saturated, and the strength of the soil structure decreases, resulting in a compromised soil foundation. Existing building foundations, no longer fully supported by stable ground, may crack and fail. In addition, existing infrastructure such as roads, flood channels, and utilities may be impacted by increased pressures causing them to move or float and eventually crack and deteriorate. When earthquakes occur in areas where soils are completely saturated, soil liquefaction may occur as shown in Figure 5-3, and the impacts can be greatly exacerbated with catastrophic results, including building collapse.

Short of soil liquefaction, rising groundwater can create other serious issues for facilities, including water intrusion through foundations and into voids, shifting pipelines, and similar impacts for underground infrastructure.

March ARB recognized the potential for liquefaction due to intense ground shaking. In 2016, the installation reported that normal construction methods, such as remedial grading and shallow foundations, could mitigate this risk.

New construction, when encountering unusually high groundwater levels and/or polyfluoroalkyl (PFAS), can be impacted by both project delays and increased costs. The degree to which facility designs must account for high water tables depends on several factors. Foundation load-bearing capacities must be considered to ensure safe facilities can be built. Simple construction techniques such as dewatering or increasing grade elevations may need to be employed in minor cases, while in more severe situations, below-grade, deep-pile foundations may be required to overcome challenges.

There are typically three primary alternatives when dealing with high groundwater levels and new construction:

- Avoid building sites with high groundwater
- Apply the required engineering and design specifications to overcome the problem
- Lower the groundwater levels

In 2010, the Eastern Municipal Water District and Western Municipal Water District completed a joint feasibility study to assess groundwater resource opportunities in and around March ARB. The intent was to determine the feasibility of using the available groundwater as an additional potable water source to lower the water table and alleviate rising groundwater impacts. In 2020, the Eastern Municipal Water District initiated the $90 million Perris North Groundwater Program with multiple goals:

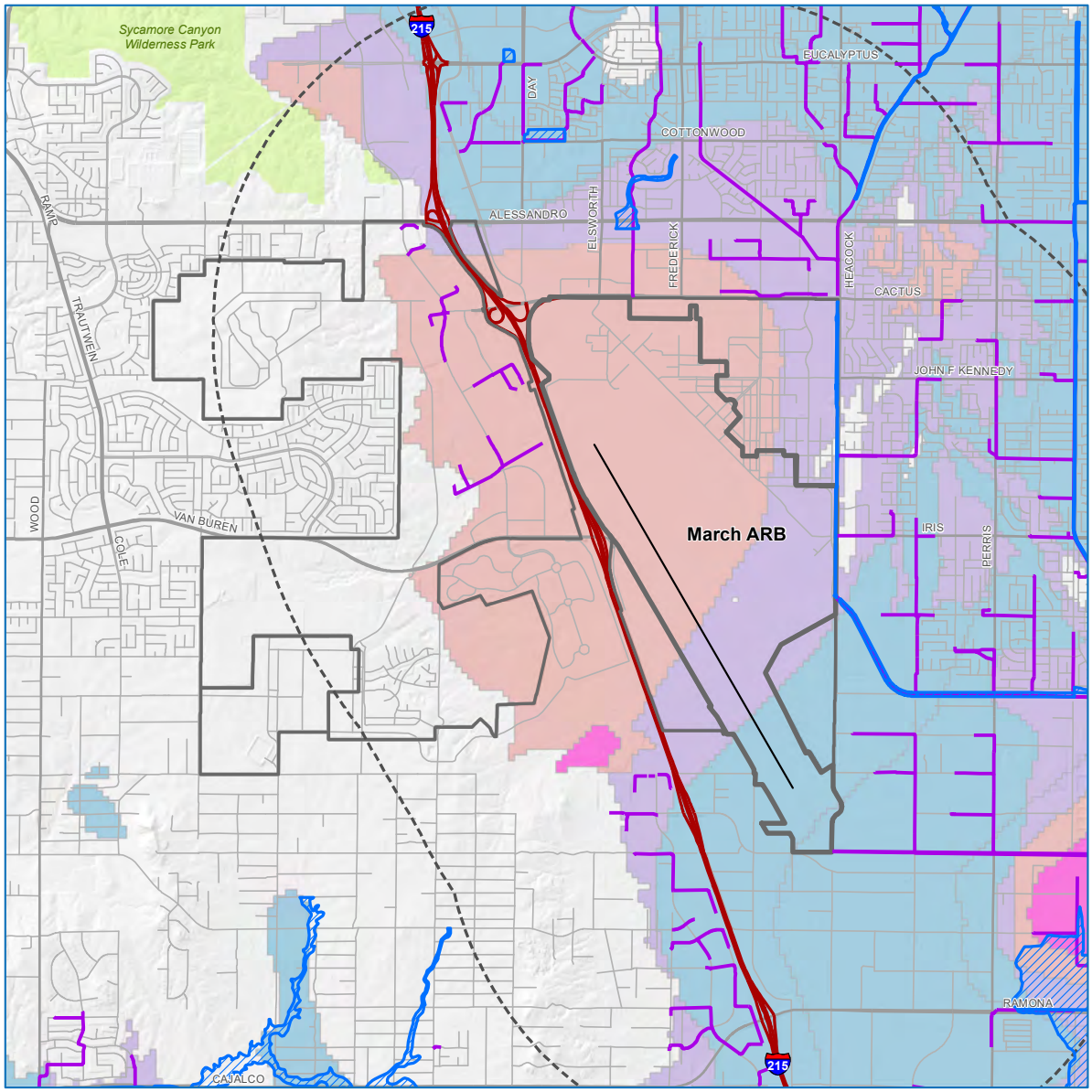
- Remediate contamination in the Perris North Groundwater Sub-basin.
- Protect non-contaminated portions of the sub-basin.
- Develop an alternative source of potable water for the Western Municipal Water District and March ARB.
- Reduce rising groundwater levels under March ARB and the immediate region.

When fully operational in 2023, the project will employ six groundwater extraction wells, two water treatment facilities and associated monitoring wells, and equipment to pump water from the sub-basin. Approximately 7,000 acre-feet of groundwater will be pumped annually, which may result in reduced groundwater levels under the installation.

In a separate effort, the CDWR has undertaken the Lake Perris Seepage Recovery Project to collect and distribute water currently seeping out of Lake Perris near the dam. The draft Environmental Impact Report notes that the local groundwater levels, including in the Perris North Sub-basin, have risen approximately 100 feet since Lake Perris was placed in operation in 1978 as part of the California State Water Project (SWP). The plan is to install six seepage recovery wells south of the Lake Perris Dam and deliver the collected water to the Colorado River Aqueduct for use as potable water. One of the goals of the project would be to reduce any unintended recharge of the Perris North Groundwater Sub-basin. This, in turn, may potentially alleviate the rising groundwater directly below March ARB and the surrounding area.

Rising groundwater below March ARB is causing and will continue to cause impacts to installation operations. Ongoing maintenance and repair of existing facilities and infrastructure will likely increase in frequency and cost as a result. In addition, new installation development will be impacted by having to account for higher water tables during the design and construction of required projects. Rising groundwater is a current and ongoing concern for present and future construction.

Figure 5-3 Liquefaction



Legend

Liquefaction Susceptibility
- Very High
- High
- Moderate
- Low
- Very low

- Riverside County Flood Control Facility Lines
- 100-year Flood Zone
- March Air Reserve
- March ARB 2 Mile Buffer
- March Joint Powers

- Interstate
- Highway/Expressway
- Major Road
- Local Road
- Airport Runway
- Major Park

MARCH ARB COMPATIBLE USE STUDY

Source: Riverside County, 2021; Earth Consultants International.

Matrix

0 ½ 1 2 Miles

Liquefaction

Communication/Coordination (COM)

Communication/coordination (COM) refers to programs, plans, and partnerships that promote interagency communication and coordination, as well as the dissemination of information to the public and other stakeholders. Interagency communication serves the general welfare by promoting a comprehensive planning process inclusive of all stakeholders. Interagency coordination also supports the development and inclusion of mutually beneficial policies for local communities and the military in local planning documents, such as comprehensive plans. Providing relevant and timely information to the public keeps residents and other stakeholders informed of activities and instills confidence and support.

Key Terms

Memorandum of Agreement/Understanding. A memorandum of agreement (MOA) or memorandum of understanding (MOU) is an agreement between parties to cooperatively work together on an agreed upon project or meet an agreed upon objective.

Air Force Community Partnership Program. The AFCP Program is a framework through which installation and community leaders can leverage their unique capabilities to enhance mission performance, reduce costs, and improve quality of life.

COM-1

Formalized communication is limited between March ARB and regional planning entities.

There are no formalized communication protocols or official standing forum for March ARB and the communities/agencies around the installation to identify, communicate, and coordinate on topics of interest to all parties. March ARB currently works individually with local communities/agencies on an as-needed basis. As issues arise, communication and coordination are handled on a case-by-case basis through the exchange of emails, phone calls, or other methods between March ARB and the jurisdiction/agency representatives. Lack of a formalized communication/coordination process increases the likelihood of missed opportunities and risks dealing with issues "late to need" or "after the fact."

Compatibility Assessment

The cities, the county, and the military installation in the study area use informal means of communication to coordinate and share information about activities based on individual staff knowledge, experience, and professional network. This professional network is personality based, not organizationally based. As such, there are no established memoranda of agreement or written protocols that outline communication practices. Additionally, informal communication is discretionary; therefore, there is potential for incompatible development to occur if such developments are not communicated in advance and if March ARB is not included in the review of development plans. Establishing formal communication practices could allow stakeholders to collaborate regarding military activities and needs regardless of position or personal relationship and would ensure greater consistency in communication and collaboration.

The lack of established communication protocols can have numerous negative impacts, including overlooked or neglected development application reviews that could lead to incompatible land development or an ill-informed public review process. Surrounding communities and government staff may not always understand the issues that are particularly relevant to March ARB. Additionally, there can be inconsistency for when each of the military installations should be consulted regarding the potential for compatibility issues. Likewise, local government and the public should be notified when events or other unusual base activities occur and when these activities may impact residents in terms of noise and vibration nuisance, traffic congestion, public health, or viewshed considerations. Public notification can be facilitated through the establishment and application of formalized communication protocols.

Formalized communication processes would set clear roles and responsibilities for how and with whom to communicate at communities and March ARB when compatibility issues and concerns arise related to community growth, or when changes in military operations or planning may impact surrounding communities.

Presently, outside of NEPA requirements, there is no standing forum dedicated exclusively to local and regional planning coordination and communication between March ARB and surrounding communities. This issue was noted as a finding in the 2018 AICUZ as well.

Having an established forum for planning and partnership would provide a collaborative venue for military leadership to provide information to community leadership, and in turn, for community leadership to provide information to the military to include long-range planning discussions on land development and capital projects in the region. Such a venue would also promote a greater understanding of mission sustainment challenges to March ARB and how the Air Force could promote partnership with surrounding communities. March ARB is routinely invited to attend ALUC Technical Advisory Committee (TAC) meetings and ALUC meetings however, these meetings are focused on development application reviews, and do necessarily provide a venue for holistic coordination on related matters, such as installation resiliency issues. Potentially the ALUC forums could be better leveraged to enhance coordination between the installation and surrounding communities.

The AFCP program offers a holistic approach to address the full range of compatibility and resiliency issues, such as discussed in COM-5 below. The SAF/IE created a centralized program to promote the idea of partnerships, support installations and communities as they pursued collaborations, and develop policy that furthers these objectives.

Over the years, the AFCP program has evolved to meet the ever-changing needs of our environment. Community partners have confronted challenges ranging from infrastructure, base operational support, cooperative purchasing, education, public safety, energy, and natural resources to health care, recreation, transportation, and workforce development. This partnership program has a structured process for:

- Identifying requirements
- Liaising with collaborators
- Formulating a course of action
- Troubleshooting legal and policy obstacles
- Executing a course of action and maintaining partner relationships

The following are examples of communication that occurs between other installations and communities for routine visibility and general information sharing of a holistic range of partnerships.

- Joint Base San Antonio Public-Public, Public-Private Partnership (P4) Meeting
- Monterey Bay Defense Alliance
- Wright-Patterson Regional Council of Governments

Tyndall AFB established five partnerships following Hurricane Michael in 2018.

COM-2

Leadership rotation in key organizations can create strategic communication gaps.

Leadership changes at the installation level at March ARB and with the directors of the ALUC, the March JPA, and MIPAA can impact the relationship between these organizations and affect positive communication, which can, depending on timing, also affect development application reviews.

Compatibility Assessment

Military installation level leadership at March ARB rotates on a two-year cycle during the summer command rotation cycle. Leadership changeovers can change priorities and impact organizational relationships, either positively or negatively. There is concern that sometimes these leadership changes, can affect the responsiveness to community development review requests and impact the ALUC review process overall.

COM-3

March ARB is required to route proposed installation responses for development reviews through its parent headquarters at AFRC at Robins AFB, Georgia.

The requirement to route proposed development application review through its parent headquarters may delay response to the review request, thus, not allowing for formal March ARB review and comment to be considered in a timely manner.

Compatibility Assessment

Unlike active-duty Air Force bases, March ARB has a requirement to route all development reviews to AFRC at Dobbins AFB. This can create staffing delays as it adds another level of bureaucratic staff review to the local development review process. This challenge can be addressed in a variety of ways, but local empowerment of the installation command to conduct reviews should be considered. This concern was not noted in the 2018 AICUZ.

COM-4

Formalized communication is limited between March ARB and the Eastern Municipal Water District.

March ARB has minimal communication/coordination with the Eastern Municipal Water District. While the Eastern Municipal Water District does not provide services directly to the installation, they are very closely involved with projects and actions that directly impact the installation mission essential operations. In some cases, the Eastern Municipal Water District is in close partnership with agencies, such as the Western Municipal Water District, that directly support March ARB. The lack of a formal communication/coordination process with the Eastern Municipal Water District increases the potential for impacts on March ARB activities.

Compatibility Assessment

The Eastern Municipal Water District borders March ARB to the north, east, and south of the installation boundary. The water district does not currently provide any services directly to March ARB. The Western Municipal Water District, located to the west of the base, provides both potable water and sanitary sewer services for March ARB. Because the Western Municipal Water District provides critical services for the base, effective lines of communication and coordination have been established between the base and the utility. Similar lines of communication and coordination do not currently exist between March ARB and Eastern Municipal Water District.

The Eastern Municipal Water District undertakes various projects and provides water and sanitary sewer services for communities surrounding March ARB on three sides. The Eastern Municipal Water District also supplies wholesale water to various organizations, including the Western Municipal Water District to help ensure adequate supplies for their customers, including March ARB.

Currently, the Western Municipal Water District has one water main supplying March ARB from the west side of the installation. In order to improve potable water resiliency for the base, the Western Municipal Water District is working to leverage the Eastern Municipal Water District's existing facilities and infrastructure to add an additional water service line to March ARB. The intent is for the availability of potable water service from the east side of the installation.

Recently the Eastern Municipal Water District has undertaken the Perris North Basin Groundwater Program. The district is taking action to prevent the spread of contaminants in the aquifer, accelerate the cleanup of existing contamination and protect the aquifer for continued use as a water source. The program has several goals including two that directly affect March ARB:

- Develop a local source of water that will provide a secondary source of potable water for March ARB via the Western Municipal Water District, increasing installation resiliency
- Mitigate the ongoing problem of rising groundwater under and around March ARB, which has a significant impact on installation facilities, infrastructure, and development

There are other areas of interest between March ARB and Eastern Municipal Water District, including:

- Investigation of PFAS groundwater contamination from historic firefighting operations at March ARB that has the potential of impacting Eastern Municipal Water District groundwater wells
- Potential impacts to the existing Air Force groundwater cleanup along the eastern boundary of the installation from the Perris North Basin Groundwater Program

The information mentioned above makes it clear that there are multiple areas of mutual interest/concern that involve March ARB and the Eastern Municipal Water District. While informal communications or project working teams occur, establishing formal lines of communication and coordination between the base and the Eastern Municipal Water District would be beneficial to both organizations to ensure an efficient/effective exchange of relevant planning information and to avoid miscommunication that has the potential to impact the operations of both the base and water district.

In addition, while March ARB and the Western Municipal Water District may have good lines of communication and coordination that exist informally, it is important that those relationships be formalized via a MOU or similar document to ensure long-term viability.

COM-5

Post March JPA Sunset Communication with March ARB.

The March JPA currently functions as the liaison agency for March ARB on development review requests. With the anticipated sunset of the March JPA and transition of authority back to the conferring local governments, there is concern that future development on former Air Force property currently under the March JPA may not be adequately communicated with the installation.

Compatibility Assessment

The March JPA is currently preparing to initiate active planning for the dissolution of the March JPA and return its jurisdictional planning authority back to the local governments, which conferred this authority to the March JPA upon its establishment. The expressed concern is that dissolution will eliminate this liaison function unless specific liaison roles are established with either the ALUC or MIPAA. Although the MIPAA was established by March JPA, it will continue its port authority role on the joint use airfield and assume the authority for any subsequent airfield JUA. The MIPAA will also retain oversight of the March Air Museum. The ALUC's state and county authority will not be affected by sunset of the JPA. Both the ALUC and MIPAA will maintain routine communications with March ARB after the March JPA sunset but have varying roles and responsibilities that may not fully account for all issues related to liaison with the surrounding communities and governments.

This concern is directly related to the proceeding five communications factor assessments. Any future liaison role should address the related communications issues.

Frequency Spectrum Interference/Impedance (FSI)

Frequency spectrum refers to 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.

Key Terms

Airport surveillance radar. Referred to ASR, this radar is deployed at certain airports to detect, identify, and visually display the spatial location of aircraft operating in the airspace around the airfield, assisting ATC to maintain safe flight conditions.

Frequency impedance. Impedance is the interruption of electronic signals due to the existence of a structure or object between the source of the signal and its destination (receptor). Certain structures have the potential to block or impede the transmission of signals from antennas, satellite dishes, or other transmission/reception devices affected by line-of-sight requirements.

Frequency interference. Interference is the inability to effectively distribute or receive a particular frequency because of competition for the same or similar frequencies. As the use of the frequency spectrum increases, such as with the rapid advances in cellular phone technology and cellular phone usage over the last decade, and as development expands near military installations and operational areas, the potential for frequency spectrum interference increases.

Frequency spectrum. The frequency spectrum is the entire range of electromagnetic frequencies used for communications and other transmissions, which includes communication channels used for radio, cellular phones, and television.

Radio altimeter. Radio altimeters are a type of avionic equipment used by pilots to accurately determine aircraft altitude, especially during low-altitude operations. Radio altimeter technology is sometimes referred to as radar altimeter.

Technical Background

The DoD's use of frequency spectrum supports safe operations and the effective delivery of weapons. The DoD's frequency spectrum needs for testing, evaluation, and training are constantly increasing, while the spectrum available for DoD use is decreasing. The National Telecommunications Industry Association Office of Spectrum Management explains that:

> *...almost every agency of the Federal Government uses the spectrum in performing mandated missions. The DoD uses the spectrum extensively for tactical uses and non-tactical uses. In the United States, tactical uses are generally limited to a number of specific testing sites and training facilities, but DoD's non-tactical applications are extensive and include aircraft command and*

control, mobile communication in and around military bases, and airfields and long-distance communications using satellites.

Frequency interference is related to other transmission sources. Interference can result from several factors, as listed below:

- 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
- Industrial sources that produce electronic noise by-product

The military relies 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, promoting the development of new telecommunications technologies, products and services. The expanding public and commercial use of the frequency spectrum, from wireless transmitters to consumer electronics, can encroach on the military's use of the frequency spectrum. Increasing community and DoD demands for this important resource can create conflicts for all users.

FS-1

Implementation of 5G cell phone service in the airfield vicinity may impact flight safety.

There is a concern that the new 5G cell phone service may cause interference with aircraft radar altimeter readings. This poses a flight safety hazard, especially during instrument landings. In addition, there is a possibility that 5G may also impact the ASR systems at March ARB.

Compatibility Assessment

March ARB has expressed concerns for flight safety in relationship to new 5G cell phone technology operating in the vicinity of the installation's airfield. There are two specific concerns that flight safety personnel raised during stakeholder interviews:

- Potential interference with aircraft radio altimeter functionality
- Questions regarding potential impacts to the ASR

Radio altimeter interference from 5G communications, specifically C-Band interference, is a documented aviation safety risk. Interference from 5G communications involving towers in the vicinity of airports can interfere with radio altimeters. The potential interference is primarily related to the relative closeness of the frequency spectrum used by 5G cell service (3.7-3.98GHz) and aircraft radio altimeters (4.2-4.4 GHz). This presents a particular risk to aircraft control systems that are reliant on radio altimeters. The C-17 currently operated by the 452nd AMW at March ARB, and the soon-to-be-fielded KC-46A depend on radio altimeters to conduct their flight missions safely. Modern aircraft radio altimeters transmit a continuous radio wave from the aircraft to the ground using frequency-modulated continuous-wave (FMCW) radar. The distance to the ground, or altitude of the aircraft, is determined by the size of the shift in the signal's frequency from the returning signal. Radio altimeters are essential during autopilot landings. They are also effective during low visibility conditions when the pilot's ability to see the ground is limited and during other low altitude operations.

To date, the FAA has not documented any specific threats to ASR from 5G cell phone operations. In the U.S., ASR is operated at a frequency of 2.7-2.9 GHz, making the potential for interference less likely due to the wider separation of the ASR and 5G cell phone frequencies.

The FAA is actively working with both the aviation and communications industries to mitigate risks by retrofitting aircraft with improved radio altimeters that filter out 5G spectrum interference and by limiting full 5G infrastructure implementation near priority airports until this risk can be fully mitigated. The FAA has issued a Notice to Air Missions to advise pilots when using certain airports to use alternative methods of compliance for any aircraft not cleared for operation in 5G environments. The FAA has also issued AD for airplanes equipped with a certain flight control system. This AD was prompted by a determination that radio altimeters cannot be relied on to perform their intended function if they experience interference from wireless broadband operations in the 3.7-3.98 GHz frequency band (5G C-Band), and a recent determination that, during the approach, landings, and go-arounds, certain airplane systems may not properly function as a result of this interference, resulting in increased flight crew workload while on approach with the flight director, auto throttle, or autopilot engaged. These demands could reduce the ability of a flight crew to fly and land an aircraft safely. This AD requires revising the limitations and operating procedures sections of the existing AFM to incorporate specific operating procedures for ILS approaches, speed brake deployment, go-arounds, and missed approaches when in the presence of 5G C-Band interference.

