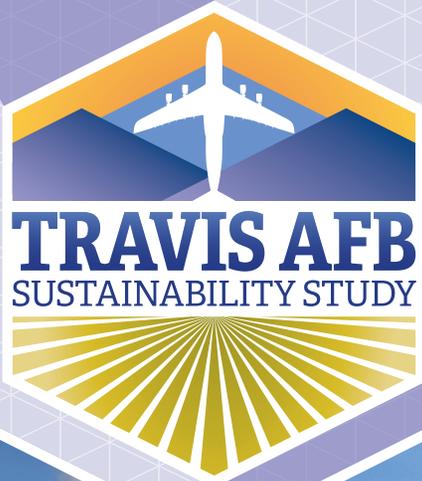


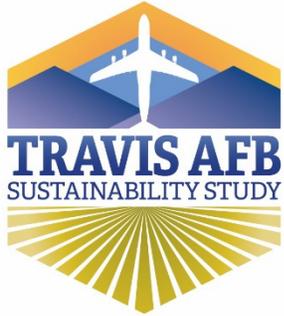
# Sustainability Study Report





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





# TRAVIS AIR FORCE BASE SUSTAINABILITY STUDY REPORT

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*Prepared Under Contract With:*



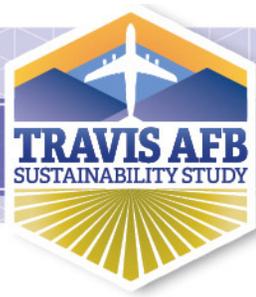
**Solano County, Department of Resource Management  
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*Prepared By:*



**April 2018**

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# Acknowledgements

## Policy Committee

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The Policy Committee (PC) served an active and important role in providing policy direction during the development of the Travis Air Force Base (AFB) Sustainability Study (TSS). The Policy Committee comprised the following individuals:

- **Len Augustine**, *Mayor*  
City of Vacaville
- **Jack Batchelor**, *Mayor*  
City of Dixon
- **Osby Davis**, *Mayor*  
City of Vallejo
- **John T. (Tom) Dunn**, *Deputy Director for Installation Support*  
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- **Elizabeth Patterson**, *Mayor*  
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- **Skip Thomson**, *Supervisor, District 5*  
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County of Solano

### Technical Advisory Committee

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The Technical Advisory Committee (TAC) served a key role in the development of the Travis AFB TSS, providing the overall advisory support, review, and guidance of the study. The TAC comprised the following individuals:

- **1st Lt William M. Beckman**  
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- **Matthew Walsh**, *Principal Planner*  
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### Spectrum Encroachment Working Group

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The Spectrum Encroachment Working Group assisted in the identification, assessment, review, and development of strategies to address frequency spectrum encroachment issues as part of the compatibility factors developed through the TSS process.

- **James Kirby**, *Spectrum Manager*  
Travis Air Force Base
- **TSgt Nathan Sams**, *60th Communications Squadron*  
Travis Air Force Base
- **MSgt Raphael Sorhaindo**, *60th Air Mobility Wing, Plans*  
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- **Stephen Vancil**, *ALUC Commissioner*  
County of Solano
- **Mike Yankovich**, *Planning Program Manager*  
County of Solano

### County of Solano (Project Sponsor)

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The County of Solano served as the overall TSS project management agency and the administrator of the Office of Economic Adjustment (OEA) grant that helped to fund the study.



■ **Jim Leland**, *TSS Project Manager*

■ **Mike Yankovich**, *Planning Program Manager*

### TSS Consultant / Technical Advisors

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Matrix Design Group, Inc. was the project consultant hired to conduct the TSS project through coordination with assistance from the County of Solano, the PC, the TAC, the Spectrum Encroachment Working Group, the public, and other stakeholders.

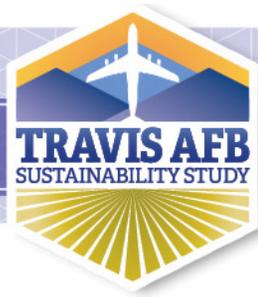


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*Lead Planner*

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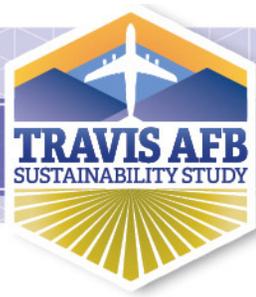
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# Acronyms

## A

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AGL	above ground level
APZ(s)	Accident Potential Zone(s)
AICUZ	Air Installation Compatible Use Zone
AMW	Air Mobility Wing
AIA	airport influence area
ALUC	Airport Land Use Commission
AT/FP	Anti-Terrorism Force Protection
ALZ	Assault Landing Zone

## B

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BASH	Bird / Wildlife Aircraft Strike Hazard
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## C

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Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFCP	California Farmland Conservancy Program
CZ(s)	Clear Zone(s)
CNEL	Community Noise Equivalent Level

## D

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DNL	day-night average sound level
dB	decibel
DOD	Department of Defense

## E

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EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency

## F

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FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FCC	Federal Communications Commission
FONSI	Finding of No Significant Impact
FY	fiscal year

I

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ICEMAP	Installation Complex Encroachment Management Action Plan
IDP	Installation Development Plan
INRMP	Integrated Natural Resources Management Plan

L

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LCA	Land Conservation Agreement
LUCP	Land Use Compatibility Plan
LAFCO	Local Agency Formation Commission

N

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NEPA	National Environmental Policy Act
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O

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OEA	Office of Economic Adjustment
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P

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PC	Policy Committee
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S

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SEWG	Spectrum Encroachment Working Group
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T

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TAC	Technical Advisory Committee
Travis AFB	Travis Air Force Base
TSS	Travis Air Force Base Sustainability Study

U

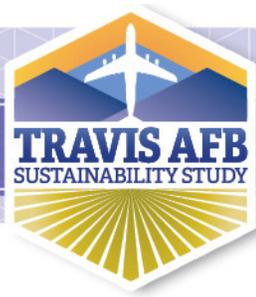
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US	United States
USAF	US Air Force

V

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VA	Veterans Affairs
VFR	Visual Flight Rules



*The Travis Air Force Base (AFB) Sustainability Study (TSS) is a collaborative planning effort between the communities around Travis AFB, Solano County and the cities of Fairfield, Suisun City, Vacaville, and Vallejo.*

*The TSS advocates a proactive approach to foster ongoing communication about planning and decisions relating to land use regulation, conservation, and natural resource management issues affecting local communities and Travis AFB. The intent of the process is to build upon the already effective working relationship between Travis AFB and nearby communities to foster future teamwork to prevent and / or reduce encroachment issues associated with current and future missions and local growth and to identify opportunities for further Base / Community collaboration.*

*The term encroachment refers to conflicting uses of land, air, water, and other resources that may individually or cumulatively impact the military's ability to carry out its missions. The compatibility factors considered in this TSS are described in the Compatibility Assessment (Chapter 5 of the TSS Report or Background Report). A set of strategies to address compatibility was developed upon review of these factors and identification of issues with the communities, Travis AFB, TSS committees, and the public. The recommended strategies are based on a "toolbox of methods" used to enhance compatibility and address the use of policy, planning, zoning, coordination and communication, and outreach methods to reduce and prevent encroachment. One of the key recommendations is to*

*consider forming a TSS Coordination Committee responsible for overseeing the implementation progress in the months and years after the TSS is completed. The recommended strategies are outlined in greater detail in Chapter 6, Implementation Plan.*



*Aircraft from the 60th Air Mobility Wing at Travis AFB taking part in the Freedom Launch, September 11, 2013*

### **What Is the Travis AFB Sustainability Study?**

The TSS is a planning process accomplished through the collaborative efforts of a comprehensive set of stakeholders in a defined study area to identify compatibility guidelines within, and adjacent to, Travis AFB. These stakeholders include local jurisdictions, state, and federal officials, agencies and organizations, business organizations, non-governmental organizations, the military and the public.

The intent of the study is to build upon the already positive working relationship that exists between Travis AFB and stakeholders in the surrounding communities. The desired result is further collaboration among all to prevent and / or reduce future encroachment issues associated with current and future missions and local growth. This study also identifies opportunities for increased collaboration on economic development and environmental initiatives. To do this, the TSS process culminates in an agreed upon set of recommended strategies that can be implemented by identified stakeholders to promote compatibility and ongoing relationships between the military and neighboring communities.

This TSS effort is funded through a grant from the Department of Defense (DOD), Office of Economic Adjustment (OEA) and a local match from the County of Solano. While OEA provides the grant funding, the content of the TSS is produced by and for the local stakeholders. Project management for the TSS was provided by Solano County.

### **Travis AFB Sustainability Study Goal and Objectives**

The goal of the TSS is to protect the viability of current and future military operations, while simultaneously supporting community growth, sustaining the environmental and economic health of the region, and furthering public health, safety, and welfare. To help meet this goal, three primary TSS objectives were identified:

- **Understanding.** Convene community and military representatives to identify, confirm, and understand the concerns in an open forum, taking into consideration both community and Travis AFB perspectives and needs. This includes public awareness, education, and input organized in a cohesive outreach program.
- **Collaboration.** Encourage cooperative land use and resource planning between Travis AFB and the surrounding communities so that future community growth and development in those communities are compatible with the training and operational missions at Travis AFB and Base operations maintain compatibility with local communities.
- **Actions.** Provide a set of mutually supported tools, activities, and procedures from which local jurisdictions and agencies, and Travis AFB can select, prepare, and approve / adopt and use to implement the recommendations developed during the TSS development. The actions proposed include both operational measures to mitigate installation impacts on surrounding communities and local government and agency policies and implementation measures to reduce community impacts on military operations. These collective tools, activities, and procedures will help decision makers resolve compatibility issues and prioritize implementing projects within the annual budgeting process.