Land Use (LU)

Land use planning and regulation issues from the government's responsibility to protect public 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. For instance, industrial uses are often separated from residential uses to avoid impacts from noise, odors, and lighting. Land use separation also applies to properties with similar uses where the use of one property may nevertheless adversely impact the use of another.

Key Terms

Air Installation Compatible Use Zone study. AICUZ studies explore issues of encroachment, public safety and welfare related to military air installation operations.

Accident Potential Zone I. APZs and CZs correspond to areas adjacent to airfields where the potential for aircraft accidents is highest. APZ I begins at the end of each CZ. This area has a lower potential for aircraft mishaps in comparison to the CZ, and therefore, less prohibitive development restrictions are recommended. Residential and other uses that congregate people are still not recommended.

Accident Potential Zone II. APZ II begins at the end of each APZ I. This APZ can also be curved, as flight patterns are taken into consideration during zone identification. The potential for aircraft mishaps in the APZ II is lower than in the CZ and in APZ I, with some additional development types allowed.

Clear Zone. The CZ is the area with the highest statistical potential for an aircraft mishap. As the name implies, the DoD recommends that this area be kept clear of all development or structures.

Encroachment. In terms of compatibility, encroachment refers to the development of conflicting uses of land, air, water, and other resources that may individually or cumulatively impact the military's ability to carry out its testing and training mission. This may include private development being built near a military installation, whether or not it is within a specific military operational footprint that may be related to noise or safety.

Floor-to-Area Ratio. Ratios that are established by a zoning regulatory authority to guide building form on a particular property parcel.

Technical Background

It is important that current and planned land uses around the military installation are compatible to prevent impacts on residents in nearby communities and to ensure that the military mission is not constrained by nearby development, particularly along military installation boundaries. As outlined in Chapter 4, the vicinity around March ARB is increasingly more populated and urbanized within cities and unincorporated portions of the county near the base. Chapter 4: Community Overview summarizes the current and future growth (population, housing, and employment) anticipated within these communities and portions of Riverside County.

In this Study, land use, per se, is not the major concern. With a few notable exceptions outlined here, land use around the March ARB installation is dominated by limited manufacturing, wholesale trade, and warehousing and is consistent with AICUZ recommendations and ALUCP planning guidance. Development applications within the municipal airport or AICUZ overlay districts receive a thorough review by planning or development departments within their respective development codes, with subsequent review by the ALUC for consistency with the ALUCP. This provides a two-step review process for ensuring development consistency within adopted standards for the vicinity around March.

Of concern, however, are the potential types of uses and possible intensity of buildings and facilities around the base. The warehouses and distribution centers around March are among the largest structures in the world, as measured by the structure footprints. This increased density and form can also induce a higher level of activity around these

predominantly urban, light industrial, and heavy commercial facilities, which could present public safety and/or force protection and security concerns, as well as exacerbate existing traffic congestion near military access control points.

Current DoD-recommended zoning standards do not address the mass of structures, nor their proximity to installation boundaries. DoD standards only address vertical height (FAA Part 77 and Federal Aviation Regulation). This issue is addressed in AT-1 and LU-2.

Riverside County ALUCP does not fully identify aircraft safety zones for Runway 12-30.

LU-1

The 2014 ALUCP for March identifies Runway 12-30 as a 3,000-foot, B-1 small runway rated at 12,500 lbs. and primarily for small single- and twin-engine aircraft. The ALUCP also notes that the runway's 1,000-foot CZs do not extend off Air Force property. No aircraft APZs are identified or mapped for this runway in the ALUCP.

Compatibility Assessment

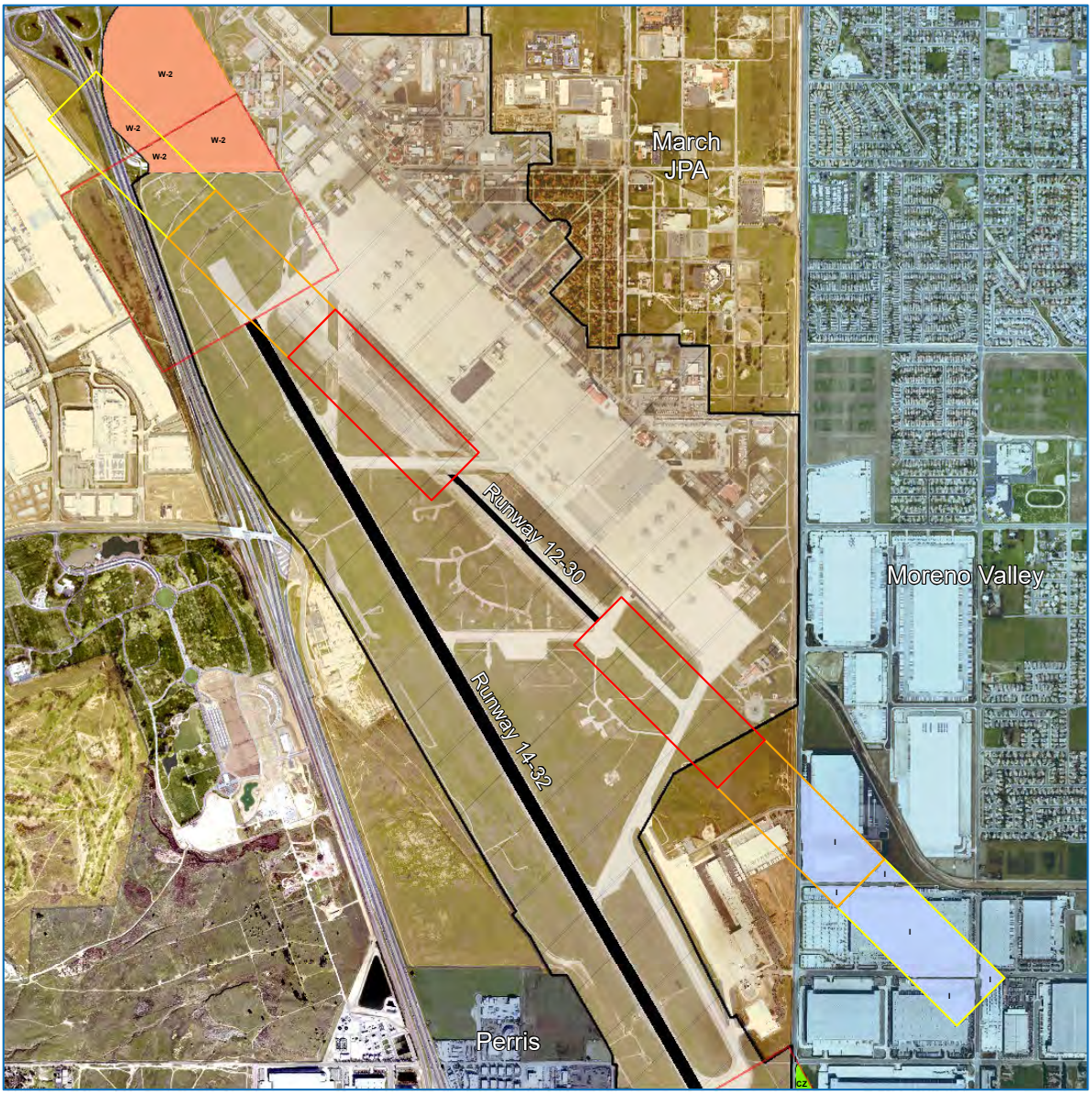
APZs are identified for Runway 12-30 in Figure 5.4, Runway 14 in Figure 5.5, and Runway 32 in Figure 5.6. There are two APZs that cover airspace outside the airfield installation boundary. On the north end of the runway as shown in Figure 5-5, APZ II overlays small areas of the City of Riverside, the City of Moreno Valley, March JPA, and the right of way for I-215. No specific compatibility assessment is provided by the 2018 AICUZ for this area. It should be identified as compatible with restrictions.

On the south end as shown in Figure 5-6, the CZ, APZs I and II overlay an area of the City of Perris – the 2018 AICUZ indicates developed areas here as "compatible with restrictions," referring to land use and FAR recommendations in Appendix A of the AICUZ, which are applied by the city. Areas within APZ I and APZ II in the City of Perris are predominantly zoned industrial.

Within APZs I and II, zoning is in alignment with 2018 AICUZ recommendations with appropriate development FARs established within respective municipal codes. As shown in Figure 5.5, the area within APZ I and II in Moreno Valley is zoned business park or industrial. The areas within APZ I in the City of Riverside and March JPA are controlled development areas. All areas are within the ALUCP airport zone and require ALUC review.

March ARB has targeted Runway 12-30 for capital improvements, including the potential extension of the runway to 5,000 feet.

Figure 5-4 Runway 12-30 Safety Zones



Legend

Moreno Valley Zoning Code
- Industrial (I)
- Open Space/Park (CZ)

Riverside Zoning Code
- Controlled Development Areas (W-2)

Airfield Safety Zones
- Clear Zone
- Accident Potential Zone I
- Accident Potential Zone II
- Runway
- March Air Reserve
- March Joint Powers

MARCH ARB COMPATIBLE USE STUDY

Source: March ARB 2020/2021

Matrix

0 ¼ ½ 1 Miles

Runway 12-30 Safety Zones

Figure 5-5 Runway 14 Safety Zones

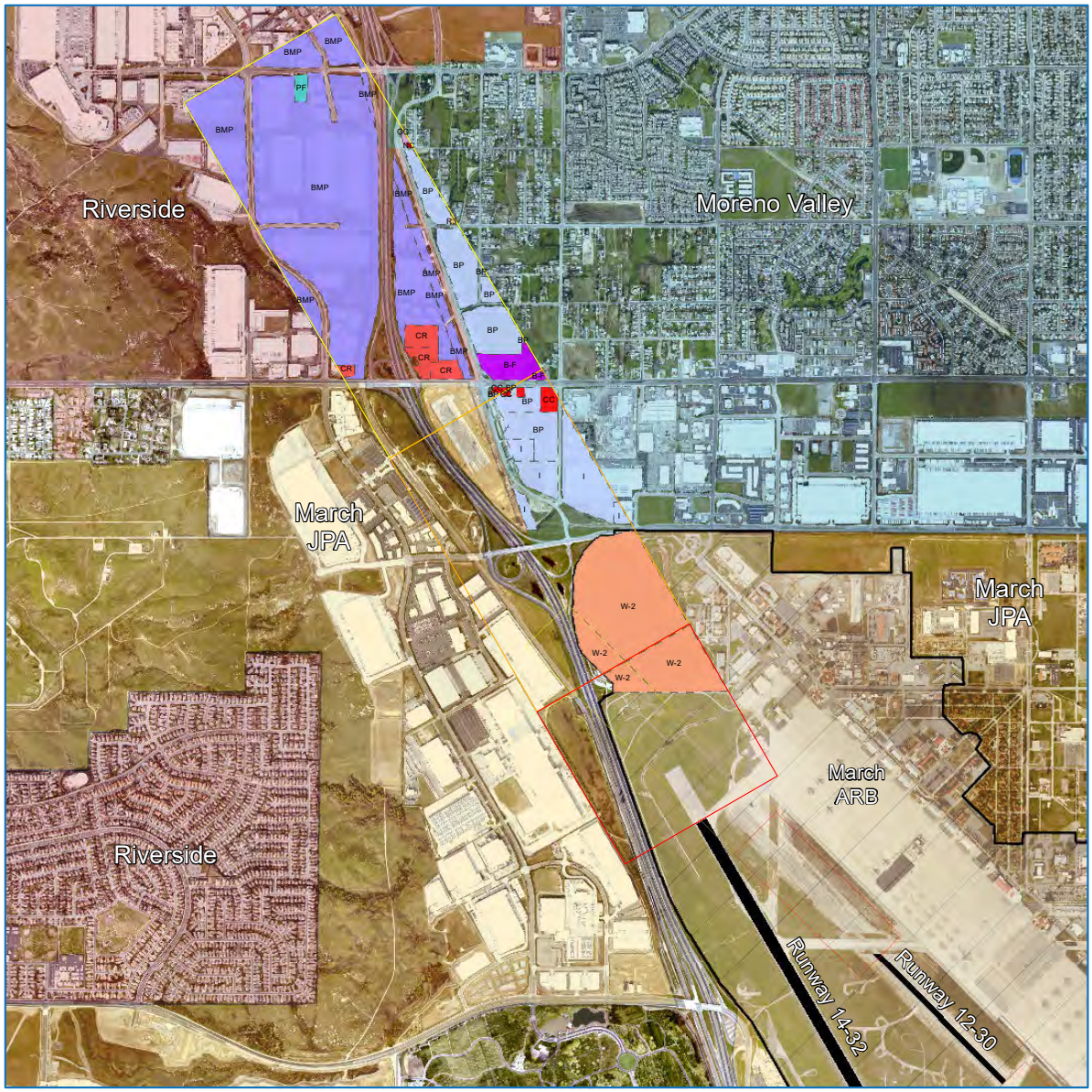
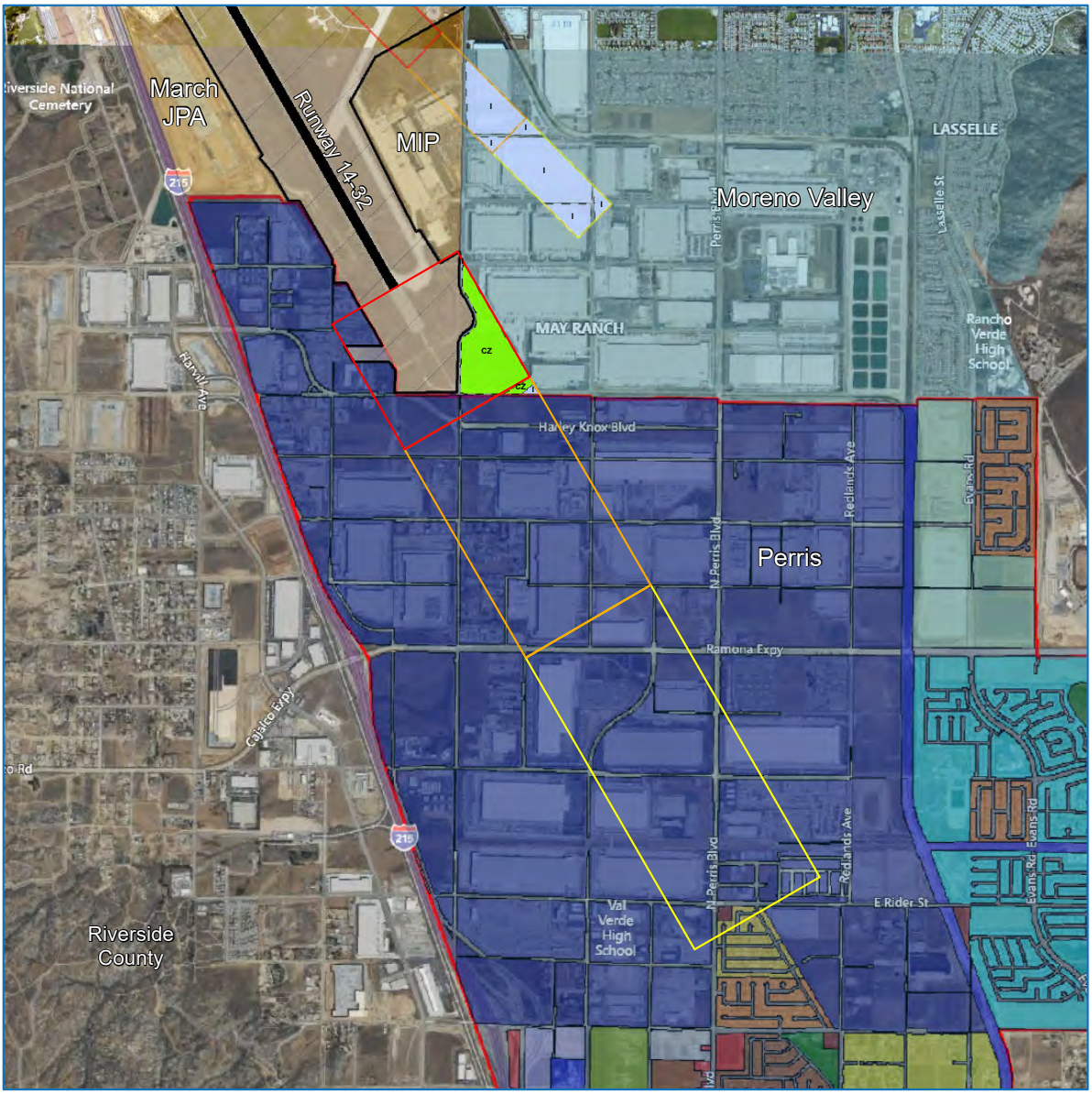


Figure 5-6 Runway 32 Safety Zones



LU-2

Commercial and industrial land use inside the APZs I and II of Runway 14-32 and Runway 12-30 south is nearing complete build-out at a maximum lot coverage of 50%.

Heavy commercial and industrial development within the main runway APZs constitutes a potentially significant risk for structural impact from air mishaps occurring within the APZs. The standard probability of mishap, if one occurs, is 10% within APZ I is 10%; the probability of mishap within APZ II is 5.6%.

Compatibility Assessment

Land uses within the APZs for March's airfield are generally consistent with AICUZ recommendations, which principally include limited miscellaneous manufacturing for which the production process is not considered an additive risk due to production chemicals and/or fire and explosives hazards, wholesale trade, and warehouses. The predominant uses for industrial and commercial properties within the March APZs for Runway 14-32 are fulfillment centers, warehouses, and commercial distribution centers or logistics hubs. These facilities and operations generally involve loading and unloading of commercial freight trucks.

DoD AICUZ land use and FAR recommendations have remained virtually unchanged since the program was first established by the Air Force in 1972. The land use and FAR tables published in AICUZ studies are derived from the 1965 Standard Land Use Classification Manual.

Figure 5.7 shows building footprints for the currently developed areas within APZs I and II for March's main runway (Runway 14-32). The urban form within these zones north and south of the runway is predominantly large commercial warehouse/logistics distribution centers and include some of the largest structures in the world – with some buildings in excess of 1.5 million square feet of ground floor area. These structures are consistent with the AICUZ-recommended FAR of 0.28 in APZ I and 0.56 in APZ II for the "wholesale trade" sector. The 2018 AICUZ for March ARB and DoDI 4165.57 as issued in 2021 allow a maximum FAR of 1.0 in APZ I and 2.0 in APZ II for "warehousing and storage services".

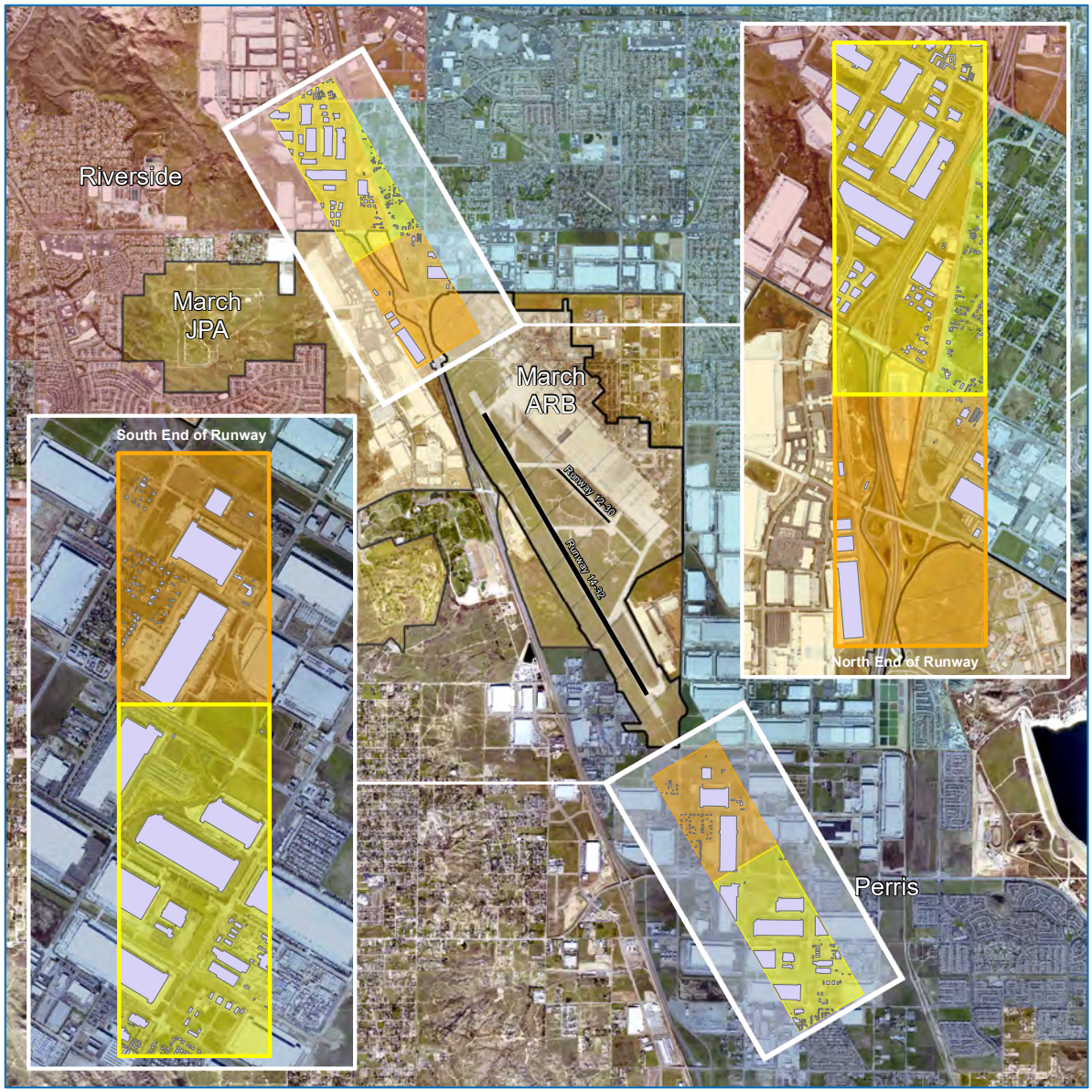
Existing commercial and industrial properties within APZ I and II appear to fall within the 2014 ALUCP open land requirement of 50% maximum lot coverage within the APZs (Table MA-2). This ALUCP requirement differs significantly from the recommended FARs for APZ I (0.28 FAR) and APZ II (0.56 FAR), per the AICUZ program. Spot checks of various warehouses and distribution centers within the APZs that were conducted using geospatial information systems identified various properties where the building footprint of a vertical structure was near or at 50% lot coverage.