### **Why Prepare the Travis AFB Sustainability Study?**

Collaboration and joint planning among military installations, local communities, and agencies should occur to ensure the long-term viability of existing and future military missions. Working together presents opportunities to enhance local economic and environmental health and wellbeing. The TSS aims to preserve the sustainability of local communities within the TSS Study Area while protecting current and future operations and missions at Travis AFB.

## Economic Benefit to the Region

Travis AFB is located in northern California in the center of Solano County, approximately 30 miles southwest of the City of Sacramento and 40 miles northeast of the City of San Francisco. Travis AFB is located within the city limits of Fairfield, along the eastern edge of the city. The City of Suisun City's downtown is located about two miles west of Travis AFB, the City of Vacaville's downtown is approximately four miles northwest of the installation, and the City of Vallejo's downtown is approximately 16 miles southwest of Travis AFB. Travis AFB is an important economic engine in the region, contributing greater than \$1.6 billion in economic benefit to local communities in fiscal year (FY) 2013. Figure 1 illustrates the total impact separated into contributing categories. Travis AFB supported 26,443 people in FY 2013, consisting of 10,296 military personnel, 3,118 civilians, and 13,029 military dependents. Additionally, 45,339 military retirees reside within a 50-mile radius of Travis AFB.

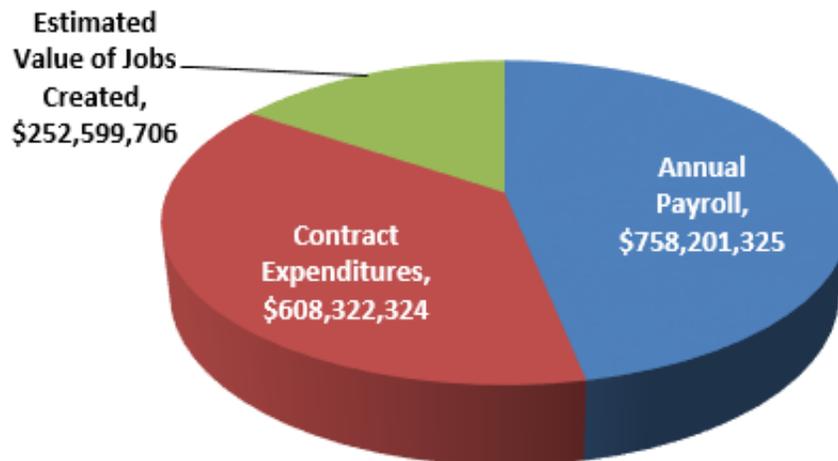


Figure 1. FY 2013 Travis AFB Economic Benefit

Source: Travis Air Force Base Economic Impact Analysis, 2013

## Military Strategic Importance

Travis AFB is a strategic asset in the nation's defense. The Base executes four primary mobility capabilities – airlift, aerial refueling, aeromedical evacuation, and global reach laydown. The 60th Air Mobility Wing, the host unit at the Base, is the Air Force's largest air mobility organization. The Base also includes the 349th Air Mobility Wing, 621st Contingency Response Wing, and more than 50 other partner organizations. The wings operate C-5, C-17, and KC-10 aircraft and provide rapid and precise global reach and mobility. In addition, Travis AFB is home to the David Grant Medical Center, the largest Air Force medical facility on the west coast and a Veteran's Services Administration Clinic.

## Compatibility Factors Addressed in this Study

Compatibility factors addressed include the growing population and pressure to develop land, the potential increase of alternative energy development in the vicinity, and the natural and biological resources that surround the installation. All of these concerns if left unmanaged or without enhanced coordination efforts, could have impacts on the Air Force's ability to conduct its missions at Travis AFB. In addition, lack of planning and / or understanding of local concerns has the potential to impact community economic development and quality of life.

## TSS Partners

The goal and objectives of the TSS process is designed to create a locally applicable study that builds consensus and obtains support from the various stakeholders involved. To achieve the TSS goal and objectives, the TSS process included a stakeholder and public outreach program that provided a variety of opportunities for interested parties to contribute to its development.

### Stakeholders

An early step in any planning process is the identification of stakeholders. Informing and involving them early in the project is instrumental in the identification of compatibility issues to address and solve through the development of integrated strategies. Stakeholders include individuals, groups, organizations, and governmental entities interested in, affected by, or affecting the outcome of the TSS project, such as the cities of Fairfield, Suisun City, Vacaville and Vallejo, Solano County, and the public.

### TSS Committees

The development of the TSS was guided by three committees, composed of representatives from Solano County, the cities of Fairfield, Suisun City, Vacaville, and Vallejo, Travis AFB, federal and state agencies, resource agencies, and other stakeholders. The three committees are the Policy Committee (PC), the Technical Advisory Committee (TAC), and the Spectrum Encroachment Working Group (SEWG).

**TSS Policy Committee.** The PC was made up of the Solano City County Coordinating Council, which consists of the 7 Mayors and the 5 members of the Board of Supervisors. The PC was responsible for guiding the direction of the TSS, preparing and approving the study design, approving policy recommendations, and approving the draft. PC meetings occurred during the regularly scheduled City County Coordinating Council meetings.

**TSS Technical Advisory Committee.** The TAC was responsible for identifying and studying technical issues. Membership included representatives from local jurisdictions, agencies, and Travis AFB with technical expertise in one or more of the compatibility factors discussed in Chapter 5, Compatibility Assessment. The TAC identified and addressed technical issues, provided feedback on report development, and assisted in the development and evaluation of implementation strategies and tools. Items discussed by the TAC were reviewed by the PC for consideration and action. See the Acknowledgments for a list of TAC members.

Committee meetings were held throughout the process to ensure the TSS identified and appropriately addressed local issues.

**Spectrum Encroachment Working Group.** The SEWG worked to identify and characterize the spectrum issues associated with the Travis AFB missions. This included identification and evaluation of spectrum encroachment and interference issues, plus additional topics identified by the SEWG.

### Public Participation

The general public was instrumental in the development of the TSS and its recommended strategies by providing their perspective and feedback, both in the public workshops and through the use of the interactive project website ([www.travissustainability.com](http://www.travissustainability.com)). During the development of the TSS, three public workshops were held to solicit public input on the direction and content of the TSS. These workshops provided an opportunity for the exchange of information with the greater community, assisted in identifying the issues to be addressed in the TSS, and provided input on the strategies proposed. Each workshop included a traditional presentation and a facilitated exercise providing a hands-on, interactive opportunity for the public to participate in the development of the plan.



*Compatibility issue identification exercise at first public workshop, September 15, 2016*

### Public Outreach Materials



**TSS Overview Fact Sheet.** At the beginning of the TSS project, a TSS Overview Fact Sheet was developed that describes the TSS program, objectives, methods for the public to provide input into the process, an overview of the 24 compatibility factors that were analyzed throughout the project, and the TSS Study Area. This Fact Sheet was made available at the public workshops and posted on the project website for download.



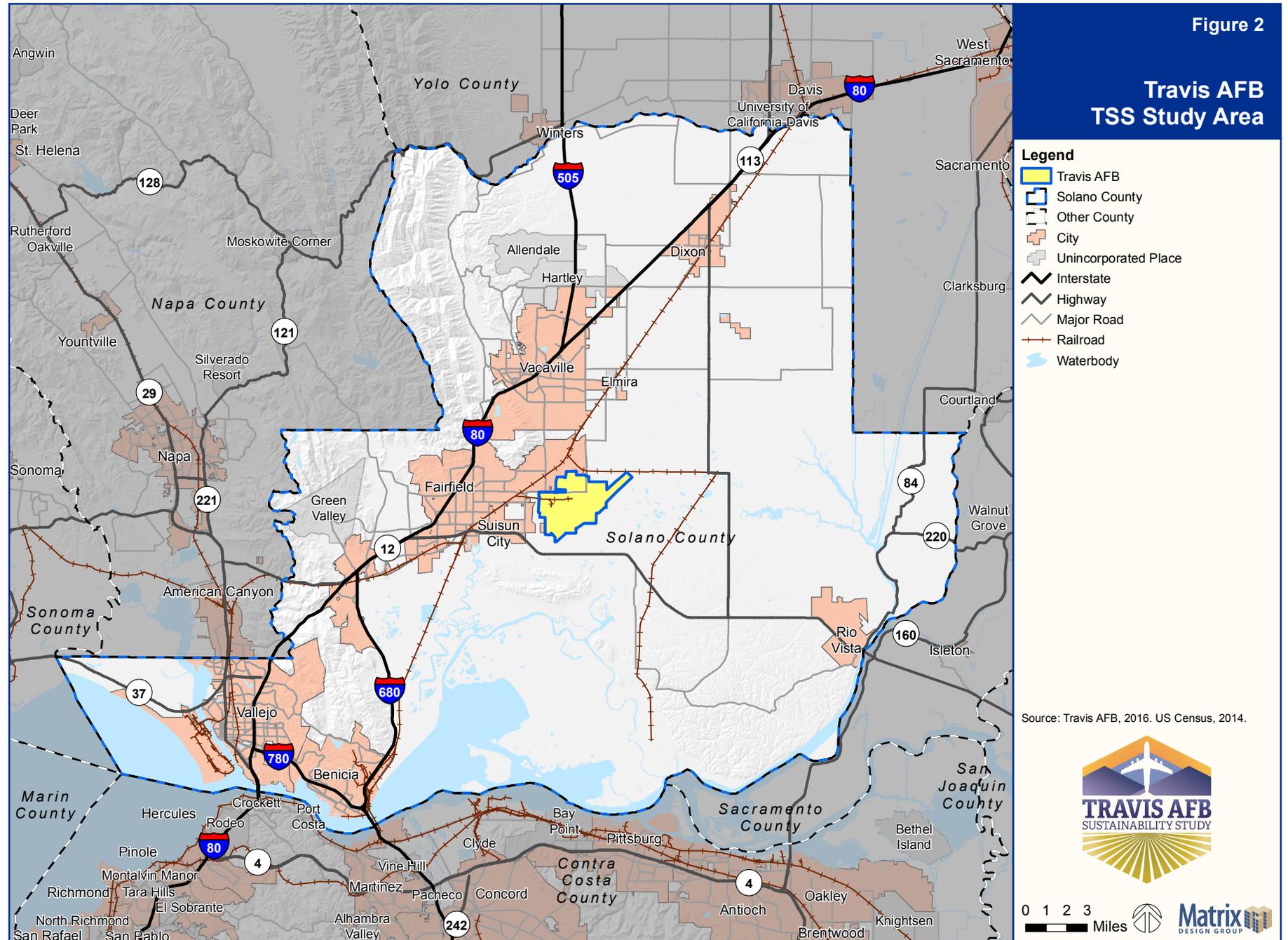
**Strategy Tools Brochure.** The Strategy Tools Brochure was prepared for the second public workshop. TSS strategies constitute a variety of actions that local governments, military installations, agencies, and other stakeholders can implement to promote compatible land use planning. This brochure provides an overview of the strategy types that could be applied to address compatibility issues around Travis AFB.