Although this accident occurred outside the APZs, the 2020 aircraft mishap involving a South Dakota Air National Guard F-16 fighter jet that struck a warehouse in Riverside is a reminder of the risk of aircraft mishaps involving large, modern logistics facilities and structures. While parking, drainage, and other non-frangible site requirements, such as fire hydrants, power substations, street curbing, and stormwater components are not factors in FAR determination, these components of site development can pose an additive risk. Figure 5.4 demonstrates the scale of large logistics and distribution facilities within the APZs.

This project conducted a FAR Working Group on September 28, 2022 to address whether recommended FAR determination methodology should apply any 'single acre of the site' or 'any single acre of the facility' standard. This study recommends consideration of the 'any single acre of the site' methodology.

The areas identified as W-2 on the map in Figure 5.2 are compatible, based on design and intended use of application for development and should be reviewed for consistency with land use and FAR recommendations found in adopted municipal code and the ALUCP.

Figure 5-7 Existing Structures within Accident Potential Zones Runway 14-32



There is concern regarding the inconsistent application of community intensity standards for developments within the March ARB runway safety zone.

LU-3

Floor-to-area ratio (FAR) recommendations for APZs are sometimes interpreted, or applied, differently by different jurisdictions during review of development applications. This can create challenges during ALUC review of project development applications within its purview.

Compatibility Assessment

The City of Moreno Valley and March JPA have adopted the AICUZ standards within their respective development codes, while other municipalities and the County of Riverside have adopted the March ARB ALUCP standards. The Riverside County ALUCP specifically addresses intensity in Table MA-2 of the March ARB/March Inland Port Airport Land Use Compatibility Plan chapter: "Non-residential uses are limited to 25 people per gross acre in APZ I and 50 people per acre in APZ II and elsewhere in Zone B1. Single-acre intensity limits are 100 people per acre throughout Zone B1." This varies somewhat from Appendix A of the 2018 March ARB AICUZ, which states:

> *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 air 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 occupants, including employees, of commercial, service, or industrial buildings or structures to 25 acre in APZ I and 50 acre in APZ II are considered to be low density (sic).*

The 2014 ALUCP intensity standards stated above are applied within the plan's defined Inner Approach/Departure Zone (B1), compatibility zone, and on each end of the runway that is analogous to the combined area of the AICUZ-defined APZ I and II. As such, the ALUCP applies a more liberal occupancy standard for APZ I than the AICUZ standard of no more than 25 persons per acre. The intensity standard for the B1 zone for March ARB ALUCP is no more than 100 people on any single acre and no more than 25 people, on average, in APZ I and 50 people, on average, in APZ II. This standard is universal for all non-residential uses.

Using the ALUCP standard for a hypothetical 217,800-square-foot facility on a 10-acre parcel within APZ I results in a maximum parcel occupancy of 250 people, on average, with no more than 100 people in any single acre of the facility (also 250 people) structure itself, or within an area of 43,560 square feet. This equates to a minimum area per occupant of 435.6 square feet within the structure itself. If this hypothetical case were moved into APZ II, then the maximum building occupancy changes to 500.

Another area of variance can occur with the interpretation of the AICUZ intensity standards. For some cases, the intensity recommendation of no more than 25 persons per acre for APZ I and 50 persons for APZ II is interpreted as applying to the entire parcel. In other cases, the standard is interpreted as applying only to occupancy rates within a structure's footprint. For example, with the first interpretation, a 5-acre facility on a 10-acre lot within APZ II would be allowed an

occupancy intensity of 500 persons, whereas in the second interpretation, the same facility would be limited to 250 persons. For APZ I, the allowable occupancy would be 250 and 125, respectively.

Appendix C of the 2014 ALUCP provides an alternative approach to evaluating concentrations of people occupying a structure linked to California Uniform Building Code (UBC) standards. This alternative sets maximum allowable building occupancy based on a formula using the total floor area of the structure divided by UBC standards for minimum square feet per occupant by type of building. The standard for warehouses is a minimum of 500 square feet per occupant. For the hypothetical case above with a 5-acre (217,800 square feet) facility on 10 acres, this calculates to a maximum occupancy of 435 people. Appendix C states the total parcel acreage should be divided by the building maximum occupancy to determine intensity for the property – in this case, 43.5 people per acre, which meets AICUZ recommendations for APZ II but not APZ I. However, Appendix C also asserts a rule of thumb discount factor to determine the expected occupancy based on historic survey data for any final intensity determination. Using this 50% methodology for the case above results in an expected occupancy of 217 people, or a intensity of 21.7 people per acre, which falls within the intensity threshold for APZ I.

It should be noted that ALUCP building intensity bonuses for risk reduction through a variety of design and construction techniques and materials are not authorized for Compatibility Zone B1. The 100-person maximum per any single acre discourages other facility uses with a lower minimum area per person for occupancy standards and establishes a minimum of 435 square feet per occupant within any single area of the structure. Table 5.3 below demonstrates this intensity variance.

Table 5.3 Variance in Intensity Standards for Aircraft Safety Zones

	AICUZ		ALUCP		UBC	
Safety Zone	People/AC	Max Occ	People/AC	Max Occ	People/AC	Max Occ
APZ I	25	125	25	250	21.7	217
APZ II	50	250	50	500	43.5	435
B1	n/a	n/a	100	500	n/a	435

Source: *Matrix Design Group, 2022*

LU-4

Existing infrastructure and development within the CZs for March ARB runway creates a potential safety hazard.

Private and commercial structures inside the southern CZ of Runway 14-32 conflict with DoD AICUZ guidance and Air Force recommendations for graded CZs. The presence of activities within the CZ presents public safety hazards and risks to flight crews.

Compatibility Assessment

DoD AICUZ guidance states "no structures (except airfield lighting and navigational aids necessary for the safe operation of the airfield when there are no other siting options), buildings, or above-ground utility and communications lines should normally be located in CZ areas on or off the air installation." Air Force Instruction 32-1015 Integrated Installation Planning (AFI 32-1015) requires Air Force air installations to acquire real property interest through fee simple or through appropriate restrictive easements relative to all land within CZs. The policy requires the Air Force to fund the acquisition of real property in CZs. This policy is nested under the Air Force's Mission Sustainment Policy Directive 90-20 Mission Sustainment (AFI 90-20) to preserve and protect military readiness by mitigating or preventing mission sustainment hazards. The AICUZ program is one form of mitigation. The execution of this policy at other Air Force installations has focused on fee simple acquisition, demolition of existing non-airport systems structures, surface clear grading, and the installation of security fencing.

The 2017 March ARB/IPA APS specifically did not address CZ hazards or obstructions, stating that, "the USAF either owns outright or holds development easements on all of the south CZ to prevent incompatible growth in the area."

The March ARB ALUCP prohibits "all structures except ones with location set by aeronautical function" within Runway Protection Zones, i.e., March runway CZs, and within building restriction lines. The ALUCP also specifically prohibits three other activities:

- Manufacture or storage of any hazardous materials
- Construction of critical community infrastructure, including power substations
- Reconstruction of existing structures

A major concern with both CZs for Runway 14-32 is with existing federal, state, and local transportation infrastructure (streets and highways) located within the CZs (Figure 5-8 & 5-9). These public rights-of-way pre-exist the establishment of AICUZ standards and planning. I-215 and the Cactus Avenue interchange traverse the north CZ. Harley Knox Boulevard, Heacock Street, and North Webster Avenue traverse the south CZ. Additionally, there are two commercial truck and container storage yards, one heavy equipment salvage yard, a flood channel, and two residences within this CZ.

Figure 5-8 Runway 14-32 North Clear Zone

Legend

- Riverside County Metrolink Railway
- Interstate 215 Roadway Infrastructure
- Clear Zone
- March Air Reserve Base

MARCH ARB COMPATIBLE USE STUDY

Source: March ARB 2020/2021

Matrix

0 250 500 1,000 Feet

Runway 14-32 North Clear Zone

Figure 5-9 Runway 14-32 South Clear Zone

Legend

- Streets / Roads
- Proposd Heacock St. Connector
- Clear Zone
- March Air Reserve Base

MARCH ARB COMPATIBLE USE STUDY

Source: March ARB 2020/2021

Matrix

0 250 500 1,000 Feet

Runway 14-32 South Clear Zone

LU-5

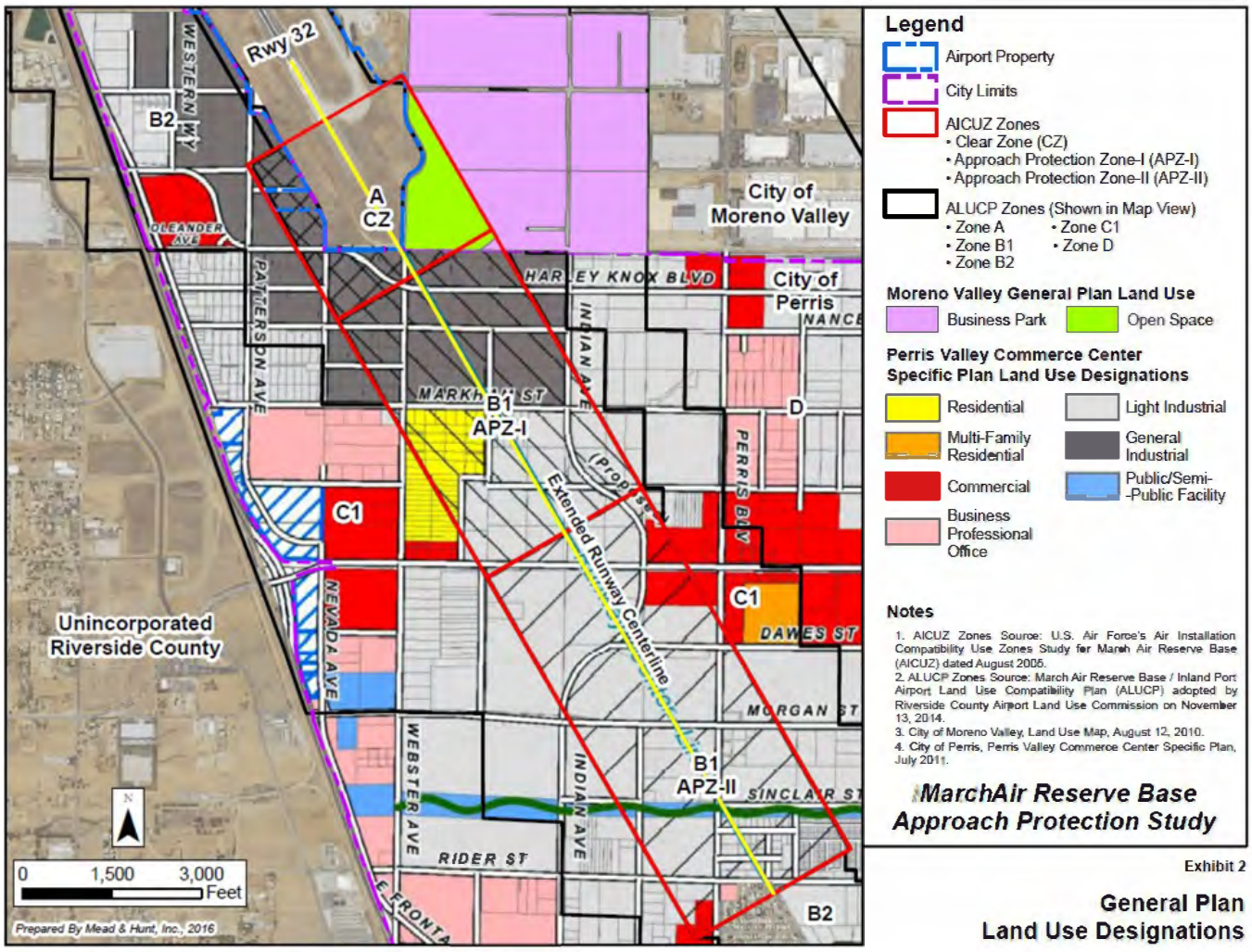
The location of existing residential areas within the March ARB airfield runway APZ creates a potential safety hazard.

The presence of an existing residential neighborhood at Ramona Expressway and Webster Avenue inside the southern APZ-I of Runway 14-32 conflicts with DoD AICUZ and Air Force recommendations for APZs. DoD recommends no residential land use in APZ I and no more than two dwelling units per acre within APZ II.

Compatibility Assessment

The 2018 AICUZ identifies 60 acres of incompatible use within the APZs, including 41 acres of residential use in APZ I and 19 acres in APZ II. The March ARB ALUCP states that no new dwellings are permitted within ALUCP compatibility zone B1, which, as previously stated, is analogous to a combined APZ I and II. However, residential use exists in APZ I in the residential neighborhood at Ramona Expressway and Webster Avenue, which appears to be grandfathered use. The future land use plan (Perris Valley Commerce Center Specific Plan12) identifies this same area for future industrial land use. This neighborhood was not identified in the 2017 March ARB APS as a priority for Riverside County EDA acquisition. Residential land use in APZ II is not within AICUZ-recommended density standards of no more than two dwelling units per acre.

Figure 5-10 Exhibit 2 – 2017 March ARB Approach Protection Study



Source: *March ARB/IPA, Riverside County Economic Development Agency, 2017*

LU-6

Concern with altimeter inaccuracy on approach/departure due to incompatible development.

Air Force pilots report "bouncing readouts" on final approach due the significant size and placement of commercial buildings beneath the flight path within APZs I and II. This can affect aircraft flight controls and creates additional pilot demand to ensure flight controls are stable during landings.

Compatibility Assessment

Air Force pilots interviewed for this study reported that there is significant altimeter "bounce" on final approach to Runway 14-32. This bounce occurs due to the rapid fluctuations in altitude readings associated with the variable heights of large warehouses and distribution centers beneath the flight path (These buildings are identified in Figure 5.7.) Radio altimeters on large military aircraft such as the C-17s and KC-135s stationed at March, and many commercial models, feed into the automated systems that can act without input from pilots. This creates a higher aircrew management load during landings at the airfield as the potential for correction of flight controls may occur. This altimeter bounce management load may be exacerbated by weather conditions such as rain and high winds, as well as by dust and nighttime landing conditions. The ALUCP limits construction of new buildings to one story in APZ I and two stories in APZ II.

Light and Glare (LG)

This compatibility factor refers to man-made lighting (streetlights, airfield lighting, building lights) and glare (direct or reflected light) that disrupts vision. Light sources from commercial, industrial, recreational, and residential uses can cause glint and glare during daylight and excessive illumination and glare at night, impacting the use of military night vision devices and aircraft operations. Conversely, high-intensity lights in military areas, such as airfield lighting, may have a negative impact on adjacent communities.

Key Terms

Glare. Glare is the presence of excessively bright natural light, such as direct or reflected sunlight, and some artificial light, such as from sport field and stadium lighting and solar panel installations. Glare reduces visibility and can impair vision when very intense.

Light pollution. Light pollution is the artificial brightening of the sky that results from development, including from streetlights and other man-made light sources.

Light Pollution Map Info. Light pollution map info is a computer application that projects light pollution data on top of other data layers, such as roadway maps.

Light Radiance. Light radiance measured in radiance units (W/cm2 * sr) is the radiant flux emitted, reflected, transmitted, or received by a surface, per unit solid angle, per unit projected area.

Solar Energy Systems. As defined by the FAA, solar energy systems are solar-powered, electrical power generation systems that include PV systems, solar hot water (SHW) systems, and concentrated solar power (CSP).

Light Trespass. Light trespass is light that encroaches onto neighboring properties.

Visible Imaging Infrared Radiometer Suite. Visible Imaging Infrared Radiometer Suites (VIIRS) collect visible and infrared imagery via satellite. The data is used to support land-, ocean-, and cloud-centric science. Improving scientists' understanding of climate change is one domain where VIIRS data is used. The data is also used to project light pollution around the world using the "Light Pollution Map Info"
computer application.

Technical Background

Under dark sky conditions, the use of night vision goggles (NVG) allows military personnel to view objects up to 984 feet (300 meters) away; however, nearby sources of light can decrease NVG effectiveness to 164 feet (50 meters) or less, depending on the amount of light and how close it is. Off-installation lighting, such as streetlights and other elevated lights, produces a halo effect around objects that further reduces visibility and resolution for air and ground personnel. The amount of ambient light experienced on the ground is a function of several variables:

- Intensity of nearby light sources (up to 20 miles away)
- Distance from the light sources
- Light source spectra
- Cloud density
- Cloud height
- Relative humidity

The use of VIIRS data allows the quantification of light pollution in any location around the world. The VIIRS data shows the light pollution as measured in radiance units (W/cm2 * sr). The larger the number, the greater the light pollution. As expected, greater amounts of light pollution are associated with cities and other developed areas. The application of VIIRS data in developing light pollution maps can provide a useful reference tool for understanding the location and extent of light pollution in a particular region and the potential impacts on military installations and communities.

In general, the following trends have been demonstrated:

- The denser the urban development, the greater the potential for light trespass.
- The closer a development is to an installation, the greater the potential for light trespass.
- The United States Army Corps of Engineers has developed studies that indicate light pollution has an impact on nighttime military training activities in locations upwards of 10 miles away from an installation.

LG-1

Increased glare from residential and commercial solar array installations may pose a potential hazard to safe flight operations and ATC operations at March ARB.

The installation of multiple rooftop solar energy systems on residential homes and commercial facilities around March ARB may increase light reflection and glare/glint, which may have ocular impacts on flight crews or air traffic control tower personnel operating on or near the airfield.

Compatibility Assessment

The FAA retains review authority for all on-airport solar projects but has delegated initial review to local airport authorities. The FAA maintains an interest in off-airport projects. Per the **2018 FAA Technical Guidance for Evaluating Solar Technologies on Airports**, local governments, solar developers, and other stakeholders in the vicinity of an airport have a responsibility to inform the FAA about proposed solar projects so that the agency can determine if the project, especially if large, presents any safety or navigational problems. However, there are no defined thresholds for project size, type, or distance from the airport available that automatically trigger FAA airspace review. Proximity to the airport and CSP technology are two indicators of likely FAA interest in a solar project.

Numerous independent studies indicate that PV solar systems reflect less than 2% to 3% of incoming light and that the potential for hazardous glare, or flash blindness, is similar to, or less than, the potential for hazardous glare from light reflected off smooth water surfaces. In its 2021 **Review of Solar Energy System Projects on Federally-Obligated Airports**, which supersedes the 2013 FAA interim policy, the FAA concluded:

> *...in most cases, the glint and glare from solar energy systems to pilots on final approach is similar to glint and glare pilots routinely experience from water bodies, glass-facade buildings, parking lots, and similar features. However, in this same ruling, the FAA also acknowledges the potential for glint and glare from solar energy systems to result in an ocular impact to airport traffic control tower personnel working in the tower and compromise the safety of the air transportation system.*

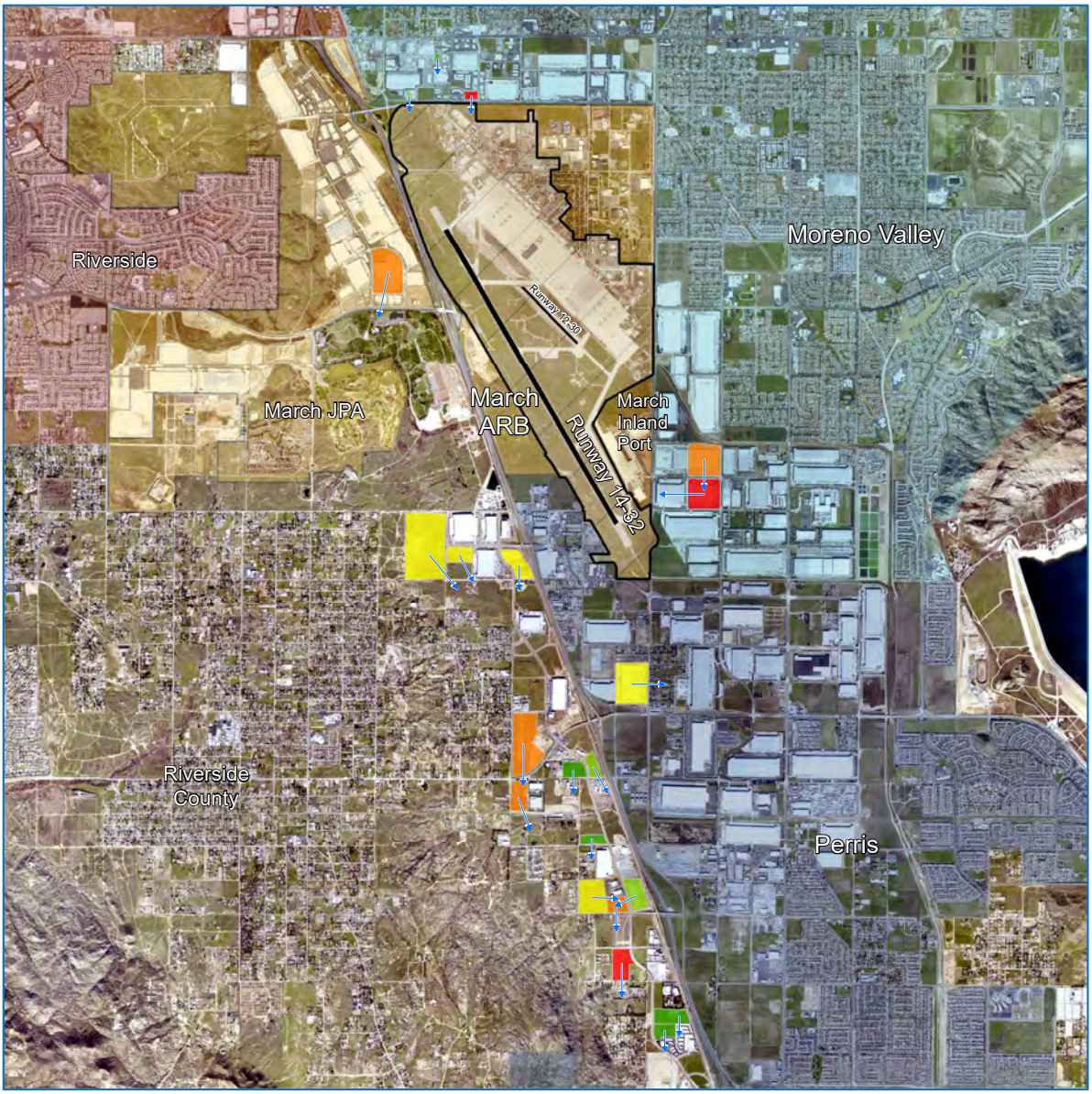
This 2021 ruling shifted the emphasis of the FAA's concern for glint and glare from aircrew to tower personnel, thus shifting agency interest in reviewing solar energy systems development applications from potential impacts on final approach to an airport to that of potential impact to airports' traffic control towers. Airport sponsors are no longer required to conduct and submit an ocular analysis of potential impacts, but instead are required to simply demonstrate compliance with the policy on submittal of a Notice of Proposed Construction or Alteration Form 7460-1. In this ruling, the FAA also rescinded mandated use of the Sandia National Laboratories Solar Glare Hazard Analysis Tool (SGHAT) or comparable commercial glint/glare analysis tools if there is no compelling requirement by the airport sponsor to do so. Compelling requirements could include a potential solar project obscured by another existing structure. This places any subsequent liability on the airport sponsor if ocular impacts are discovered after construction. This policy ruling is not applicable to solar energy systems not located on airport property.