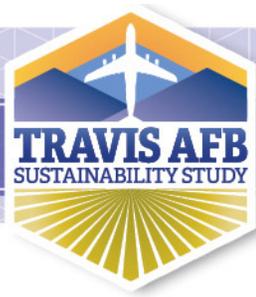
**Website.** A project website was developed and maintained to provide stakeholders, including the public, and media representatives with access to project information. This website was maintained for the entire duration of the project to ensure information was easily accessible. Information on the website included project points of contact, schedules, documents, maps, public meeting information, a link to join the list to receive email updates, and a link to submit comments. The project website is located at [www.travissustainability.com](http://www.travissustainability.com).



### TSS Study Area

The TSS Study Area is designed to address all lands near Travis AFB that may impact current or future military operations or be impacted by operations. Located within Solano County, the surrounding communities' land uses include a variety of residential, commercial, industrial, agricultural and open space uses. The primary characteristics evaluated in determining the TSS Study Area were general compatibility factors associated with military mission readiness and land uses that may impact or be impacted by military operations. Based on this evaluation, and for simplicity in application, the TSS Study Area was defined to match Solano County's area, although the focus of the study was the communities providing Base infrastructure or proximate to Base borders. Figure 2 illustrates the Study Area.





*This section provides a profile of the local jurisdictions and institutions within the Travis Air Force Base (AFB) Sustainability Study (TSS) Study Area. This information can help to provide a baseline context from which informed decisions can be made when developing compatibility strategies. The goal is to provide information that enables stakeholders to gain an understanding of population and development trends that have the potential to affect the future of Travis AFB. Further, this chapter is designed to foster an understanding by the military about the types of activities occurring “outside the fence” when considering future missions and operations.*

## **Local Jurisdictions in the Study Area**

The study area for the TSS focused on Travis AFB, the unincorporated portions of Solano County near the Base, and the communities of Solano County and the cities of Fairfield, Suisun City, Vacaville, and Vallejo. Solano County covers over 900 square miles of land and is one of the nine counties that make up the San Francisco Bay Area region. Approximately 128 square miles of the county, or 14 percent of the total land area, lies within seven incorporated cities: Benicia, Dixon, Fairfield, Rio Vista, Suisun City, Vacaville, and Vallejo.

The City of Fairfield is located in central Solano County and the home of Travis AFB. It is generally considered the midpoint between the cities of Sacramento and San Francisco and is accessible via Interstate 80. It serves as Solano County’s county seat. The city is surrounded by undeveloped or lightly developed hills on its western and northern borders and grazing and prairie grasslands to the east and northeast.

The City of Suisun City is in Solano County, southeast of the City of Fairfield and west of Travis AFB. The land is characterized by relatively level topography throughout the city. Suisun City is directly north of the Suisun Marsh, the largest contiguous brackish marsh in the western US.

The City of Vacaville is located in Solano County, approximately six miles north of Travis AFB. Vacaville is located on the edge of the Coastal Range that separates California’s Central Valley from the San Francisco Bay Area.

The City of Vallejo is in Solano County, approximately 4 miles southwest of Travis AFB. Vallejo abuts the San Pablo Bay on the northeastern edge of the San Francisco Bay area.

## **Study Area Growth Trends**

Population growth and related development trends in the study area remain a significant concern to local jurisdictions seeking to balance the demand for new housing and economic growth with natural resource and agricultural land preservation. As development pressure continues to build due to outward growth from San Francisco and Sacramento, Solano County has taken active measures to protect open space through local land use, zoning, and preservation techniques. The County’s Orderly Growth Measure requires a citizen’s vote to approve any change on the County’s General Plan Land use map that would change a property designated agriculture to a non-agricultural land use. Because of Solano County’s commitment to focus development within urban areas, about 95 percent of the county’s population lives in its cities Benicia, Vallejo, Fairfield, Suisun City, Vacaville, Dixon, Rio Vista. The majority of land use in the unincorporated land area is undeveloped natural resource land and agricultural use.

It is important to examine past, current, and future growth trends to understand the types and amount of growth and development occurring in the Study Area. Identifying growth patterns for the area surrounding Travis AFB is one step in determining potential future compatibility issues or areas of concern associated with where new growth may occur that could impact or be impacted by military operations. This section assesses the recent and projected future population changes within the TSS Study Area, as well as housing trends that could be indicators of future growth.

### Population

Population data is based on the 2016 estimates provided by the California Department of Finance and data from the US Census. Population numbers show the growth or decline in people in a geographical area. Population is a major factor for the economy of the Study Area and ultimately supports the employment and housing opportunities. Table 1 shows the 2000 and 2010 census totals and percent change in populations of jurisdictions within the TSS Study Area. The table also shows the percentage change from the 2010 census total to the 2016 estimate.

All the TSS jurisdictions saw an increase in their population levels, with the cities of Fairfield and Suisun City seeing the largest percentage growth from 2000 to 2010. Solano County’s location midway between San Francisco and Sacramento and adjacent to Napa, mild climate, and open space has helped to drive this population increase. The jurisdictions in the area have worked to achieve a blend of agriculture, corporate business, and pleasant lifestyle to enhance the attractiveness of the region. Due to the County’s orderly growth ordinance, most growth is within incorporated cities.

### Future Population Projections

Table 1 shows the population projections for the TSS communities. Of the cities within the immediate vicinity of Travis AFB, Vallejo had the highest population in 2016, with 117,322 people, and is projected to increase by six percent by the year 2020. Vacaville, the second largest city in the Study Area, is expected to grow at a higher rate (eight percent). Suisun City, the city with the smallest population in 2010 is expected to grow at the same rate as Vacaville, by eight percent. While all of these rates are lower than the projected rate for the State of California, Solano County as a whole is expected to grow at a higher rate than the state.

**Table 1. Population Change 1990-2010 and Estimates through 2030**

Jurisdiction	2000	2010	% Change 2000-2010	2016 Estimate	% Change 2010-2016	2020 Estimate	% Change Estimate	2030 Estimate	% Change Estimate
California	33,871,648	37,253,956	10%	39,256,000	5%	40,643,643	4%	44,279,354	9%
Solano County	394,542	413,344	5%	431,498	4%	447,217	4%	493,422	10%
City of Fairfield	96,178	105,321	10%	112,637	7%	118,900	6%	124,300	5%
Suisun City	26,118	28,111	8%	29,091	3%	36,500	8%	38,600	7%
City of Vacaville	88,625	92,428	4%	97,667	6%	105,000	8%	109,400	4%
<b>City of Vallejo</b>	<b>116,760</b>	<b>115,942</b>	<b>-1%</b>	<b>117,322</b>	<b>1%</b>	<b>121,000</b>	<b>3%</b>	<b>126,200</b>	<b>4%</b>

*Source: US Census Bureau (2000 and 2010), California Department of Finance (2016 Estimate) UC Davis Center for Regional Change, 2010-2060 (Projections for California and Solano County); Association of the Bay Area Governments Population Projections, 2009 (Projections for Cities of Fairfield, Suisun City, and Vacaville) and 2013 (for City of Vallejo)*

## **TSS Community Economic Trends**

Initial economic activity throughout the TSS Study Area was centered on the agriculture industry, dating back to early settlement period. Agriculture is still a major component of the Solano County economy. Efforts to diversify Solano County's economy with new sectors have brought substantial growth to the region and the county in the insurance, healthcare, and retail trade industries. These now represent significant components of the local economy, in addition to hospitality and food services.

Solano County's economy is rooted in viable agriculture, Travis AFB, and other major private and public employment sectors, such as government services. However, Solano County's economy increasingly depends on diversified businesses and industries, a highly trained and educated workforce, accessibility to major highways and freeways, available housing at a cost local workers can afford, and infrastructure ready to serve businesses.

The City of Fairfield is at the center of Solano County, which benefits from an excellent transportation network, availability of developable land, a diverse housing supply, a healthy business mix, and a desirable quality of life. While Travis AFB remains the city's largest employer, economic development over the years has diversified the economic base and provided numerous employment opportunities. The City of Fairfield is an industrial leader in the county, with a major focus in food and beverage manufacturing. The city has also seen a growth in businesses supporting the nearby wine industry. Fairfield's water supply, high capacity sewer treatment plant and proximity to the Napa wine region make it an ideal location for wine producers and other wine related industries.