Source: *Wikimedia/Christoffer Riemer, 2009.*

The 2021 FAA ruling essentially places both development vigilance and the burden of proof on the airport sponsor to determine if a proposed solar energy systems project creates the potential for ocular impacts to tower personnel, specifically, and to flight crews during final approach. Any development application for PV or SHW utility-scale, ground-mounted or industrial building rooftop installation projects should be required to submit an ocular impact assessment for ALUC review. Additionally, jurisdictions could consider the adoption of liability statements by developers to establish clear liability for any post-construction ocular impacts affecting the March airfield ATC tower or final approaches to its runways.

Figure 5-11 shows the aggregated rooftop PV projects submitted for ALUC review from 2016 to 2022. This data has been assembled for the ALUC based on independent projects and represents the total amount of glare minutes. It should be noted that the total amount of glare potentially impacting operations may be greater, as some property owners installed solar prior to the time that ALUC began to require glare studies.

Figure 5-11 Riverside County ALUC Rooftop PV Project Cases



Legend

Glare (Total)*
- 38,047 - 61,647
- 21,150 - 38,046
- 7,633 - 21,149
- 2,299 - 7,632
- 265 - 2,298
- Solar Panel Orientation

- March Air Reserve
- March Joint Powers Authority
- Moreno Valley
- Perris
- Riverside

*The glare value represents the total number of minutes of glare in any given year.

MARCH ARB COMPATIBLE USE STUDY

Source: March ARB 2020/2021. Riverside County, 2022.

Matrix

0 ¼ ½ 1 Miles

Riverside County ALUC Rooftop PV Cases

The cumulative impacts of ambient lighting due to increased development beyond ALUC authority is a potential concern.

LG-2

Operational flying units at March ARB routinely conduct night training operations. March ARB has identified concerns with ambient artificial nighttime outdoor lighting around the base that is affecting the unit's ability to meet military readiness training requirements for aircrew proficiency. Over the last 10 to 15 years, development has increased the cumulative effects of artificial nighttime outdoor lighting.

Compatibility Assessment

Light pollution, which can be defined as the upward and outward distribution of light directly from fixtures, such as up-lighting without terminus on buildings, or as reflected off the ground or other surfaces, can interfere with military mission activities such as nighttime training activities and can temporarily impair pilot's vision, causing pilot confusion regarding night vision instrumentation or equipment. Unshielded lighting systems, lighting systems that are not planned with minimizing sky glow, or excess or wasteful light emission and (Light Emitting Diode) LED billboards can increase the amount of ambient light in the sky. This increase can degrade the natural environment for nighttime military operations.

March ARB conducts nighttime flying operations to ensure pilots have the necessary training to effectively operate in real-world mission environments. In many cases, these training operations require the use of NVG that allows pilots to see in low light conditions typically found in many locations around the world. March ARB personnel have indicated that an increase in the ambient light conditions around the installation has made it more difficult to conduct nighttime training with NVGs. In some cases, when possible, this may require aircraft to fly to other locations where dark sky conditions provide a better training environment. Flying to other locations will increase costs and result in lost training time. In addition, alternate locations may not always be available to support the required training.

Figure 5-11 provides an overview of light pollution around March ARB and the surrounding region. The map shows nighttime light pollution as measured in radiance units. The larger the number, the greater the light pollution.

The maps were created using the "Light Pollution Map Info" computer application. The application projects VIIRS data on top of other data layers such as roadway maps. Data collected from light/darkness measurements collected by application users can also be projected. Areas colored red and yellow have greater light pollution, whereas gray and blue areas have lower levels of light pollution. As expected, greater amounts of light pollution are associated with cities and other developed areas. The integration of lighting and other land use data can be critical in informing discussions and decisions regarding compatibility issues related to light pollution and have informed the assessments here.

The military does not have lighting standards that apply to off-base locations; however, UFC 3-530-01, Interior and Exterior Lighting Systems and Controls applies to locations on the installation. The guidance requires the use of energy efficient lighting and systems/fixtures that reduce ambient light and associated light pollution:

- Avoid creating direct glare from light fixtures.
- Use shielded light sources at the lowest wattage possible.
- Use fully shielded light fixtures to eliminate direct light above the horizontal plane.

The UFC also establishes lighting zones that define acceptable light levels for specific areas on the installation and operational activities. March ARB must comply with the DoD requirements.

Riverside County has general lighting standards in Ordinance 348 Land Use Planning and Zoning that are intended to reduce light trespass onto adjacent properties and prevent glare or direct illumination on adjoining properties. In some cases, such as in the Citrus/Vineyard (C/V) Zone, nonessential outdoor lighting must be turned off during non-business hours. County Ordinance 655, Regulating Light Pollution, provides more specific requirements for use of light fixtures and to reduce the ambient light from outdoor lighting in specific locations. The provisions of this ordinance apply to locations within 15 miles (Zone A) and 45 miles (Zone B) of the Palomar Observatory. Requirements include the use of shielded light fixtures and low-pressure sodium lighting. County Ordinance 915, Regulating Outdoor Lighting, applies to all unincorporated areas of the County. The ordinance requires adequately shielded light fixtures to prevent light trespass from properties.

The City of Riverside Zoning Ordinance, Chapter 19.556, Outdoor Lighting, establishes requirements that ensure lighting is adequate for safety and security while preserving dark sky condition by mitigating or preventing glare and light trespass. The ordinance establishes light zones zero through three where lighting is managed based on allowable land uses in each zone. Specific requirements, such as shielded fixtures, apply or don't apply to the zones based on the desire to reduce light pollution.

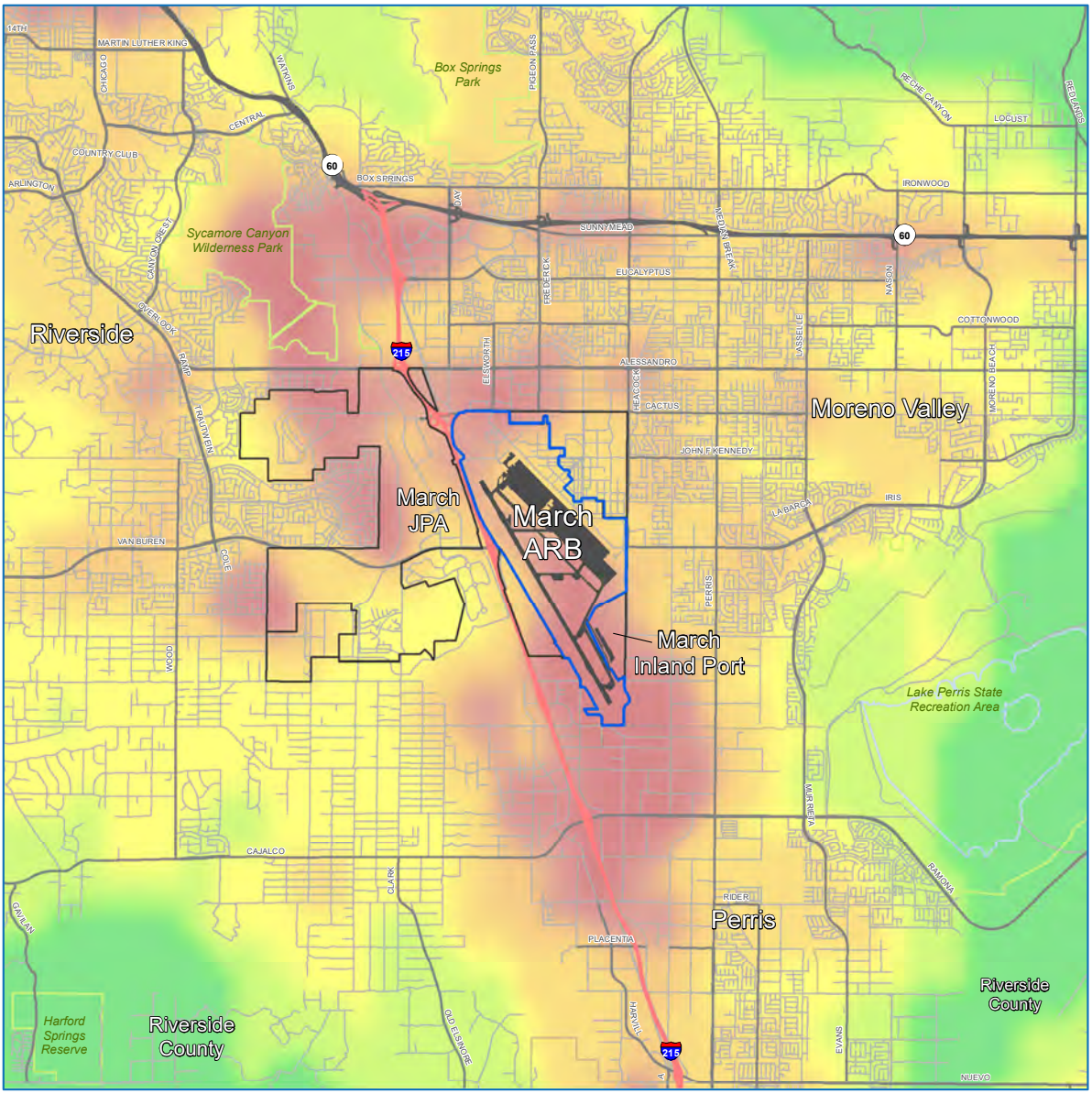
The City of Perris has outdoor lighting regulations identified in its zoning ordinance, Title 19, City of Perris Development Code. The nature and extent of the requirements are based on the specific land uses within the city. For example, commercial areas must ensure lighting is directed away from adjoining properties, while residential zones require fully shielded light fixtures. The ordinance also establishes an AOZ that applies to areas around March ARB and precludes the use of lighting that creates glare or is distracting to aircraft operating in the area.

The City of Moreno Valley has lighting standards in its zoning code, Title 9 Planning and Zoning, Chapter 9.08 General Development Standards. The regulation is intended to reduce outdoor light pollution, conserve energy, and maintain safety/security in all lighting applications across the city. The regulation requires use of shielded light fixtures and establishes maximum light wattage and other energy/dark sky provisions across all land uses and zoning areas. Lighting curfews that reduce light usage are also applied in nonresidential areas.

The March JPA development code has lighting standards identified in Section 9.08.100, Lighting. The code requires all nonresidential outdoor lighting to be shielded and directed away from residential properties. It also establishes a one-foot-candle illumination minimum for parking lot lighting/exterior door lighting requirement per square foot. Additional minor requirements are identified in the code related to outdoor lighting.

Beyond the outdoor lighting requirements identified here, it is worth noting that the International Dark-Sky Association (IDA) is an organization dedicated to the education and promotion of dark skies and dark sky preservation. The IDA has worked with communities around the world to develop methods for reducing light pollution. IDA outdoor lighting recommendations and approved light fixtures assist in reducing light pollution in communities where they have been adopted. In addition to supporting dark skies, reduced energy costs is also a benefit typically seen as a result of implementing measures to reduce ambient light that provides no benefit.

Figure 5-12 Nighttime Light Pollution Near March ARB



Roadway Capacity (RC)

Roadway capacity refers to the adequacy of existing freeways, highways, arterials, and local roads in providing sufficient mobility, connectivity, and access to military installations and points of interest in surrounding communities.

As urban development expands, roads and streets once used primarily to provide access for agricultural, commercial, or residential use and limited local traffic may begin to function as urban arterials. These once low-traffic routes 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 may induce and encourage more growth, densification, and intensity of use.

Key Terms

Access Control Point (ACP)/Entry Control Point (ECP). Access control/entry control points, sometimes referred to as military gates, are an evolution of military base gates as these are specifically designed to meet DoD force protection requirements and must provide for full vehicle inspection for all vehicles entering a military installation during periods of heightened threat alerts.

Entry Control Facility (ECF). Entry control facilities include ACP/ECPs as well as visitor centers and vehicle parking used to process entry authorization and badging for installation visitors. ECFs also often have more entry checkpoints and more security infrastructure, such as improved anti-vehicle access and all-weather vehicle inspection facilities, than basic access/ECPs and can require significant area to accommodate all design and facility requirements.

Serpentine. Serpentines are traffic lanes designed to eliminate straight-line entry through an ECP to reduce the risk of vehicle-borne improvised explosive attacks. Additionally, serpentine lanes provide additional area to absorb traffic queueing and to separate vehicles by type at the ECP.

Military Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA). SDDCTEA is an Army agency charged with providing traffic studies and ECP design recommendations for military installations throughout the DoD.

Access Control Point/Entry Control Facility (ACP/ECF) Studies. These are studies conducted by SDDCTEA to assess the four priorities of an ACP or ECF consisting of:

- Security and functional requirements
- Safety (guards and motorists)
- Traffic flow and congestion
- Aesthetics

There is concern that traffic queueing to enter March ARB impedes the flow of traffic along Cactus Avenue.

RC-1

Concern was noted specific to long lines of traffic queueing to enter through the main ACP for March ARB, which is accessed directly from Cactus Avenue. The location of the ACP, and its current design may impede the free flow of local traffic along Cactus Avenue.

Compatibility Assessment

Traffic queueing along Cactus Avenue at the main March ACP/ECF is a local concern. This ACP is also the base ECF. The existing ECF was constructed after designation of March as an ARB, and transfer of Air Force real property to the March JPA. Urban growth over the last 15 years has likely exacerbated the queueing at this ECF as there is now significant commercial truck traffic along this corridor due to development of warehouses and distribution centers along Cactus Avenue.

Proposals to alleviate this issue include moving the main ACP/ECF from Cactus Avenue to Riverside Drive. As discussed in the key terms above, current DoD force protection requirements could require significant area – as much as 15 acres - to accommodate full ECF specifications. There are two challenges for this proposal. First is the requisite military construction funding required to construct an ECF, and second, is the acquisition of property through fee simple or long-term lease necessary to support construction of an ECF on Riverside Drive. Due to DoD military construction (MILCON) programming requirements and funding priority decisions, this is likely a long-term, 7- to 10-year issue requiring considerable collaboration between March ARB, the March JPA, and the City of Moreno Valley.

Safety (SA)

Safety zones are areas in which land uses that concentrate large numbers of people should be restricted due to higher (than normal) risks to public safety. Activities that can create such a risk, and that are considered when defining safety zones, include aircraft operations and live-fire weapon ranges.

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 establish compatible land use policies near military airfields and live-fire weapon ranges to minimize risk from potential accidents.

Key Terms

Air Operations Area (AOA). The AOA is an area used or intended to be used for landing, takeoff, or surface maneuvering of aircraft, including the runway and associated paved areas.

Accident Potential Zone I. The APZ I begins at the end of each CZ. This area has a lower potential for aircraft mishaps in comparison to the CZ and, therefore, less prohibitive development restrictions are recommended. Residential and other uses that congregate people are still not recommended.

Accident Potential Zone II. The APZ II begins at the end of each APZ I. This APZ can also be curved, as flight patterns are a consideration in its design. Again, the potential for aircraft mishaps in this area is lower in comparison to the CZ and to APZ I, with some additional development types allowed.

Bird/Wildlife Aircraft Strike Hazard (BASH). Bird/Wildlife Aircraft Strike Hazard refers to the likely occurrence of a collision between an animal (usually a bird) and an aircraft.

BASH Relevancy Area. The BASH Relevancy Area is a five-mile area radiating outward from the AOA. The FAA has defined this as an area where BASH incidents are likely to occur due to the types of flying operations near the airfield; such operations are typically at slower speeds and lower altitudes that have a higher risk of strikes.

Clear Zone. The CZ is the area with the highest statistical potential of an aircraft mishap. As the name implies, the DoD recommends that this area be kept clear of all development or structures.

Technical Background

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. The DoD has designated Safety Zones around military airfields comprising the CZ, APZ I, and APZ II that extend out from each end of a runway. Development is a concern in these areas because this is statistically where aircraft accidents have occurred in the past around military installations due to aircraft flying at lower speeds and altitudes, including during landing and takeoff operations. The risk to people on the ground in the event of an aircraft accident is small; however, the consequences associated with these incidents are high. Because of this potential impact, the Air Force has identified recommended land uses within airfield safety zones. The land uses are incorporated in AFI 32-7063, AICUZ Program. The land uses that are evaluated for compatibility in the AFI are based on the national Standard Land Use Coding Manual (SLUCM) developed by U.S. Department of Transportation (DoT) in 1977.

Because the CZ is the area of highest probability where an accident is likely to occur, only open space and agricultural uses (without structures) are recommended within the CZ. Due to the potential hazard to the public, an installation may sometimes either acquire property within the CZ or purchase avigation easements on private property within the CZ to ensure the CZ is free from development. Both APZ I and APZ II, located just at the ends of the CZ, have a lower safety risk potential due to their proximity to the runway. Though still considered a risk, land uses with restrictions are recommended in the APZs to protect the public safety.

BASH is another safety concern on and around military and civilian airfields. The BASH prevention program was implemented by the DoD to address the reduction of wildlife hazards through proactive mitigation of resident bird and

wildlife species and proximity to migratory routes. Both regular and seasonal bird movements increase the risk of potential hazards, especially in the months of April and October. The Air Force BASH Team, Installation Natural Resources Manager, and Installation Pest Manager assists in bird hazard reduction Air Force-wide. Wildlife entering a base and causing issues with regular activities is manageable with planning and implementation of proper mitigation measures. The BASH Team is comprised of aircraft safety personnel, airfield management, and a BASH program manager who are trained in bird control and have experience in wildlife ecology, land management, and flight operations. The team also has current information on authorized control equipment and techniques and works within the wildlife permitting authority working closely with Fish and Wildlife agencies. Air Force Instruction 91-212, BASH Management Program, outlines the requirements for installation BASH plans.

The FAA has also developed guidance for managing bird-attractant uses around airports, including military airfields. This guidance recommends the establishment of a BASH Relevancy Area that is a five-mile radius around the entire perimeter of an airport's AOA. Land uses that should not be located within the BASH Relevancy Area include the following:

- Waste disposal operations
- Wastewater treatment facilities
- Transfer stations
- Landfills
- Golf courses
- Wetlands
- Storm water ponds

Over the past 20 years, more than 69,000 wildlife aircraft strikes have occurred with USAF aircraft and have resulted in the deaths of more than 20 aviators, the destruction of nearly a dozen aircraft, and more than $400 million worth of equipment damage (not including the cost of the destroyed aircraft). Air Force INRMP consider wetland implications to BASH management programs.

SA-1

Increased development encouraging wildlife to utilize March ARB airfield as habitat.

Increased development in the direct vicinity of March ARB, along with ponding stormwater on the airfield, has the potential to encourage of movement of birds and wildlife to the airfield, causing increased safety concerns for airfield management and pilots. The abundance of ground squirrels and stray animals increases the chances of large predators moving into the airfield environment in search of food and water. This also creates the increased potential for FOD to aircraft, and damage to critical systems on the airfield, due to animals potentially chewing wires.

Compatibility Assessment

As the area immediately adjacent to March ARB, as well as the larger region, have continued to develop, there is less natural habitat in the communities for birds and other wildlife to live. Urban development in the vicinity of March ARB includes some of the largest warehouses in the world. While the development is generally consistent with DoD land use recommendations, it can cause any wildlife living in previously fragmented habitat to look for locations of refuge such as the large open space on March. The open space wildlife refugia provided by March ARB also increases the installations federal and state species and habitat protection requirements.

As the increased development adds more impervious surfaces, stormwater runoff can also increase and flow to lower elevations where it will pond. Because the March ARB airfield has small areas of open space habitat, wildlife will tend to move to those locations on the installation. In essence, the installation and airfield can become an "island" where birds and other small wildlife will take up residence either permanently or on a transient basis. The wildlife will move to the locations that afford the best opportunities for food, water and habitat. Increased numbers of smaller sized wildlife (e.g., ground squirrels) on the airfield also increase the risks of larger predators (e.g., coyotes) coming to the installation in search of prey.