Between 1989 and 2012, Suisun City implemented a redevelopment program centered on the Old Town Waterfront and Historic Main Street Shopping District. After decades of isolation, the waterfront is now accessible to the general public via a new Public Marina, Public Promenade,

Harbor Square Plaza and the Hampton Inn (Waterfront Hotel). The channel was deepened to allow boating excursions from the San Francisco Bay and the Sacramento Delta. Suisun City also contains large residential neighborhoods with a variety of housing types. Many Suisun City residents work in neighboring Fairfield.

The largest industries in the City of Vacaville are education and healthcare, retail, arts, entertainment, recreation, and accommodation and food services, manufacturing, and public administration. Two California Department of Corrections facilities are located in Vacaville and are the top employers in the city. The presence of Genentech, Alza Corporation, and Novartis in Vacaville contribute to the city's position as a regional center for the biotech industry. Other economic contributors include the Vacaville Premium Outlets and the Nut Tree Shopping Center, which is home to numerous stores and dining establishments.

The largest industries in the City of Vallejo are healthcare and related support services, followed by retail, and manufacturing. The Kaiser Permanente Medical Center is located in Vallejo and is the leading employer in the city. Two of the major employers in Vallejo are in the healthcare industry. Six Flags Discovery Kingdom is the second leading employer and draws tourism to the city.

## **Current Land Use Overview within the Study Area**

The variety of land uses are a result of influential factors such as roads, highways, commercial and industrial development, economic activities and more. Solano County is unique in that the County limits residential and commercial development outside of cities, and has preserved approximately 80 percent of unincorporated land for open space or agricultural uses. A majority of land surrounding Travis AFB falls under a Resource Conservation Overlay, as well as a Travis Reserve Area. Both Solano County and the City of Fairfield have designated an area surrounding Travis AFB as a Travis Reserve

for continued agriculture and open space uses for potential future military use. Additionally, the City of Vacaville has implemented an Urban Growth Boundary as has the City of Fairfield. There is also a designated Greenbelt between the two cities.

Land uses surrounding Travis AFB is characterized as follows.

### North

North of Travis AFB is mostly agriculture land use, with the City of Vacaville located approximately six miles away. Suburban and residential development has been growing to the south of the city, toward Travis AFB. The two largest employers in the City of Vacaville, California State Prison-Solano and the California Medical Facility, are in the southern portion of the city.

Development south of the city is restricted by the Vacaville-Fairfield-Solano Greenbelt Agreement, which identifies approximately 4,100 acres between Vacaville and Fairfield that must be preserved to serve as a permanent separation between the urban areas of Fairfield and Vacaville. This area must be maintained in agriculture and open space uses consistent with the provisions of the agreement.

Northwest of the installation, about a mile from the Travis Main Gate, is the recently opened Fairfield-Vacaville train station. The station is to be an anchor for the City of Fairfield northeast growth area. Plans call for about 6,000 residences, a Main Street-style business area, and industrial area to be built in the future. Development is to be focused on the west side of Vanden Road, with land north of Travis AFB designated as open space, conservation, mitigation, and greenbelt areas.

### East

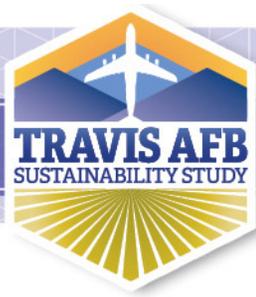
The land east of Travis AFB is almost entirely open space and agriculture with very limited and sporadic development. Much of this area falls under the Resource Conservation Overlay in Solano County.

### South

Land use to the south and southwest of Travis AFB is largely agriculture and open space. About one mile southwest of the Base is the Suisun Marsh, which includes the San Francisco Bay National Estuarine Research Reserve and the Joice Island State Game Refuge.

### West

West of Travis AFB is the most developed area near the installation. The City of Fairfield is west of the Base, with a mix of open space, industrial, and commercial uses, with some pockets of residential located close to the Base. Suisun City is also located west of the Base, consisting mostly of single family suburban residential development. Due to the Suisun Marsh, there is limited room for expansion south of the cities. A new Walmart, which has provided approximately 300 jobs, opened in March 2015 near the intersection of Walters Road and US Highway 12. Suisun City has future development planned along Highway 12, including an industrial park.



*This section provides a brief overview of Travis Air Force Base (AFB) to enable stakeholders to make informed decisions about future development and economic growth within communities and institutions near Travis AFB that could potentially impact the viability and future role of the Base, or be impacted by current or future activities at the Base.*

## **Installation Setting**

Travis AFB is located in Solano County in northern California, midway between Sacramento and San Francisco. Travis AFB is located within the city limits of Fairfield, along the eastern edge of the city. The Base covers approximately 6,260 acres of land.