Increasing bird and wildlife populations on the installation and airfield create multiple hazards and impacts for military operations. Most important are the increased threats to airfield operations including flying aircraft and associated personnel. According to data from March ARB, between 2005 and 2020 there were 381 recorded incidents involving birds/wildlife and aircraft operating from the airfield. Of the 381 incidents, 261 occurred on the installation including 235 bird strikes and 26 other types of wildlife incidents. These incidents resulted in varying damage to aircraft and impacted the ongoing flying mission.

Other impacts from wildlife taking up residence on the installation and airfield include damaged facilities and infrastructure. Of specific concern are buried utilities that are critical to continued safe aircraft operation. Ground squirrels and other burrowing animals can chew and damage underground cables that power airfield navigation and lighting systems. March ARB personnel have indicated that ongoing and increasing instances of damage regularly occur. Associated with this is the increased potential for foreign object damage (FOD) to aircraft engines from damaged infrastructure and loosened rocks and dirt on and around runways and taxiways.

The base has prepared a March ARB BASH Plan in accordance with AFI 91-212. The BASH plan complements the base's INRMP and outlines specific procedures, roles and responsibilities, and warning systems to help reduce the potential for BASH and other wildlife hazards and minimize the impacts when incidents do occur. In addition, March ARB updated its INRMP in 2021. The updated INRMP lays out a series of goals and objectives related to the management of natural resources on the installation. This INRMP was developed in cooperation with applicable stakeholders, which includes Sikes Act cooperating agencies and/or local equivalents, to document how natural resources will be managed. The INRMP addresses management of birds and wildlife including the depredation of nuisance species that impact airfield operations.

SA-2

Concern with the location of critical roadways (I-215 + Cactus Avenue) within the March ARB runway CZ and APZ.

The presence of I-215 and its interchange with Cactus Avenue through the northern CZ of Runway 14-32, as well as local street infrastructure within the southern CZ, conflicts with USAF AICUZ recommendations for graded CZs.

Compatibility Assessment

As discussed in the LU-4 assessment, Air Force Instruction 32-1015 Integrated Installation Planning (AFI 32-1015) requires that its air installations acquire real property interest through fee simple or through appropriate restrictive easements over all land within CZs. The presence of significant federal and state public transportation infrastructure within these zones precludes full application of this policy within the CZs due to competing public interests and sunk capital investments. This concern is not specific to the presence of the public infrastructure and risk to aircrew, but with risk to public safety, and interruption of highway transportation, if an aviation mishap were to occur within any of the associated public rights-of-way which transect both main runway CZs.

CZs are intended to be graded and free of non-frangible equipment and structures as these are the most probable areas for a mishap to occur. Graded and clear areas provide an additive measure of safety to aircraft and aircrew as it mitigates the potential for structural failure of the airframe and provides open area for emergency response. The presence of overpasses, off- and on-ramps, drainage and other types of transportation infrastructure increases the potential for aircraft structural failure for mishaps which may occur in these zones. The 2020 DoD Instruction 4165.57 AICUZ makes specific recommendations regarding public transportation through CZs: all roads within the clear zone are discouraged, but if required, they should not be wider than two lanes and the rights-of-way should be fenced (i.e., frangible) and not include sidewalks or bicycle trails. Nothing associated with these roads should violate obstacle clearance criteria.

The presence of traffic and public operation of private vehicles raises the potential for mishaps to involve the public, and/or create highway obstructions which could impede traffic or in severe cases shut down these arterials for prolonged periods.

Existing, privately owned properties with grandfathered land use within CZ 14-32 (south runway) present additive risk if avigation easements are not in place, nor adhered to. Avigation easements, secured through real property deeds, can serve to restrict specific areas of a property to be free of activity, structures, or obstacles. Further public or private development, or intensified land use, within CZs should be discouraged or prohibited.

Stormwater Management (SM)

Stormwater management concerns include the availability of adequate infrastructure, both built and natural, to manage water runoff for current and future storm events. The built environment surrounding communities and military installations is a primary factor in managing stormwater runoff due to the increased span of impervious surfaces associated with buildings, roadways, and other physical structures. Additional factors that affect stormwater management include regional topography, soil types and porosity, typical and extreme storm event duration/intensity, and the size of an area from which stormwater is collected.

Key Terms

Floodplain. An area of land that is subject to recurring flooding, generally located near a waterway such as a river, with flat topography or other similar conditions that cause water to stand and pool.

Impervious Surface. Manmade structures, typically buildings, roadways, parking lots, and sidewalks, that prohibit stormwater from percolating into the soil.

Municipal Separate Storm Sewer Systems (MS4). MS4 is regulated under the CWA via National Pollutant Discharge Elimination System (NPDES) permits.

Stormwater Best Management Practices. Stormwater best management practices include built infrastructure, engineered control devices, and non-structural procedures/processes designed to reduce stormwater discharges and associated pollutants.

Stormwater Management Plan. Stormwater management plans address stormwater regulatory requirements and compliance and are required for MS4 permitting.

Stormwater Master Plan. Stormwater master plans address stormwater infrastructure conditions, capacity, deficiencies, and related issues, such as jurisdictional boundaries.

Technical Background

Stormwater is a regional concern that is best managed on a watershed scale or, in some cases, a sub-watershed basis. Development or changes to infrastructure or natural features in one location can create stormwater impacts in surrounding areas as stormwater moves across the landscape. Impacts vary depending on specific circumstances, but can typically include flooding, contaminated discharges, and other events that are not compliant with regulations. When dealing with stormwater policy, establishing regulatory fees, quantifying stormwater inflow/outflow and identifying best management practices, adopting a regional or sub-regional perspective can provide benefits and improve compliance for all parties.

Development and associated impervious surfaces are a major contributor to increases in stormwater runoff, especially in urban areas. Impervious surfaces are manmade structures that are impermeable to rainfall and runoff. New or modified development can increase the amount of impervious surfaces on an installation or in a community and result in significant increases in stormwater runoff. As the stormwater runs off these surfaces, it can pick up pollutants as it flows

into storm drains, which then flow directly into rivers, lakes, and wetlands in the region. Contaminated runoff can have negative effects on the environment and public health. Another impact of impervious surfaces is the increased quantities of storm runoff. Where water once permeated the soil, it is now flowing into developed areas where buildings and homes may flood. Runoff eventually flows into nearby rivers and streams that are unable to handle the increased volume of water, causing more flooding of developed areas downstream, as well as erosion throughout the flow area. Increased development and associated impervious surfaces can, in some cases, also reduce the total amount of water recharging groundwater aquifers. This lack of groundwater recharge can affect the water resources in regions that depend on groundwater as a potable water supply.

Stormwater master planning across jurisdictions and military installations provides an opportunity to prevent or minimize stormwater impacts through the communication of stormwater concerns, the coordination of future planning efforts and approved development, and the identification of joint stormwater improvement opportunities that can benefit multiple parties and enhance regulatory compliance.

Flooding occurs along the perimeter of March ARB during significant rainfall events.

SM-1

Flooding along Cactus Avenue, on the northern border between March ARB and the City of Moreno Valley, occurs during heavy rainfall. The flooding impacts traffic entering and leaving the base at ECP. Heavy flooding has historically occurred along the eastern and western installation boundaries, resulting in infrastructure damage and traffic impacts both on and off the installation. The area along the western boundary of the base is impacted by stormwater runoff from I-215 and locations to the west.

Compatibility Assessment

March ARB is located in western Riverside County where the climate is classified as Arid Subtropical. The average annual rainfall from 2000 to 2021 was approximately eight inches. The range of annual rainfall over the same years was between 3.40 inches in 2013 and 16.22 inches in 2005. Winter months – December through February – are typically the wettest months with maximum rainfall amounts exceeding six inches in some years. The region is subject to intense storms on occasion, where the stormwater infrastructure can be overwhelmed and flooding can occur on and around the installation. The surrounding areas are heavily developed and have significant amounts of impervious surfaces, including roadways, buildings, and other structures.

Source: *March JPA, 2023*

The RCFC&WCD is responsible for managing flood hazards in the western portion of the county, including the area where March ARB is located. The core mission of the district is, "responsibly manage stormwater in service of safe, sustainable and livable communities." The district's responsibilities include the following:

- Identification of flood hazards
- Regulation of floodplains and development
- Regulation of drainage
- Construction of flood control structures and facilities
- Maintenance of flood control structure and facilities

March ARB is subject to periodic floods and flooding conditions as a result of both on-base and off-base conditions. These conditions include relatively heavy rainfall events primarily during winter months, a built environment with large areas of impervious surfaces, generally less than 1% slope, and in some locations, inadequate stormwater infrastructure – both on and around the installation. As a result of ground surface elevations, stormwater tends to flow from the west/north to the east/south onto, across, and then off of installation property. Under heavy rainfall or storm events, existing flood channels may not meet FAA 72-hour drainage criteria.

Regular maintenance, as well as post-event debris removal and vegetation clearance are not enough to meet maximum stormwater flow. In recent years, the RCFC&WCD has made significant investments and developed plans for new flood control channels:

- Completion of the northern Heacock Channel along the eastern boundary of March ARB
- Completion of portions of the Perris Valley Lateral along the northwestern boundary of March ARB
- Ongoing construction of Perris Valley Lateral Stage 5 along the western boundary of March ARB
- Proposed construction of the Perris Valley Lateral Stage 4 along the southwestern boundary of March ARB
- Planned construction of the Perris Valley Lateral Stage 6 to be built by others
- Proposed construction of the Cactus Channel along the northern boundary of March ARB

These flood control channels, once fully constructed, will generally surround the perimeter of the installation and are designed to protect against 100-year flood events. Per the district, they have been designed for full "build-out."

Challenges still remain in completing the needed flood control channels, particularly the Cactus Channel, where issues of multi-agency funding and right-of-way for construction persist. In addition, maintenance of the existing and planned stormwater flood control channels is critical to ensuring the facilities work as intended and safely move stormwater away from the installation and surrounding communities.

Beyond the planning and construction of stormwater control structures around the perimeter of the installation by the RCFC&WCD, March ARB needs to reassess and evaluate stormwater management requirements internal to the installation. While the new stormwater channels will solve many of the stormwater issues the base has experienced in the past and is currently experiencing, additional stormwater issues within installation control are possible. Installation stormwater infrastructure and/or maintenance procedures may require reassessment to ensure movement of stormwater away from key locations such as the airfield.

Rising groundwater in the vicinity of March ARB may potentially exacerbate stormwater sheet flow and flooding.

SM-2

Rising groundwater levels on and around March ARB may potentially exacerbate stormwater sheet flows and flooding in the area. As the ground becomes more saturated and groundwater levels rise, portions of stormwater flow that might typically permeate the ground will remain on the surface and create additional sheet flow and/or ponding on and around the installation.

Compatibility Assessment

In recent years, groundwater levels below March ARB and the immediate surrounding area have risen above historic normal levels. The groundwater levels have been rising at varying rates of up to three feet annually in the area. The specific causes of the rising groundwater levels are not fully understood, although there are several potential reasons:

- Reduced groundwater pumping in the region partially due to change in land use
- Seepage of water from the Lake Perris Dam
- Limited groundwater outflow in the area

As a result of the rising groundwater, installation development activities, such as new construction and maintenance and/or the renovation of existing facilities and infrastructure, may be subject to challenges associated with high water tables. One of the more serious concerns is the potential for increased stormwater sheet flow and/or ponding.

The area surrounding March ARB is extensively developed. As discussed under SM-1, the region is subject to occasional intense storms that, when coupled with large areas of impervious surfaces, can result in relatively significant stormwater flows. With rising groundwater levels and soils that are more water saturated, areas where there are no impervious surfaces may not be able to absorb the amount of stormwater needed to avoid flooding. Under ideal conditions, land areas without built structures allow stormwater to permeate the soil, reducing stormwater flow and ponding. The degree of water percolation into the soil is dependent upon several variables, including the level of soil saturation.

The continued rise of groundwater and associated soil saturation on and around March ARB has the potential to impact stormwater flows, and in turn, can impact military activities at the installation, including airfield operations. Moreover, standing stormwater on and around the airfield can attract wildlife, which can pose a safety threat for aircraft operating on and around March ARB. An additional concern is the spread of groundwater contamination during flood events.

Stormwater collects around the south end of Graeber Street and Riverside Drive causing heavy flooding.

SM-3

During heavy rain events stormwater tends to flow towards the southeastern end of Graeber Street and the southern end of Riverside Drive. The intersection of the roadways and the immediate surrounding area floods as a result. It is reported that Graeber Street lacks adequate stormwater drainage.

Compatibility Assessment

Riverside Drive and Graeber Street intersect just to the east of the March ARB airfield and west of the FamCamp RV Park. During discussions with March ARB civil engineers, this area was identified as subject to periodic flooding during and after heavy rains.

Stormwater flow on the installation typically travels across the installation in a southeasterly direction. This can expose the area surrounding the intersection to stormwater runoff from the airfield and built-up areas to the north. In addition, the volume of impervious surfaces is significant and includes airfield ramps, roadways, and parking lots in the immediate area surrounding the intersection. Immediately to the south of the roadway intersection, an open stormwater channel collects runoff from underground stormwater infrastructure on the airfield. In addition, stormwater collected along Riverside Drive is directed into the same open stormwater channel that then travels to the east, ultimately dumping into the Heacock Flood Channel along the installation boundary. This convergence of storm flow at "Outfall 2" may overwhelm the stormwater infrastructure during heavy rain events and result in flooding. The civil engineers also noted that Graeber Street may lack adequate stormwater drainage infrastructure and that regular and before/after event maintenance is required to maintain maximum stormwater flow capacity for this flood channel.

This area is also within the 100-year floodplain, as indicated in the March ARB Severe Weather/Climate Hazard Screening and Risk Assessment. This report identifies a medium risk of non-storm-surge flooding events on the installation.

Storm flooding in the area around the intersection of Riverside Drive and Graeber Street has the potential to impact March ARB operations. At a minimum, it may create an occasional traffic safety hazard and may also pose a safety hazard to installation personnel.

Utilities Security (US)

The assurance of reliable energy and other utilities against the vulnerability of disruption from natural or actor-induced outages, such as physical or cyberattacks, is critical to maintaining operational viability and quality of life. Utility security includes security in emergency power production, alternative energy, efficiency gains, and network reliability.

Key Terms

Redundant Utility Service. Redundant utility service includes more than one main service connection for needed resources, such as potable water or electricity, on a military installation or in a community.

Utility Resilience. Utility resilience involves creating or enhancing the conditions or capacity that allows a utility system to withstand and recover from the effects of a disruptive hazard or threat.

Utility Service Vulnerability. Utility vulnerability exists when a utility system or its associated critical infrastructure is exposed to a threat or hazard, such as extreme weather or human activities (e.g., cyberterrorism).

Technical Background

The DoD continues to emphasize and plan for increased utility security for military installations. The DoD's installation energy strategy is designed to ensure mission assurance for the warfighter, reduce energy costs, and improve the energy resilience of fixed installations. DoD efforts include the following:

- Reducing the demand for installation energy and water through conservation and efficiency
- Expanding on-site energy for mission assurance
- Improving the energy grid and storage resiliency on installations
- Leveraging advanced technology for energy resource efficiencies and increased security
- Improving the cybersecurity of mission-critical, facility-related control systems

The Air Force has similarly developed a "resilience focus" to ensure installations have adequate power and water supplies to meet mission needs. Three goals have been identified as part of a strategic approach to energy and water utilities:

- Identifying both internal and external energy/water system vulnerabilities
- Improving the resilience planning to address identified vulnerabilities
- Ensuring investments in energy/water utility systems provide the desired results

Multiple planning processes and implementation tools have been developed to assist military installations with improving utility resiliency. These include installation energy readiness exercises, installation energy plans, public-private partnerships, and direct investment in energy resilience and conservation projects.

Finally, the military recognizes that working with local communities is critical to ensuring energy/water resilience for installations. This is of particular importance where installations depend on utility services from a public or private entity that is not located on the base. Programs such as the Defense Community Infrastructure Pilot (DCIP) Program can assist with addressing community infrastructure deficiencies where those systems support military installations.

US-1

March ARB lacks a redundant power connection to an off-base supplier.

Currently March ARB is provided electrical power service via a single connection to the off-base electrical utility power grid. Redundant connections to the power grid increase installation resiliency in the event of a failure of a single point grid connection. Failure to provide an alternate connection to the power grid or provide an alternate redundant electrical power supply increases the likelihood of temporary power interruptions and possible mission failure in the event of longer disruptions to service.

Compatibility Assessment

March ARB is supplied electricity by Southern California Edison (SCE). Currently, that electric service is provided via a single 115kV line to the installation. This service line provides electricity that is then distributed throughout the base by both above- and below-ground infrastructure, including transmission lines, substations, and transformers. City Light & Power, Inc. owns, operates, and maintains the high voltage power and distribution system on March ARB.

March ARB and City Light & Power, Inc. have developed a system restoration and recovery plan in the event of a disruption to the SCE service line or power distribution system on the installation. Even under the best of circumstances, the disruption of the electric power service line would likely cause impacts to installation operations and mission success.

The Air Force, as identified in the 2021 Installation Energy Strategic Plan, is focusing on three primary goals related to energy assurance:

- Identifying enabling system vulnerabilities
- Improving resilience planning
- Ensuring resilience results

While the overarching and longer-term objective for energy resilience is to evaluate opportunities to separate the installation from the commercial electric grid, the more immediate need is to ensure a redundant capability for electric power. The March ARB Installation Energy Plan should highlight the need to plan for the development of a redundant electric power service line connection to the commercial grid.

In the longer term, identifying and evaluating opportunities to increase March ARB energy resilience should remain a focus of the base civil engineer and the Installation Facility Board. The Air Force Installation Energy Strategic Plan identifies several potential tools that may be useful in the design and construction of March ARB energy resilience projects.

March ARB has no redundant water supply service line.

US-2

Currently March ARB is provided potable water from the Western Municipal Water District via a single water service line. A project that will allow Western Municipal Water District to provide an additional service line via the Eastern Municipal Water District water distribution system has been funded. Lack of a redundant water service line has the potential to impact military operations in the event of a single point failure.

Compatibility Assessment

March ARB has a single 14-inch main water line that provides potable water to the installation. The water line enters the installation from the west and is used by the Western Municipal Water District to provide potable water for both the cantonment and non-cantonment areas of the base. This single main water service line is not adequate to provide the necessary volume and pressure required to meet all March ARB water needs on a continuous basis. The Western Municipal Water District has agreements with the Eastern Municipal Water District whereby additional water volume and pressure are provided to March ARB using Eastern Municipal Water District infrastructure systems. These Eastern Municipal Water District interconnections are used when the Western Municipal Water District systems are unable to meet March ARB demands. In addition, the Eastern Municipal Water District system is used to ensure adequate fire suppression flows for portions of March ARB.

The Western Municipal Water District is currently constructing a new 24-inch water main that will provide March ARB with a second water service line. The new line, partially funded with Defense Community Infrastructure Program monies, is part of an effort by the Western Municipal Water District to improve water supply reliability for both March ARB and the surrounding communities. Recent communications with the water district indicate the project has been delayed but is expected to be completed in the near future. Once the second water supply line is in place, the potable water infrastructure on the installation may need additional enhancements to ensure the additional capability can be fully exploited. The Western Municipal Water District is responsible for capital improvements, operation, and maintenance of the potable water infrastructure on March ARB.

March ARB personnel have also indicated a desire to remove existing water towers located on the installation. These water towers are primarily used to ensure adequate water volume and flow are available for aircraft hangar fire suppression systems. It may be possible to take the water towers out of service if the new water service line connection provides adequate fire suppression water volume and pressure to support the aircraft hangars and related facilities. The removal of the water towers, which are old, would reduce the infrastructure footprint, saving periodic capital improvement costs along with recurring operations and maintenance costs.

Water Quality/Quantity (WQQ)

Water quality/quantity concerns include the assurance that adequate water supplies of good quality are available for use by the military and surrounding communities to support current needs and future planned growth. Water supply for agriculture and industrial use is also considered.

Key Terms

Acre-Foot. An acre-foot is the volume of one acre of surface area to a depth of one foot. It is equal to approximately 325,851 gallons or approximately enough water for a family of four for one year.

Aquifer. An aquifer consists of a layer of porous substrate that contains and transmits groundwater and where water can flow directly between the surface and the saturated zone.

Groundwater. Groundwater is water that is held underground in the soil or in pores and crevices in rock.

Public-Supply Water Use. Public-supply water use is water withdrawn by public and private water suppliers that furnish water to groups of users. Public suppliers provide water for a variety of uses, such as domestic, commercial, industrial, thermoelectric power, and public water use.

Reclaimed/Recycled Wastewater. Reclaimed and recycled wastewater includes treated wastewater plant effluent that has been diverted for current/future beneficial uses such as groundwater injection, irrigation, industry, or other similar purposes.

Surface Water. Surface water is derived from waters that flow continuously over land surfaces in a defined channel or bed, such as streams and rivers; standing water in basins such as lakes, wetlands, marshes, swamps, ponds, sinkholes, impoundments, and reservoirs either natural or man-made; and all waters flowing over the land as runoff, or as runoff confined to channels with intermittent flow.

Water Credit. A water credit is a documented record that allows the reuse of a specific quantity of water at a specific site. A water credit is typically based on a temporarily discontinued use of water.

Water Use Credit. A water use credit is a limited entitlement allowing the use of a specific quantity of water at a specific site. A water use credit is generally limited by time and other conditions.

Water Year. The period from October 1 to September 30 of the following year.

Technical Background

At the federal level, the EPA is responsible for the oversight of public water systems and enforcement of the Safe Drinking Water Act of 1974. The EPA has delegated primacy enforcement responsibility for public water systems in California to the state. The Bureau of Reclamation, an agency within the U.S. Department of Interior, manages, develops, and protects water resources, including raw water supply, for the benefit of the public. Region 10 of the Bureau of Reclamation covers the California Great Basin where the Study Area is located. Other federal land management agencies are involved in helping to protect watersheds across the country, including in the State of California.

Because of the importance of safe drinking water and the challenges faced by the State of California with water supply, there are myriad agencies and organizations involved with the oversight and implementation of drinking water programs in the state.

At the state level, there are several key organizations that help manage drinking water.

- California Department of Water Resources (CDWR): The CDWR, a department of the California Natural Resources Agency, manages water resources, systems and infrastructure across the state. CDWR has primary responsibility for management of the SWP resources and infrastructure, including the California Aqueduct and the Sacramento-San Joaquin Delta, along with multiple dams, reservoirs, and underground water storage facilities.
- California Environmental Protection Agency (Cal-EPA): Within Cal-EPA, the California State Water Resources Control Board (State Water Board) works to ensure the quality of drinking water for the state. The Board sets statewide policy and provides support for the regional boards. There are nine RWQCB whose job is to develop implementation plans and enforce standards that protect the State's waters within their area of responsibility.
- California Water Quality Monitoring Council: The monitoring Council is tasked with coordinating efforts between Cal-EPA and the California Natural Resources Agency to improve water quality and ecosystem management, enhance integration of water monitoring data and availability of assessment information.

In addition, there are multiple other state agencies with responsibilities that involve direct or indirect activities related to supply and quality of potable water.

SWP and RWQCB: In California, the State Water Board and the Regional Water Quality Boards manage drinking water to protect beneficial water use. The Porter-Cologne Water Quality Control Act provides this authority. The Santa Ana RWQCB oversees rulemaking and regulatory activities for Region 8, which includes the study area and surrounding communities.

Groundwater Sustainability Agencies (GSA): The California SGMA enacted in 2014 is another key law. The Act provides a framework for managing groundwater basins across the state. In addition, local agencies are required to form GSA, to develop GSP which prevent the over-pumping of groundwater and mitigate undesirable effects of pumping.

In addition to federal and state agencies, there are multiple agencies, organizations and corporations involved with the efforts to provide drinking water, in adequate quantity and level of safety, to the region.

The Western Municipal Water District is responsible for managing, protecting, and conserving water for beneficial use within the county. Their mission is to provide water supply, wastewater disposal, and water resource management to the public in a safe, reliable, environmentally sensitive, and financially responsible manner. The district provides reliable water and wastewater services to wholesale and retail customers from Corona to Temecula. This regional area includes the cities of Corona, Norco and Riverside and the water agencies serving Box Springs, Eagle Valley, Lake Elsinore, Temescal Valley and Temecula. Western directly services approximately 25,000 residential and business retail connections located within portions of the cities of Riverside and Perris, as well as the unincorporated communities of El Sobrante, Eagle Valley, Lake Mathews, portions of Mead Valley and March ARB.

The Eastern Municipal Water District provides safe, reliable, economical and environmentally sustainable water, wastewater and recycled water services to nearly 1 million people living and working within a 558-square mile service area in western Riverside County. The retail service area includes the cities of Canyon Lake, Hemet, Menifee, Moreno Valley, Murrieta, Perris, San Jacinto, and Temecula, as well as the unincorporated communities of French Valley, Good Hope, Homeland, Lakeview, Mead Valley, Murrieta Hot Springs, Nuevo, Romoland, Valle Vista and Winchester.

WQQ-1

Concern with the prioritization of potable water deliveries to March ARB in the event of major shortages.

There is a concern that there is no formal agreement that ensures that the Western Municipal Water District would prioritize delivery of adequate potable water supplies to March ARB in the event of local/regional major water shortages.

Compatibility Assessment

There is no formal agreement, such as a MOA, between March ARB and the Western Municipal Water District to ensure the installation is prioritized to receive minimum supplies of potable water to meet operational requirements. In the event of major water supply shortages in the region, the March ARB mission could potentially be at risk if installation minimum needs were not met.

Historically, March AFB met its potable water needs by pumping groundwater from wells located on the installation. In 1988, the Air Force discontinued pumping groundwater and established utility connections to water suppliers located off the installation. Currently, March ARB receives its potable water from the Western Municipal Water District.

The Western Municipal Water District depends on a combination of imported water, local groundwater and recycled water to meet its demand commitments in the region. From 2016 through 2020, total water use has remained relatively constant in the service area, ranging between 220,000 and 245,000 acre-feet per year, with approximately 31% of this amount provided by Western Wholesale. The remaining 69% of the water comes from the State Water Project, the Colorado River Aqueduct, and other regional and local water sources. The district is projecting an increase in wholesale and retail water demand from 74,927 acre-feet in 2020 to more than 121,000 acre-feet in 2045.

Typically, about 50% of the water used in the district is imported via the California State Water Project (SWP). In recent years, as ongoing drought impacts continue, the amount of water provided by the state has been reduced dramatically. In 2022, the Western Municipal Water District expects to receive no water supplies from the SWP.

Southern California continues to be affected by an ongoing drought that has the potential to impact potable water deliveries throughout the region. A combination of reduced supply and increased demand for water in the state has created the potential for water shortages in the future. March ARB is identified in the Western Municipal Water District Urban Water Management Plan as a key retail customer stakeholder and a member of the Drought Task Force for the district. The Western Municipal Water District has prepared a Water Shortage Contingency Plan that addresses requirements for both wholesale and retail water needs.

March ARB should investigate the possibility of establishing an agreement with the Western Municipal Water District to prioritize a minimum supply of water be made available to the installation in the event of a major shortage or service disruption.

WQQ-2

The wastewater infrastructure serving March ARB is in need of repair/replacement.

The infrastructure that provides sanitary sewer service to March ARB is old and in some cases is failing. The Western Municipal Water District is responsible for the capital repairs, maintenance and operation of the sanitary sewer system, including the infrastructure located on the installation. The March ARB mission is at risk without an adequate sanitary sewer capability.

Compatibility Assessment

In stakeholder discussions with the Western Municipal Water District, concerns were raised regarding the condition of the sanitary sewer system on March ARB. The district noted that the sanitary sewer line connecting the installation to the district wastewater treatment plant has failed. Currently, the district is using the installation's Enhanced Groundwater Extraction System (EGETS) infrastructure as a work around to convey sewage to the plant. The EGETS is the system used to treat contaminated groundwater on the installation and sends treated groundwater to the district wastewater treatment plant. The district is investigating the best approach to fixing the sewer line.

The Western Municipal Water District is responsible for capital improvements, operation and maintenance of the system on the installation. While the 2019 Western Municipal Water District Sanitary Sewer Management Plan indicates that depredated sewer lines on the base have been replaced, it is likely that there are additional lines that are in need of repair and/or replacement, along with other conditions that may impact the system. The sewer plan noted efforts to manage groundwater infiltration into the sewer lines on March ARB. Part of the concern with groundwater infiltration includes the potential for the presence of PFAS compounds.

The PFAS contamination is from past use of aqueous firefighting foam (AFFF) for suppressing fires in aircraft hangars and on airfield ramp areas. Much of the contamination is from the use of the AFFF during training exercises in fighting aircraft

fires. Both the Air Force and federal/state regulatory agencies are investigating for PFAS contamination on and around March ARB. Infiltration of PFAS into the sanitary sewer system lines can impact the operations of the district wastewater treatment plant.

The 2020-2025 Western Municipal Water District Capital and Facilities Improvement Plan identifies other infrastructure concerns that have potential to impact sanitary sewer operations for March ARB. One concern is the reliability of the lift station that conveys sewage from the March ARB cantonment and non-cantonment areas on the installation. The plan calls for a redesign of the pump station, along with replacement of the aging submersible pumps, which are operating well below district standards for pump efficiency. Three longer-term projects identified in the plan are related to March ARB sanitary sewer system:

- March ARB sewer collection PFAS mitigation
- March ARB sewer infiltration reduction
- Pump Station 1269 Force Main Replacement

The ability to collect, convey and treat sanitary sewage from March ARB is a critical support capability to ensure continuity of operations at the base. It is important that the Western Municipal Water District work closely with March ARB to ensure the following:

- A complete understanding of required sanitary sewer system upgrades and repairs
- A documented investment plan that lays out current and future sanitary sewer projects
- The construction of all required sanitary sewer capital projects and ongoing repair/maintenance work

WQQ-3

Planned pump and treat operations to address rising groundwater may impact March ARB's ongoing contamination cleanup.

The Eastern Municipal Water District is implementing the North Perris Groundwater Project operations to try and lower the level of groundwater on and around March ARB. The cause of the rising groundwater is not fully understood. While pumping and treating the groundwater may help address other concerns, it can potentially affect the current March ARB efforts to ameliorate existing groundwater contamination that resulted from past installation activities.

Compatibility Assessment

As discussed in CE-1, the groundwater under and around March ARB has been rising for a number of years, although the exact causes are not fully understood at this time. The Eastern Municipal Water District is undertaking the Perris North Groundwater Program in an effort to alleviate the rising groundwater and to use the treated water as an additional source of water for March ARB. One of the concerns related to the rising groundwater is the potential impact to the ongoing cleanup of contaminated groundwater at March ARB.

March ARB has been conducting environmental cleanup for contaminated soils and groundwater since 1983, when the facility was still an Air Force Installation. Groundwater was found to be contaminated with aircraft fuel, various solvents and other chemicals used in the past at the installation. In 1992, the Air Force installed the EGETS, a groundwater interception and treatment system, to capture and treat the contaminated groundwater. The treated groundwater is conveyed to the Western Municipal Water District's wastewater treatment plant. The system has proven effective in treating the groundwater contamination and preventing further spread of the plume. The groundwater interception and treatment system is designed to maintain an inward gradient at the extent of the contaminated plume. This ensures that the plume does not spread beyond the intended area of treatment.

The Air Force has expressed a concern that the groundwater pumping activities associated with the North Perris Groundwater Project could potentially affect the March ARB groundwater cleanup activities. The Eastern Municipal Water District has indicated the operation of the North Perris extraction wells should have no impact on the EGETS nor the contaminated groundwater plumes the system is treating. The monitoring of both systems and the associated groundwater plumes by the responsible parties, along with ongoing communication between the Air Force and the Eastern Municipal Water District, should help avoid any unanticipated impacts to either groundwater treatment operation.

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6 Implementation Plan

The Implementation Plan presents the recommended courses of action (strategies) that have been developed through collaboration among project partners. Since the March ARB CUS is the result of a collaborative planning process, the strategies truly represent a consensus-based plan and a realistic and coordinated approach to compatibility planning.

The Implementation Plan is the heart of the March ARB CUS and includes a variety of actions that promote education, communication, compatible land use, and resource planning. Upon implementation of the strategies, existing and potential compatibility issues arising from the civilian/military interface can be eliminated.

The CUS is not an enforceable plan, but rather a set of recommendations. The key to successfully implementing the strategies is the establishment of a March ARB CUS Partnership Committee to monitor progress and to address future compatibility issues as they arise.

The March ARB CUS serves as a planning tool to assist in guiding compatible growth and maintaining the balance between the needs and interests of both the community and the military. The goal of compatibility planning is to promote an environment where both community and military entities communicate, coordinate, and implement mutually supportive actions.

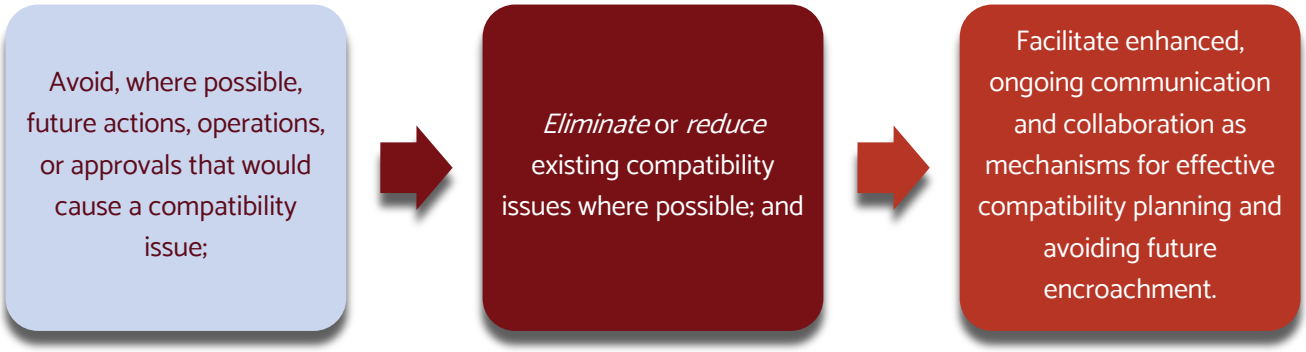
6.1 Implementation Plan Guidelines

The key to a successful implementation plan is balancing the different needs of all the involved stakeholders. To produce an equitable plan, several guidelines were used as the basis for strategy development:

- Recommended strategies must not result in the taking of property value, meaning rendering the property undevelopable or unable to achieve economic gain by the removal of development rights defined by state law. Some of the recommended strategies may involve establishing conservation easements on private property, but only if landowners are willing to take such actions.
- To avoid issues relating to the non-compliance of existing land uses, any zoning amendments or regulatory changes should include "grandfather" clauses to allow existing legal uses to be retained.
- Any proposed changes to regulatory or policy guidance, such as to zoning ordinances or general/comprehensive plans, should not affect properties that have existing entitlements or that have been previously approved for development.
- To minimize regulation, implementation of some strategies is recommended only for the specific geographic areas within which relevant issues occur.
- Some recommended strategies can be implemented only with new legislation.
- Any strategy that involves developing new regulatory measures or updating existing ones, such as amending zoning ordinances or adding new zoning overlay districts to existing zoning ordinances, and any strategy that amends municipal guidance documents, such as community general plans or county comprehensive plans, is subject to all legal processes required by California legislation and local regulations before implementation. Consequently, some recommended strategies may involve the notification of affected and potentially affected property owners and/or land management entities, as well as public hearings.
- As in other planning processes that include numerous stakeholders, the challenge here is to create a solution or strategy for outcomes that meet the needs of all parties. In lieu of eliminating strategies that do not have complete buy-in from all stakeholders, each strategy may be further refined to create multiple approaches that address the same issue in tailored, community-specific ways.
- Since state and federal regulations are subject to change, implementing jurisdictions or parties should ensure that no conflicts have arisen between strategies and local, state, or federal laws prior to implementation.

6.2 How to Read the Implementation Plan

The strategies presented in this chapter address the compatibility issues that were identified while preparing the March ARB CUS and constitute the CUS Implementation Plan. The purpose of each strategy is to:



The strategies include information about when and how they should be implemented and are grouped according to the compatibility issue they address. The following paragraphs provide an overview of how to read the Implementation Plan.

Issue Box. The issue box that identifies the specific compatibility issue being addressed is presented before each recommended strategy or set of strategies.

Strategy Box. The descriptive title of each strategy is presented in bold in the strategy box. Each title starts with a unique alphanumeric identifier that provides an easy reference and further encodes the related, general compatibility factor abbreviation and a unique numeric identifier (e.g., COM-1, COM 1B, etc.). This descriptive title is followed by the complete strategy statement or recommended action.

Strategy Rows. Each strategy is presented in two rows in the table. The first row includes a description of the strategy and the parties who are responsible for its implementation. The second row identifies the type of strategy, the timeframe suggested for implementation, the area where the strategy should be implemented, and the level at which implementation is prioritized.

Party Column. A column along the right side of the strategy boxes identifies the stakeholders who should serve as either a "Responsible Party" or a "Partner." Responsible Parties are responsible for implementing the strategy, while Partners play supporting roles.

Strategy Type. This box identifies the type of tool that a strategy constitutes. Strategy types are indicated by the icons shown below. Some strategies constitute multiple types, such that multiple icons will be listed.

 Acquisition

 Coordination/Communication

 Education/Awareness

 Easement

 Legislative

 General Plan/Comprehensive Plan

 Partnership

 Planning

 Policies

 Process

 Real Estate Disclosure

 Regulations

 Study

 Zoning

Strategies that are marked with an  icon may be eligible for follow-on implementation funding from the OLDCC. Parties responsible for implementation will have to apply for and be awarded OLDCC or other grants. Designation via this icon in the CUS Implementation Plan represents a potential funding opportunity, with eligibility determined by the granting agency or agencies. It should be noted that OLDCC provides funding to communities and local government organizations, but not to the U.S. Army or other DoD entities.

Timeframe Box. This box presents the recommended timeframe in which a strategy should be implemented. The timeframes represent multi-year periods during which strategies should be initiated or indicate actions that should be ongoing, whether continuous, intermittent, or as needed.

Short-term (0-2 years). Strategy is to be initiated within 0-2 years following March ARB CUS completion.

Mid-term (2-5 years). Strategy is to be initiated within 2-5 years following March ARB CUS completion.

Long-term (5+ years). Strategy is to be initiated in 5 or more years following March ARB CUS completion.

Ongoing. Strategy is to be implemented on a continuous, intermittent, or as-needed basis.

Priority Box. Similar to level of importance, the priority box indicates the degree to which implementation of a strategy is a priority. Implementation may be a low, medium, or high priority.

6.3 Implementation Plan

Anti-Terrorism/Force Protection (AT/FP) Issues

AT-1: There are concerns about development next to or along the March ARB security perimeter fence line.

Physical development of large warehouses and other tall structures directly along the perimeter of March ARB presents security challenges to Air Force security requirements. Current setbacks and building height restrictions for new construction along the boundary of the air reserve base may not be compatible with air installation security requirements.

Recommended Strategy

AT-1A: Establish setbacks and maximum allowable heights for future development.

Revise setback requirements and/or maximum allowable heights for structures to be consistent with primary structures for zoning districts that abut March ARB installation boundary. Setback requirements and maximum allowable heights for structures should be established in consideration of military force protection and base security.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- ALUC

Partner(s)

- March ARB
- March IPA

Strategy Type

Timeframe

Priority

AT-1B: Continue collaboration and coordination with March JPA and adjacent commercial activities regarding base security.

March ARB security forces need to work with March JPA and adjacent commercial businesses and activities to address security issues that are occurring on properties that can be potential risks to the March mission. March ARB should work with March JPA and local law enforcement on security design (CPTED principles) when developing properties adjacent to the base.

Responsible Party(ies)

- March ARB

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

AT-1C: Foster collaborative efforts with local law enforcement agencies.

March ARB security forces should continue to work with local LEAs to address crime prevention and security concerns surrounding the base. The base security forces should also improve communication and coordination with local law enforcement to provide layered security for surrounding areas and businesses while protecting the March mission and force protection.

Responsible Party(ies)

- March ARB

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside

Strategy Type

Timeframe

Priority

AT-1D: Promote commercial security awareness.

Work with the CUS Partners regarding land use control in the immediate area surrounding March ARB to develop security awareness targeted towards commercial activities. Information should address March ARB security considerations and be made available on CUS Partner websites to maximize awareness.

Responsible Party(ies)

- City of Perris
- City of Moreno Valley
- City of Riverside
- March ARB
- March JPA/MIPAA

Partner(s)

- Riverside County Office of Economic Development

Strategy Type

Timeframe

Priority

AT-1E: Initiate "Eyes on March ARB" Program.

Engage local community groups and jurisdictions to work with LEAs to create a March ARB Community Watch Program, whereby citizens and public safety officers that witness trespassing onto the installation inform a designated point of contact at the base.

Responsible Party(ies)

- March ARB

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

AT-2: Transfer of Green Acres from March JPA to private commercial property presents a force protection risk for unvetted individuals to gain access or conduct surveillance/data collection.

The potential future transfer of Green Acres to private commercial interests presents an unusual force protection concern and potential risk for March ARB. Currently, the base perimeter security fence follows a gerrymandered path that divides this contiguous historic district between JPA-managed properties and installation facilities, including headquarters facilities. The effectual subdivision of Green Acres from the March Field Historic District presents a unique security challenge as the recommended minimum standoff distances for an external buffer cannot be achieved without the demolition of existing structures.

Recommended Strategy

AT-2A: Continue ongoing coordination with March ARB regarding final disposition and conditions of acceptance for future property transfer of Green Acres during the sunset of March JPA reuse authority.

Continued ongoing coordination between March ARB and March JPA with regard to the final disposition of projects and properties within the Northeast Corner of March JPA will mitigate any perceived or potential risk. Record any conditions of transfer with deed restrictions to ensure that setback requirements are enforced in perpetuity.

NOTE: During the completion of the MCUS, the MJPA voted to retain ownership of the Green Acres community and work with March ARB on a military housing program. This decision by the MJPA implements this recommended strategy

Responsible Party(ies)

- March JPA/MIPAA

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

AT-2B: Upgrade perimeter security fencing and stand-off distances within the March Field Historic District between Green Acres and March ARB on-base facilities.

March ARB should prioritize installation security upgrades within the March Field Historic District that incorporate DoD force protection standards, while ensuring historic district architectural integrity.

Responsible Party(ies)

- March JPA/MIPAA

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

Climate Change (CE) Issues

CE-1: Rising groundwater impacts existing facilities and the design and construction of new facilities on March ARB.

The rising groundwater table has the potential to impact existing facilities/infrastructure on March ARB. This includes impacts to the airfield runways and related facilities. In addition, new designs and construction projects must account for impacts such as saturated soils that create significant technical, budget, and schedule challenges.
(See also WQQ-3)

Recommended Strategy

CE-1A: Collaborate with agencies involved with the North Perris Groundwater Project.

March ARB should collaborate with the Eastern Municipal Water District and the Western Municipal Water District for the implementation/execution of the North Perris Groundwater Project to monitor groundwater levels, which may affect new designs and construction projects on the airfield. When fully operational the project will result in reduced groundwater levels under the installation. This, in turn, may potentially alleviate the rising groundwater directly below March ARB and the surrounding area.

Responsible Party(ies)

- March ARB
- Eastern Municipal Water District
- Western Municipal Water District

Partner(s)

- Riverside County
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

CE-1B: Establish local design standards for rising groundwater.

Until the rising groundwater is reduced, March ARB should continue to ensure all new construction and major repair projects account for high water tables and associated soil issues that can affect the stability of facility foundations and other underground infrastructure. March ARB should ensure that the required engineering and design specifications, such as remedial grading and shallow foundations, are incorporated to overcome high water table issues and mitigate this risk.

Responsible Party(ies)

- March ARB
- Eastern Municipal Water District
- Western Municipal Water District

Partner(s)

- CDWR
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

CE-1C: March ARB should closely monitor groundwater levels.

March ARB should closely monitor groundwater under the installation to assess if levels are rising or falling during the North Perris Groundwater Project execution. Continually rising and /or excessively falling water levels may be a cause for concern.

Responsible Party(ies)

- March ARB
- Eastern Municipal Water District
- Western Municipal Water District

Partner(s)

- City of Perris
- CDWR
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

CE-1D: Update local groundwater management plans for March installation projects and requirements.

Groundwater management plans should be updated to incorporate provisions and coordination with military operations in the area to ensure future actions and improvements do not adversely impact the March ARB facilities and operations.

Responsible Party(ies)

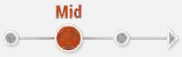
- March ARB
- Eastern Municipal Water District
- Western Municipal Water District

Partner(s)

- CDWR
- March JPA/MIPAA

Strategy Type

Timeframe



Priority

CE-1E: Evaluate buried utilities on the installation for the effects of rising groundwater levels.

March ARB should evaluate buried utilities during preventative and corrective maintenance (PM/CM) actions that require access to underground systems. Any deficiencies noted with regard to groundwater intrusion should be documented for future permanent resolution. In addition, actions that can be implemented during PM/CM to temporarily mitigate the problem should be taken.

Responsible Party(ies)

- March ARB
- Eastern Municipal Water District
- Western Municipal Water District

Partner(s)

- March JPA/MIPAA

Strategy Type

Timeframe

Priority

CE-1F: March ARB should advocate for a study to investigate existing and potential future impacts to submerged underground utilities.

The study should include recommendations to eliminate or mitigate any identified concerns.

Responsible Party(ies)

- March ARB

Partner(s)

- Riverside County
- ALUC
- City of Riverside
- City of Perris
- City of Moreno Valley
- RCFC&WCD
- March JPA/MIPAA
- Eastern Municipal Water District
- Western Municipal Water District

Strategy Type

Timeframe

Priority

Communication/Coordination (COM) Issues

COM-1 Formalized communication is limited between March ARB and regional planning entities.

There is no official standing forum for March ARB and the communities/agencies around the installation to identify, communicate and coordinate on topics of interest to all parties. March ARB currently works individually with local communities/agencies on an as-needed basis. As issues arise, communication and coordination are handled on a case-by-case basis through the exchange of emails, phone calls, or other methods between March ARB and individuals of the jurisdiction/agency. Lack of a formal standing communication/coordination process increases the likelihood of missed opportunities and risks dealing with issues "late to need" or "after the fact." Staffing shortages on base further undermine responsiveness as it concerns formalized communication between March ARB and surrounding planning entities/community partners.

Recommended Strategy

COM-1A: Establish a CUS Implementation Coordination Committee.

Establish a CUS Implementation Coordination Committee to provide oversight and monitoring of the CUS implementation and facilitate efficient and effective coordination among the CUS partners. Consider establishing a subcommittee comprising CUS Technical Advisory Group members to provide technical assistance during the CUS implementation.

Responsible Party(ies)

- Riverside County

Partner(s)

- Air Force
- March ARB
- City of Riverside
- City of Perris
- City of Moreno Valley
- March JPA/MIPAA
- ALUC
- Other stakeholder groups

Strategy Type

Timeframe

Priority

COM-1B: Invite March ARB representative to serve as a non-voting technical advisor.

Invite a March ARB representative to serve as a non-voting technical advisor to nearby jurisdiction planning commission/group to allow for March ARB to provide input on proposed developments that may impact the mission. Formalize the position through a resolution or an MOA. It may not be necessary for the March ARB representative to attend every meeting, and they will attend based on relevance and staff availability. Consideration should be given to the formation of March ARB/Inland Port Military Affairs Sub-Committee.

Responsible Party(ties)

- ALUC

Partner(s)

- March ARB
- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

COM-1C: Incorporate March ARB as one of the agencies that review development applications at the initial stages.

Establish an MOU between March ARB and the jurisdiction, formalizing a process that provides copies of all conditional use, master plan, subdivision, rezoning, annexation, etc. to be reviewed by March ARB Subject Matter Experts (SMEs). Such review periods shall conform with existing community review periods for comment. This supports a proactive approach to identifying potential conflicts early in the proposed development application phase. Thus, coordination needs to be made externally to ensure a "one-stop" source is requesting input from the Base. This strategy could be further aligned to a March ARB/Inland Port Military Affairs Sub-Committee, if formed as recommended in COM-1B. A standardized MOU with the ALUC instead of 5 separate MOUs could provide efficiency and consistency among jurisdictions for March ARB development reviews.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- ALUC

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

COM-1D: Provide mutual briefings.

To perpetually enhance support and cooperation and reinforce the partnership between March ARB and local jurisdictions, the installation should annually present a "state of the installation" briefing including strategic goals, operational changes, and proposed construction projects that may impact the greater community to county commissions, city councils, congressional delegations, regional elected and appointed officials, and key partners within the project area. The counties and cities should provide annual briefings to March ARB of changes within the communities that may impact the installation including comprehensive plans, master plans, transportation plans, zoning, development projects, and capital improvement plans.

Responsible Party(ies)

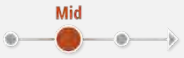
- March ARB

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- ALUC

Strategy Type

Timeframe



Priority

COM-1E: March ARB should establish a local Air Force Partnership program.

March ARB should formally establish an Air Force P4 Partnership with local community partners. This partnership should establish a quarterly (or other time interval) P4 forum to share information. The P4 should consist of military installation leadership, local officials, and key staff. March ARB could provide updated information to the partners and/or local communities when changes in operations or mission arise, among other updates. The communities should regularly communicate relevant military-related information to the public through public websites, social media platforms, and other forms of noticing. Potential issues to be addressed:

- Capital infrastructure projects
- Environmental projects
- Resiliency
- Security
- Housing

Responsible Party(ies)

- March ARB

Partner(s)

- Riverside County
- ALUC
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

COM-2: Changes in key organization leadership can create strategic communication gaps.

Leadership changes at the installation level at March ARB, and with the directors of the ALUC, the March JPA, and MIPAA, can impact the relationship between these organizations and affect positive communication, which can, depending on timing, also affect development application reviews

Recommended Strategy

COM-2A: Conduct formal office calls and mission briefings to incoming organization directors and March ARB commanders.

March ARB and CUS partner entities and organizations should conduct office calls when a change in leadership has occurred to discuss the CUS purpose, current issues, and general relationship and expectations between the various groups.

Responsible Party(ies)
- ALUC
- March ARB

Partner(s)
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

COM-2B: Provide ALUC agenda and projects to March ARB SME for project reviews, prior to the ALUC meeting.

ALUC should continue to work with local SME, such as the installation community planner, to formalize a review process that will facilitate receipt of March ARB feedback on projects sufficiently in advance of the ALUC meeting. March ARB is responsible for providing a SME for project reviews.

Responsible Party(ies)
- ALUC

Partner(s)
- March ARB

Strategy Type

Timeframe

Priority

COM-2C: Provide March JPA/TAC agenda and projects to March ARB SME for project reviews, prior to the TAC meeting.

March ARB representatives should routinely attend TAC monthly meetings to maintain situational awareness.

Responsible Party(ies)
- March JPA/MIPAA

Partner(s)
- March ARB

Strategy Type

Timeframe

Priority

COM-2D: Foster key staff relationships between key organizations.

Develop relationships at the senior staff level between March ARB and March JPA, and March ARB and ALUC. Fostering key staff relationships, especially with civil service deputies, will mitigate leadership turnover by leveraging the positional longevity of civil service senior staff with external counterparts at ALUC, March JPA, and other external organizations. This strategy can be incorporated into a March ARB Air Force Partnership Program (COM-1E), if established.

Responsible Party(ies)

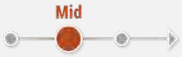
- ALUC
- March ARB

Partner(s)

- March JPA/MIPAA

Strategy Type

Timeframe



Priority

COM-3: In certain circumstances, March ARB is required to route proposed installation responses for development reviews through its parent headquarters at AFRC at Robins AFB, Georgia.

The requirement to route proposed development application review through its parent headquarters may delay response to the review request, thus not allowing for formal March ARB review and comment to be considered in a timely manner.

Recommended Strategy

COM-3A: Seek authority from AFRC for March ARB to provide local response for routine development review requests.

Capital improvement projects may still require AFRC review. May require MOUs/MOAs to codify the process.

Responsible Party(ies)

- AFRC
- March ARB

Partner(s)

- Riverside County
- ALUC
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

COM-4: Formalized communication is limited between March ARB and the Eastern Municipal Water District.

March ARB has minimal communication/coordination with the Eastern Municipal Water District. While the Eastern Municipal Water District does not provide services directly to the installation, they are very closely involved with projects and actions that directly impact the installation mission essential operations. In some cases, the Eastern Municipal Water District is in close partnership with agencies, such as the Western Municipal Water District, that directly support March ARB. The lack of a formal communication/coordination process with the Eastern Municipal Water District increases the potential for impacts on March ARB activities.

Recommended Strategy

COM-4A: Host bi-annual or quarterly regional water coordination meetings.

March ARB, Eastern Municipal Water District, and Western Municipal Water District should create a bi-annual or quarterly forum to discuss upcoming projects directly affecting the base. Work with installation SME to establish a charter for the regional water coordination meetings. This strategy can be incorporated into a March ARB Air Force Partnership Program (COM-1E), if established.

Responsible Party(ies)

- March ARB
- Eastern Municipal Water District
- Western Municipal Water District

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

COM-4B: Develop MOU between March ARB, Eastern Municipal Water District, and Western Municipal Water District for reviews on upcoming capital improvement projects directly affecting the base.

Ensure proper contact information, project location information, a project description, and a deadline for comments are provided to the base representative as part of the agreement.

Responsible Party(ies)

- March ARB
- Eastern Municipal Water District
- Western Municipal Water District

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

COM-5: Post March JPA sunset communication with March ARB.

The March JPA currently functions as the liaison agency for March ARB on development review requests. With the anticipated sunset of the March JPA and transition of authority back to the conferring local governments, there is concern that future development on former Air Force property currently under the March JPA may not be adequately communicated to the installation.

Recommended Strategy

COM-5A: Riverside County ALUC, MIPAA, and March ARB should continue to communicate and collaborate on future development projects, both for private development and public capital improvement projects.

Riverside County ALUC, MIPAA, and March ARB should consider working with local jurisdictions and relevant agencies for planning review and comment. This would include the review process for certain types of development proposals, development applications, and other land use policy or regulatory changes that may impact military mission at the March ARB. Special consideration/attention should be given to the conveyance of land in CZs and APZs. March JPA should convey any property inside CZs to the Air Force or other controlling interest which can assure no further development on property. This strategy could be further aligned to a March ARB/Inland Port Military Affairs Sub-Committee, if formed as recommended in COM-1B.

Responsible Party(ies)

- March ARB
- ALUC
- March JPA/MIPAA

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside

Strategy Type

Timeframe

Priority

Frequency Spectrum (FS) Issues

FS-1: Implementation of 5G networks in the airfield vicinity may impact flight safety.

There is a concern that the new 5G networks may cause interference with aircraft radar altimeter readings. This poses a flight safety hazard, especially during instrument landings. In addition, there is a possibility that 5G may also impact the ASR systems at March ARB.

Recommended Strategy

FS-1A: Apply 5G "clear corridors", per FAA guidance, for/around March ARB.

Consider revising operating procedures and applying clear corridors, as identified in CFR 87 FR 4787, when the presence of 5G C-Band interference has been identified by Notices to Air Missions or by other means.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside

Strategy Type

Timeframe

Priority

FS-1B: Monitor FAA 5G policy changes and DoD Joint Interagency 5G research.

In addition to staying current with FAA 5G policy guidance and notices, March ARB and MIPAA should monitor results from DoD Joint Interagency 5G Radar Altimeter Interference (JI-FRAI) Team which has been tasked with evaluating the impact of 5G on military avionics. Gather information as applicable from Office of Secretary of Defense (OSD) Joint Test and Evaluation funded quick reaction test (QRT) on 5G interference.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside

Strategy Type

Timeframe

Priority

FS-1C: Establish a 5G buffer zone.

Establish a 5G buffer zone of at least one mile around the runways, to identify and evaluate 5G tower development applications, or consider adoption of a temporary moratorium on 5G tower construction, until such time as national FAA and FCC guidance is mature. The FAA has established a 1-mile 5G-free buffer zone at 50 major airports across the country. With this precedent set and potential new airframes coming online for March ARB, it is important to ensure pilots are able to receive key landing instructions without signal interference on initial approach and departure.

Note: The State of California has imposed fast-track processing requirements as part of a California state policy to quickly complete 5g which may severely limit the ability of local jurisdictions to regulate these projects.

Responsible Party(ies)

- March ARB
- ALUC
- March JPA/MIPAA

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside

Strategy Type

Timeframe

Priority

Land Use (LU) Issues

LU-1: Riverside County ALUCP does not fully identify aircraft safety zones for Runway 12-30.

The 2014 ALUCP for March ARB identifies Runway 12-30 as a 3,000-foot, B-1 small runway rated at 12,500 lbs. and primarily for small single- and twin-engine aircraft. The ALUCP also notes that the runway's 1,000-foot CZs do not extend off Air Force property. No aircraft APZs are identified or mapped for this runway in the ALUCP.

Recommended Strategy

LU-1A: Update the Airport Compatible Use Land Use Compatibility Plan to include recommendations from the 2018 AICUZ with regards to Runway 12-30.

Riverside County and the ALUC should work with March ARB to update the ALUCP to account for current and future operational requirements.

Responsible Party(ies)

- Riverside County
- ALUC

Partner(s)

- March ARB
- March JPA/ MIPAA

Strategy Type

Timeframe

Priority

LU-1B: Involve communities in future ALUCP updates.

ALUC should involve CUS partner community staff in all future ALUCP updates. These updates should include determining incompatibilities related to General Plan designations and/or zoning of vacant or underutilized land and ensuring that CUS partner communities are aware of any changes to noise contours or safety zones that should be updated in their respective general plans and/or zoning maps.

Responsible Party(ies)

- March ARB
- ALUC

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

LU-2: Commercial and industrial land use inside the APZs I and II of Runway 14- 32 and Runway 12-30 south is nearing complete buildout at a maximum lot coverage of 50%.

Heavy commercial and industrial development within the main runway APZs constitutes a potentially significant risk for structural impact from air mishaps occurring within the APZs. The standard probability of a mishap, if one occurs, is 10% within APZ I; the probability of a mishap within APZ II is 5.6%.

Recommended Strategy

LU-2A: Ensure that future development complies with 2018 AICUZ recommendations.

The development reviewing authority for the CUS partner communities should require proof of compliance with human intensity requirements identified in DoD AICUZ Guidance, also described in the 2018 March ARB AICUZ Study.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- Riverside County ALUC

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

LU-2B: Foster enhanced public awareness and education through accurate mapping.

Participate in the regional GIS consortium to share and exchange current and accurate GIS data relevant to base planning and military compatibility. Make changes available to the public.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- Riverside County ALUC

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

LU-3: There is concern regarding the inconsistent application of community intensity standards for developments within the March ARB runway safety zone.

Floor-to-area ratio (FAR) recommendations for APZs as recommended by DoDI 4165.57 are sometimes interpreted, or applied, differently by different jurisdictions during review of development applications. This can create challenges during ALUC review of project development applications within its purview.

Recommended Strategy

LU-3A: Clarify and standardize the intensity standards in the ALUCP and local zoning ordinances.

The APZ limitations for the people per acre intensity need to be standardized to make the application of AICUZ recommendations more consistent between jurisdictions and planning entities. In some cases, the intensity recommendation of no more than 25 persons per acre for APZ I and 50 persons for APZ II is interpreted as applying to the entire parcel. In other cases, the standard is interpreted as applying only to occupancy rates within a structure's footprint. These regulations need to be standardized among the surrounding communities for consistent application and enforcement. Reduce maximum intensity per any single acre clause in ALUCP to be more consistent with AICUZ intensity recommendations.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

LU-4: Existing infrastructure and development within the CZs for the March ARB runway create a potential safety hazard.

Private and commercial structures inside the southern CZ of Runway 14-32 conflict with DoD AICUZ guidance and Air Force recommendations for graded CZs. The presence of activities within the CZ presents public safety hazards and risks to flight crews.

Recommended Strategy

LU-4A: Secure runway Clear Zones.

Secure runway Clear Zone (CZ) fee simple acquisition through the use of Readiness and Environmental Protection Integration (REPI) authority using Air Force service funding. For properties that are partially within and partially outside the CZ, with structures outside the CZ, pursue the acquisition of avigation easements to ensure that no structures are built or extended into the CZ. Establish safety area setback standards in the local zoning code for any new development. This will facilitate the protection of this area for aviation operations and protect the public from safety hazards associated with aviation operations.

Responsible Party(ies)

- Air Force
- March ARB

Partner(s)

- DoD
- Private property owners

Strategy Type

Timeframe

Priority

LU-4B: Address current public infrastructure inside runway Clear Zones.

Ensure public roadways, utilities, and other public infrastructure within the CZ comply with ALUCP obstruction requirements for Zone A. Consider relocation, rerouting, and/or adoption of frangibility standards for critical components that cannot avoid crossing the clear zone. This will help minimize risks to flight crews. Projects identified by this strategy may qualify for DCIP grant award. Extreme consideration should be given to not widen existing, or extending new, road segments and adding additional above-ground utilities within the CZs.

Responsible Party(ies)

- March ARB
- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Partner(s)

- Caltrans
- Riverside Co. Flood Control
- Local utilities

Strategy Type

Timeframe

Priority

LU-4C: Develop a Clear Zone strategy.

CUS partner communities located within the March ARB CZs should develop a strategy to address existing private and public structures within the CZ. CUS partner communities located within the March ARB CZs should develop a strategy to address existing private and public structures within the CZ. Develop a strategy considering recommended acquisition, planning, and coordination strategies this CUS recommends. Consider developing an incentive program to purchase CZ parcels from willing private landowners.

Responsible Party(ies)

- March ARB
- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Partner(s)

- Riverside County Office of Economic Development
- Private property owners

Strategy Type

Timeframe

Priority

LU-4D: Continue coordination for infrastructure planning with March ARB.

March ARB and the CUS partnership communities should continue to coordinate on any current or future infrastructure projects within the CZ. Coordination should begin early in the process and continue throughout the life of the project to reduce costs and lost time on plan changes.

Responsible Party(ies)

- March ARB
- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- Caltrans

Strategy Type

Timeframe

Priority

LU-5: The location of existing residential areas within the March ARB airfield runway APZ creates a potential safety hazard.

The presence of an existing residential neighborhood at Ramona Expressway and Webster Avenue inside the southern APZ I of Runway 14-32 conflicts with DoD AICUZ and Air Force recommendations for APZs. DoD recommends no residential land use in APZ I and no more than two dwelling units per acre within APZ II.

Recommended Strategy

LU-5A: Increase Public Awareness of CZs and APZs.

Increase information sharing between March ARB and the community regarding CZs and APZs, development compatibility, and mitigation options. Develop educational materials or maps displaying March ARB CZs and APZs with the goal of dissuading new residential development within these aircraft accident potential zones.

Responsible Party(ies)

- March ARB
- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- ALUC

Partner(s)

- Riverside County Office of Economic Development

Strategy Type

Timeframe

Priority

LU-5B: Incentivize the transfer of residential property to industrial property by means of a buyout or relocation package.

As noted in the 2017 March APS, leverage economic development grants, industry partnership, and government tax incentives or relocation assistance through voluntary programs with willing landowners to transfer existing residential land use to industrial or commercial use. Additionally, FEMA offers Hazard Mitigation Assistance (HMA) grant programs through buyouts of individual properties to relocate homeowners from hazard prone areas. The BRIC grant program is authorized for this purpose.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside

Partner(s)

- March JPA/MIPAA
- Riverside County EDA
- Local real estate organizations
- NAIOP So Cal

Strategy Type

Timeframe

Priority

LU-5C: Consider application of mandatory plat note recording.

Consider requiring recording of plat note for future transfer of property for all residential properties located within any APZ of March ARB that the property is within an aviation APZ.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside

Partner(s)

- Riverside County Office of Economic Development
- Local real estate organizations
- NAIOP So Cal

Strategy Type

Timeframe

Priority

LU-5D: Amend state law to address additional dwelling units inside APZs.

Amend state law to allow jurisdictions to limit additional dwelling units on properties in CZ and APZs. The existence of legal nonconforming residential uses within the APZs south of March ARB creates the need for legislation at the state level to allow jurisdictions to limit the potential expansion of residential use on these properties.

Responsible Party(ies)

- Riverside County
- City of Riverside
- City of Perris
- City of Moreno Valley
- Other appropriate entities

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

LU-6: There is concern with altimeter inaccuracy on approach/departure due to incompatible development.

Air Force pilots report "bouncing readouts" on final approach due to the significant size and placement of industrial buildings beneath the flight path within APZs I and II. This can affect aircraft flight controls and creates additional pilot demand to ensure flight controls are stable during landings.

Recommended Strategy

LU-6A: Advise all pilots flying aircraft equipped with radio altimeters of this issue.

Develop a NOTAM for pilots flying aircraft equipped with radio altimeters that inaccurate readings may occur beneath the flight path within APZs I and II upon approach/departure.

Responsible Party(ies)

- March ARB
- MIPAA

Partner(s)

- FAA

Strategy Type

Timeframe

Priority

Light and Glare (LG) Issues

LG-1: Increased glare from residential and commercial solar array installations may pose a potential hazard to safe flight operations and ATC operations at March ARB.

The installation of multiple rooftop solar energy systems on residential homes and commercial facilities around March ARB may increase light reflection and glare/glint, which may have ocular impacts on flight crews or air traffic control tower personnel operating on or near the airfield.

Recommended Strategy

LG-1A: Update plans and regulations for commercial solar energy development.

Update plans and regulations to include guidance for commercial solar energy development within ALUC-prescribed airport influence areas for March Airfield. CUS partner communities should consider code updates including requirements for commercial solar energy development that align with Military and Aviation and Installation Assurance Siting Clearinghouse processes. Updated regulations should also include coordination with the ALUC, March JPA, and March ARB community planning office.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- ALUC

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

LG-1B: Require Solar Glare Hazard Analysis for all solar projects within the airport influence area.

Require any proposed commercial, industrial or subdivision installation of ground-based, parking shade, or rooftop solar energy (PV or SHW) project to provide ocular impact assessment using the SGHAT or other similar glare analysis tool to evaluate potential glare impacts on airfield landing approaches and ATC tower. Require developers to provide an ocular impact statement for any roof structures which install solar roof panels (many current commercial solar systems are compliant). Consider the application of compliance standards for existing solar or high-light reflective roof surfaces.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- ALUC

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

LG-2: Address the cumulative impacts of ambient lighting due to increased development outside of ALUC authority.

Operational flying units at March ARB routinely conduct night training operations. March ARB has identified concerns with ambient artificial nighttime outdoor lighting around the base that is affecting the unit's ability to meet military readiness training requirements for aircrew proficiency. Over the last 10 to 15 years, development has increased the cumulative effects of artificial nighttime outdoor lighting.

Recommended Strategy

LG-2A: March ARB should adopt dark skies compliant installation design standards.

Consider adopting DoD guidance on same UFC 3-530-01, Interior and Exterior Lighting Systems and Controls.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside

Strategy Type

Timeframe

Priority

LG-2B: Adopt lighting ordinances for dark skies.

Communities should consider adopting dark sky ordinances or amend current dark sky ordinances to decrease light pollution in the region.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

LG-2C: Enforce all lighting and dark sky ordinances.

Enforcement of current lighting and dark sky ordinances is important for maintaining effective ordinances.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

LG-2D: Create a dark sky educational awareness program.

Demonstrate the importance of dark skies for the region, its cumulative effect, and provide information on light glow effects.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

Roadway Capacity (RC) Issues

RC-1: There is concern that traffic queueing to enter March ARB impedes the flow of traffic along Cactus Avenue.

Specific concerns have been expressed regarding long lines of traffic queueing to enter through the main ACP for March ARB, which is accessed directly from Cactus Avenue. The location of the ACP, and its current design, may impede the free flow of local traffic along Cactus Avenue.

Recommended Strategy

RC-1A: Conduct a Military Needs Study for March ARB.

The Riverside County Transportation Commission, working with March ARB, should conduct a military transportation needs study for March ARB. The study should serve, at a minimum, the following purposes: Determine military transportation needs. Provide a safe and efficient transportation network for the military and civilian community around March ARB. Identify areas of greatest traffic congestion and times it occurs. Establish priority areas for improvement. Develop strategies to address the issues/concerns identified. Increase active transportation options around March ARB.

Responsible Party(ies)

- March ARB
- City of Moreno Valley
- Riverside County Transportation Commission

Partner(s)

- Caltrans
- March JPA/MIPAA
- City of Riverside
- City of Perris
- County of Riverside

Strategy Type

Timeframe

Priority

RC-1B: Request SDDCTEA Traffic Engineering Study.

March ARB should make a request through AFRC for SDDCTEA to conduct a traffic engineering study of the current ACP/ECF and evaluate relocation of the current gate from Cactus Avenue to Riverside Drive.

Responsible Party(ies)

- March ARB
- AFRC

Partner(s)

- March JPA/MIPAA
- County of Riverside
- ALUC

Strategy Type

Timeframe

Priority

RC-1C: Coordinate with City of Moreno Valley for road enhancements to support access/gate improvements.

After Strategy RC-1A is completed, the City of Moreno Valley and March ARB should coordinate to develop a set of priorities and request funding for roadway and gate improvements.

Responsible Party(ies)

- March ARB
- City of Moreno Valley

Partner(s)

- Caltrans

Strategy Type

Timeframe

Priority

RC-1D: Partner with City of Moreno Valley, Caltrans, and Riverside County to build a DCIP grant funding request.

DCIP application should be based on requirements supported by traffic engineering or needs study (Strategy RC-1A or RC-1B).

Responsible Party(ies)

- March ARB
- ALUC
- Riverside County
- City of Moreno Valley

Partner(s)

- Caltrans
- AFRC
- Riverside County Transportation Commission
- SCAG

Strategy Type

Timeframe

Priority

RC-1E: Evaluate staggered work shifts.

March ARB should evaluate, on an ongoing basis, utilizing and optimizing staggered work shift start times to spread out the number of personnel entering and exiting the base and reduce vehicle volumes during peak traffic.

Responsible Party(ies)

- March ARB

Partner(s)

- March JPA/MIPAA

Strategy Type

Timeframe

Priority

Safety (SA) Issues

SA-1: Increased development is encouraging wildlife to utilize March ARB airfield as habitat.

Increased development in the direct vicinity of March ARB, along with ponding stormwater on the airfield, has the potential to encourage bird/wildlife movement to the airfield, causing increased safety concerns for airfield management and pilots. The abundance of ground squirrels and stray animals increases the chances of large predators moving into the airfield environment in search of food and water. This also creates the increased potential for FOD to aircraft, and damage to critical systems on the airfield, due to animals potentially chewing wires. *This finding includes concerns with, but is not exclusive to, the California ground squirrel, horned larks, and coyotes.*

Recommended Strategy

SA-1A: March ARB should continue to take actions to eliminate small low areas on and around the airfield.

Fill dirt should be used to raise low spots to level with surrounding land. Larger areas susceptible to ponding should be regraded to direct water away from the airfield and towards stormwater flow channels. See Strategies SM-1A, SM-1B and SM-1C, CE-1A, CE-1B, CE-1C, and CE-1D, all of which apply to this issue.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA

Partner(s)

- Air Force Civil Engineering Center
- Riverside County Flood Control

Strategy Type

Timeframe

Priority

SA-1B: Research and consider modifying local CEQA implementation guidance to address bird attractant potential as part of project design and conditions of approval.

Increasing bird and wildlife populations on the installation and airfield create multiple hazards and impacts for military operations, presenting an increased threat to airfield operations, including flying aircraft and associated personnel. There is a need to research possible modification of local CEQA regulations for guidance in an effort to reduce the potential bird attractants while maintaining compliance with CEQA.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Partner(s)

- Air Force

Strategy Type

Timeframe

Priority

SA-1C: Coordinate on wildlife policies.

Continue to coordinate and collaborate with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service on the inclusion of additional or revised wildlife policies that incorporate concerns related to BASH and assist in minimizing the risk of bird/wildlife airstrikes in areas proximate to military training sites. Formalize this coordination through an MOU.

Responsible Party(ies)

- March ARB
- Air Force
- California Department of Fish and Wildlife
- U.S. Fish and Wildlife Service

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

SA-1D: March ARB should continue to survey for California ground squirrels to identify population locations.

Additionally, March ARB should continue to implement depredation actions for California ground squirrels in accordance with the installation 2021 INRMP.

Responsible Party(ies)

- March ARB

Partner(s)

- California Department of Fish and Wildlife
- U.S. Fish and Wildlife Service

Strategy Type

Timeframe

Priority

SA-1E: Increase surrounding landowner awareness.

March ARB and the JPA should develop a detailed outreach and educational program to inform surrounding landowners on the impacts, scope, and effects of BASH and outline compatible solutions and techniques to minimize conflicts. Share ALUC wildlife hazard policies on CUS partnership websites.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA
- ALUC

Partner(s)

- Riverside County
- City of Riverside
- City of Perris
- City of Moreno Valley

Strategy Type

Timeframe

Priority

SA-1F: Amend zoning ordinances.

Amend zoning ordinances to incorporate Air Force AICUZ recommended guidance to ensure future land uses and zoning will be compatible with airfield operations and do not create increased risks for BASH incidents.

Responsible Party(ies)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA

Partner(s)

- Air Force Safety Office/BASH Program
- ALUC

Strategy Type

Timeframe

Priority

SA-2: There is concern with the location of critical roadways (I-215 and Cactus Avenue) within the March ARB runway CZ and APZ.

The presence of I-215 and its interchange with Cactus Avenue through the northern CZ of Runway 14-32, as well as local street infrastructure within the southern CZ, conflicts with USAF AICUZ recommendations for graded CZs.

Recommended Strategy

SA-2A: Secure runway CZ to gain positive control of non-public properties using REPI authority and Air Force funding to acquire fee simple title from willing landowners.

Partner with Riverside County EDA to pursue alternate acquisition strategies. This will facilitate the protection of this area for aviation operations and protect the general public from safety hazards associated with aviation operations.

Responsible Party(ies)

- March ARB

Partner(s)

- Air Force
- DoD
- Riverside County EDA

Strategy Type

Timeframe

Priority

SA-2B: Continue coordination for infrastructure planning with March ARB.

March ARB and the CUS partnership communities should continue to coordinate on current and future infrastructure extensions or capital improvements within CZs. Coordination should begin early in the process and continue throughout the life of the project to reduce costs and lost time on plan changes.

Responsible Party(ies)

- March ARB

Partner(s)

- Riverside County
- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- Caltrans
- Riverside County Flood Control

Strategy Type

Timeframe

Priority

SA-2C: March ARB should routinely conduct aviation mishap response training and exercises.

March ARB should routinely conduct aviation mishap response training and exercises with local emergency preparedness and response agencies for scenarios involving public roadways.

Responsible Party(ies)

- March ARB
- Riverside County Emergency Operations Center

Partner(s)

- City of Perris
- City of Moreno Valley
- City of Riverside
- March JPA/MIPAA
- Caltrans

Strategy Type

Timeframe

Priority

Stormwater Management (SM) Issues

SM-1: Flooding occurs along the perimeter of March ARB during significant rainfall events.

Flooding along Cactus Avenue, on the northern border between March ARB and the City of Moreno Valley, occurs during heavy rainfall. The flooding impacts traffic entering and leaving the base at the ECP. Heavy flooding has historically occurred along the eastern and western installation boundaries, resulting in infrastructure damage and traffic impacts both on and off the installation. The area along the western boundary of the base is impacted by stormwater runoff from I-215 and locations to the west.

Recommended Strategy

SM-1A: Riverside County Flood Control, March ARB, and managers for local USDA facilities should partner to fund and construct the 100% designed Cactus Avenue flood control channel along the northern base boundary and resolve any outstanding easement or rights-of-way acquisitions.

If necessary, seek federal grant funding from DCIP. Other stakeholder(s): Riverside County Flood Control, U.S. Department of Agriculture.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA

Partner(s)

- Riverside County Flood Control
- U.S. Department of Agriculture
- DoD
- Air Force

Strategy Type

Timeframe

Priority

SM-1B: Riverside County Flood Control should continue to work with March ARB and affected stakeholders to complete the Perris flood control channel along the western and southwestern base boundary.

These flood control channels are part of a planned system around the base designed to protect from flood events and safely move stormwater away from the installation and surrounding communities. The completion of these channels, and others, should solve many of the stormwater issues the base has experienced in the past and is currently experiencing. The completion may require reassessment to ensure movement of stormwater is occurring as designed.

Responsible Party(ies)

- Riverside County Flood Control

Partner(s)

- March ARB
- City of Perris
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

SM-1C: Once all flood control channels are constructed around the perimeter of March ARB, the installation should monitor stormwater flows during rain events to identify/document any additional flooding concerns.

In recent years, the RCFC&WCD has made significant investments and developed plans for new flood control channels:

- Completion of the northern Heacock Channel along the eastern boundary of March ARB
- Completion of portions of the Perris Valley Lateral along the northwestern boundary of March ARB
- Ongoing construction of Perris Valley Lateral Stage 5 along the western boundary of March ARB
- Proposed construction of the Perris Valley Lateral Stage 4 along the southwestern boundary of March ARB
- Planned construction of the Perris Valley Lateral Stage 6 to be built by others
- Proposed construction of the Cactus Avenue Channel along the northern boundary of March ARB

These flood control channels, once fully constructed, will generally surround the perimeter of the installation and are designed to protect against 100-year flood events. Installation stormwater infrastructure and/or maintenance procedures may require reassessment to ensure movement of stormwater away from key locations, such as the airfield.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA

Partner(s)

- Riverside County Flood Control

Strategy Type

Timeframe

Priority

SM-2: Rising groundwater in the vicinity of March ARB may potentially exacerbate stormwater sheet flow and flooding.

Rising groundwater levels on and around March ARB may potentially exacerbate stormwater sheet flows and flooding in the area. As the ground becomes more saturated and groundwater levels rise, portions of stormwater flow that might typically permeate the ground will remain on the surface and create additional sheet flow and/or ponding on and around the installation.

Recommended Strategy

SM-2A: See Strategies SM-1A, SM-1B and SM-1C, CE-1A, CE-1B, CE-1C, and CE-1D, all of which apply to this issue.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA

Partner(s)

- Eastern Municipal Water District
- Western Municipal Water District

Strategy Type

Timeframe

Priority

SM-3: Stormwater collects around the south end of Graeber Street and Riverside Drive, causing heavy flooding.

During heavy rain events, stormwater tends to flow towards the southeastern end of Graeber Street and the southern end of Riverside Drive. The intersection of the roadways and the immediate surrounding area flood, as a result. It is reported that Graeber Street lacks adequate stormwater drainage.

Recommended Strategy

SM-3A: March ARB needs to fully assess stormwater flows on the installation to identify the source of flooding near the intersection of Graeber Street and Riverside Drive.

Graeber Street and Riverside Drive intersect in an area that was identified as subject to periodic flooding during and after heavy rains. Storm flooding in the area around the intersection of Riverside Drive and Graeber Street has the potential to impact March ARB operations, by creating a traffic safety hazard and potentially threatening the safety of installation personnel in severe flooding events. March ARB should apply for appropriate funding to have a drainage study conducted to fully understand the stormwater flows and mitigation needs.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA

Partner(s)

- Riverside County Flood Control

Strategy Type

Timeframe

Priority

SM-3B: March ARB needs to evaluate existing stormwater infrastructure along Graeber Street and Riverside Drive to determine if existing infrastructure is adequate for stormwater flows identified in strategy SM-3A.

Stormwater collected along Riverside Drive is directed into the same open stormwater channel that runoff from the airfield is directed into and ultimately dumping into the Heacock flood channel along the installation boundary. This convergence of storm flow at "Outfall 2" may overwhelm the stormwater infrastructure during heavy rain events and result in flooding. It has been noted that Graeber Street may lack adequate stormwater drainage infrastructure.

Responsible Party(ies)

- March ARB
- March JPA/MIPAA

Partner(s)

- Riverside County Flood Control

Strategy Type

Timeframe

Priority

Utility Security (US) Issues

US-1: March ARB lacks a redundant power connection to off-base supplier.

Currently, March ARB is provided electrical power service via a single connection to the off-base electrical utility power grid. Redundant connections to the power grid increase installation resiliency in the event of a failure of a single-point grid connection. Failure to provide an alternate connection to the power grid or provide an alternate redundant electrical power supply increases the likelihood of temporary power interruptions and possible mission failure in the event of longer disruptions to service.

Recommended Strategy

US-1A: March ARB should work with the SCE and the City of Moreno Valley to explore opportunities to add a redundant electrical power service line.

March ARB should partner with local utility provider to pursue infrastructure improvements to ensure redundancy and the availability of power during any possible regional service disruptions.

Responsible Party(ies)

- March ARB

Partner(s)

- City of Moreno Valley
- Air Force
- SCE

Strategy Type

Timeframe

Priority

US-1B: March ARB should prepare and/or update the installation energy plan in accordance with USAF 2017-2036 Energy Flight Plan.

The plan should include goals/objectives to enhance installation energy resilience and decrease reliance on fossil fuels.

Responsible Party(ies)

- March ARB

Partner(s)

- Air Force

Strategy Type

Timeframe

Priority

US-1C: March ARB should explore energy resiliency initiatives such as microgrids to ensure reliable backup power in the event of service disruption.

March ARB should pursue the development and construction of a microgrid in collaboration with SCE, in order to meet critical mission assurance requirements. Consideration should be given to partnerships to pursue DoD funding and incorporation of renewable energy generation technology.

Responsible Party(ies)

- March ARB

Partner(s)

- Air Force
- DoD

Strategy Type

Timeframe

Priority

US-2: March ARB has no redundant water supply service line.

Currently March ARB is provided potable water from the Western Municipal Water District via a single water service line. A project that will allow Western Municipal Water District to provide an additional service line via the Eastern Municipal Water District water distribution system has been funded. Lack of a redundant water service line has the potential to impact military operations in the event of a single point failure.

Recommended Strategy

US-2A: The Western Municipal Water District, Eastern Municipal Water District, and March ARB should continue to implement the funded project to install a second potable water service line from the east side of the installation.

Western Municipal Water District, Eastern Municipal Water District, and March ARB should continue infrastructure improvements to ensure redundancy and the availability of water during any possible service disruptions.

Responsible Party(ies)

- March ARB

Partner(s)

- Air Force
- DoD
- Eastern Municipal Water District
- Western Municipal Water District

Strategy Type

Timeframe

Priority

Water Quality/Quantity (WQQ) Issues

WQQ-1: There is concern with the prioritization of potable water deliveries to March ARB in the event of major shortages.

There is a concern that there is no formal agreement that ensures that the Western Municipal Water District would prioritize delivery of adequate potable water supplies to March ARB in the event of local/regional major water shortages.

Recommended Strategy

WQQ-1A: March ARB should work with the Western Municipal Water District to establish a formal agreement that ensures a continuous water supply in the event of regional shortages.

This agreement would be similar to those used for community critical facilities/operations, such as medical, emergency support, etc.

Responsible Party(ies)

- March ARB

Partner(s)

- Western Municipal Water District
- Eastern Municipal Water District

Strategy Type

Timeframe

Priority

WQQ-1B: March ARB should prepare or update a water conservation plan to guide efforts to reduce installation water demand and use.

Southern California continues to be affected by an ongoing drought that has the potential to impact potable water deliveries throughout the region. A combination of reduced supplies and increased demand for water in the state has created the potential for water shortages. March ARB needs to prepare/update a Conservation Plan that will help reduce the current water demands on base.

Responsible Party(ies)

- March ARB

Partner(s)

- Western Municipal Water District
- California Department of Water Resources

Strategy Type

Timeframe

Priority

WQQ-1C: March ARB should develop/update local guidelines or establish regulations that mandate conservation/demand reduction actions in the event of regional water delivery reductions.

In addition to WQQ-1B, March ARB should provide regulations for water use in the event of delivery reductions or extended disruption of service.

Responsible Party(ies)

- March ARB

Partner(s)

- Western Municipal Water District
- California Department of Water Resources

Strategy Type

Timeframe

Priority

WQQ-2: The wastewater infrastructure serving March ARB is in need of repair/replacement.

The infrastructure that provides sanitary sewer service to March ARB is old and, in some cases, is failing. The Western Municipal Water District is responsible for the capital repairs, maintenance, and operation of the sanitary sewer system, including the infrastructure located on the installation. The March ARB mission is at risk without an adequate sanitary sewer capability.

Recommended Strategy

WQQ-2A: The Western Municipal Water District should complete the current project to replace the failed sewer line between March ARB and the Western Riverside County Regional Wastewater Authority (WRCRWA) facility.

The District noted that the sanitary sewer line connecting the installation to the District wastewater treatment plant has failed. The Western Municipal Water District is responsible for capital improvements, operation and maintenance of the system on the installation. Consideration should be given to a partnership to pursue DCIP or other grant funding.

Responsible Party(ies)
- Western Municipal Water District

Partner(s)
- March ARB

Strategy Type

Timeframe

Priority

WQQ-2B: The Western Municipal Water District should conduct a sanitary sewer survey.

In addition to the failed sewer line referenced in Strategy WQQ-2A above, there are likely additional lines in need of repair and/or replacement, along with other conditions that may impact the usability of the system; therefore, a survey should be conducted to determine the current status of all sewer lines on March ARB.

Responsible Party(ies)
- Western Municipal Water District

Partner(s)
- March ARB

Strategy Type

Timeframe

Priority

WQQ-2C: Identify and address installation wastewater deficiencies.

Consideration should be given to address any major deficiencies identified in public infrastructure supporting March ARB wastewater as part of any survey. WQQ-2B should be identified and appropriate repair/replacement projects programmed in the Western Municipal Water District sanitary sewer capital improvement plan. March ARB should continue to upgrade sewer lines on base as part of ongoing line improvements.

Responsible Party(ies)
- Western Municipal Water District

Partner(s)
- March ARB

Strategy Type

Timeframe

Priority

WQQ-2D: The Western Municipal Water District should continue to repair and upgrade the failing portions of the March ARB sanitary sewer system as part of its ongoing routine O&M operations.

Consideration should be given to replacing aging portions of the system before line failure occurs.

Responsible Party(ies)

- Western Municipal Water District

Partner(s)

- March ARB

Strategy Type

Timeframe

Priority

WQQ-3: Planned pump and treat operations to address rising groundwater may impact March ARB's ongoing contamination cleanup.

The Eastern Municipal Water District is implementing the North Perris Groundwater Project operations to try to reduce the level of groundwater on and around March ARB. The cause of the rising groundwater is not fully understood. While pumping and treatment may help alleviate the concern regarding rising groundwater levels, such activities could potentially affect March ARB's ongoing efforts to mitigate existing groundwater contamination that resulted from past activities on the installation.

Recommended Strategy

WQQ-3A: Ensure March ARB and AFCEC are provided regular updates on current and upcoming actions related to the North Perris Groundwater Pumping Project.

The Air Force has expressed a concern that the groundwater pumping activities associated with the North Perris Groundwater Project could potentially affect the March ARB groundwater cleanup activities. The ongoing communication between the Air Force and the Eastern Municipal Water District should help avoid any unanticipated impacts to either groundwater treatment operation.

Responsible Party(ies)

- Eastern Municipal Water District

Partner(s)

- March ARB
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

WQQ-3B: Closely monitor existing ongoing installation remediation plan projects.

This should be addressed to ensure no negative impacts, such as contamination plume mobility, are occurring as a result of the Eastern Municipal Water District groundwater pumping operations.

Responsible Party(ies)

- Eastern Municipal Water District

Partner(s)

- March ARB
- March JPA/MIPAA

Strategy Type

Timeframe

Priority

Matrix