Travis AFB has two main runways and an assault landing zone (ALZ) that runs parallel the main runways, all oriented northeast / southwest. Runway 03L/21R is 11,001 feet long and 150 feet wide, while runway 03R/21L is 10,992 feet long and 150 feet wide. Both are Class B runways designed and built for sustained heavy aircraft landings and takeoffs. Assault Landing Zone 03/21 is 3,500 feet long and 90 feet wide and is designed for sustained C-17 assault landings and takeoffs. Runways 03L, 03R and ALZ 03 are used about 20 percent of the time for approaches from the southwest and departures to the northeast. Runways 21L, 21R and ALZ 21 are used about 80 percent of the time for approaches from the northeast and departures to the southwest.

Amenities at the Base include a bowling alley, movie theater, library, auto care center, credit union, bank, lodging at the Westwind Inn, along with other restaurants and stores. Schools on the Base include Travis Elementary, Scandia Elementary, and Brandman University. Brandman University, part of the Chapman University System, offers undergraduate and graduate degrees, certificates, teaching credentials and extended education programs. Travis AFB also has a passenger terminal to provide Space-A travel, by which base personnel are permitted to travel on aircraft when excess capacity allows. Travis AFB is also home to the David Grant US Air Force (USAF) Medical Center, the Fairfield Veterans Affairs (VA) Outpatient Clinic, and the Travis AFB Heritage Center.



*Aerial view of Travis AFB*

Housing on the Base is privately owned and operated by Balfour Beatty Communities. They offer eight different neighborhoods with different types of homes. These are Castle Terrace, March Landing, McClellan Corridor, Moffet Court, Norton Heights, Onizuka Flats North, and Onizuka Flats South. Community amenities include a community center, playground and picnic areas, a dog park, and a community garden.

### **Air Force Mission**

Part of the Air Mobility Command, the 60th Air Mobility Wing (AMW) is responsible for strategic airlift and air refueling missions around the globe. The unit's primary roles are to provide rapid, reliable airlift of American fighting forces anywhere on Earth in support of national objectives and to extend the reach of American and allied air power through mid-air refueling. Wing activity is primarily focused in the Pacific and Indian Ocean areas, including Alaska and Antarctica. However, the 60th AMW crews can fly support missions anywhere in the world to fulfill its motto of being "America's First Choice" for providing true Global Reach.

With the multiple missions that Travis AFB provides, the main supporting action is the installation's ability to provide a safe command and control platform for the President and DOD to carry out their objectives during a time of national crisis. Current flight operations at Travis AFB include straight out departures and straight in approaches, overhead landing patterns, radar closed patterns, closed patterns, and re-entry visual flight rule patterns.



*C-5 Galaxy aircraft taking off*

### **Future Mission Operations**

In January 2017, Air Force officials selected Travis AFB as one of two preferred locations to station active duty components of the new Boeing KC-46 Pegasus refueling aircraft. The KC-46A Pegasus is an aerial refueling and strategic military transport aircraft capable of refueling multiple aircraft at the same time. Environmental impact analyses will be required before a final basing decision is made to locate 24 KC-46A Pegasus aircraft at Travis AFB, which will replace the existing KC-10 Extender aircraft. In February 2011, the KC-46 Pegasus was selected by the Air Force to replace older KC-10 Extenders. A decision to retire the KC-10 Extenders was made in 2013, but the planned divestiture is intended to be coordinated with arrival of the KC-46A. As of January 2017, it is anticipated that the first KC-46A Pegasus aircraft would arrive at Travis AFB in 2022. It is unknown the total number of personnel change that will occur at Travis AFB as a result of this change in mission.

## Commands and Units at Travis AFB

The Travis AFB mission is supported by multiple units under the direct command of the Travis AFB Base Commander and tenant units (units that report to other organizations and utilize space or facilities at Travis AFB) that enable the missions to be executed on a daily basis.



The 60th AMW is the host command wing at Travis AFB. The Wing is the largest air mobility organization in the Air Force and is responsible for strategic airlift and aerial refueling missions around the world. Wing activity is primarily focused on support in the Middle East region;

however, it also maintains operations in areas of the Pacific and Indian Oceans. Its mission is to provide rapid, reliable airlift of personnel and equipment anywhere on earth, and to extend the reach of American and allied air power through mid-air refueling. The 60th AMW consists of the 60th Operations Group, the 60th Maintenance Group, the 60th Mission Support Group, and the 60th Medical Group.

There are more than 50 tenant units and partner organizations, each with a unique mission set, who contribute to the greater success of the Travis AFB mission. Major tenants at Travis AFB include the 621st Contingency Response Wing, the 39th Air Mobility Wing, the Navy VQ-3 Detachment, and the David Grant US Air Force Medical Center.

## Travis AFB Mission Footprints

Mission activities conducted on and around Travis AFB can potentially generate impacts on surrounding community areas if incompatible land uses are developed. Examples of potential mission impacts on surrounding communities include noise and vibration from overhead flights and the risk of an aircraft accident. Conversely, the military mission is susceptible to hazards and other incompatibilities created by certain types of civilian development or activities, such as obstructions to air space or location of noise sensitive uses in high noise zones. Understanding the overlapping

spatial patterns of these compatibility zones on mission footprint is essential to promote compatible and informed land use decisions.

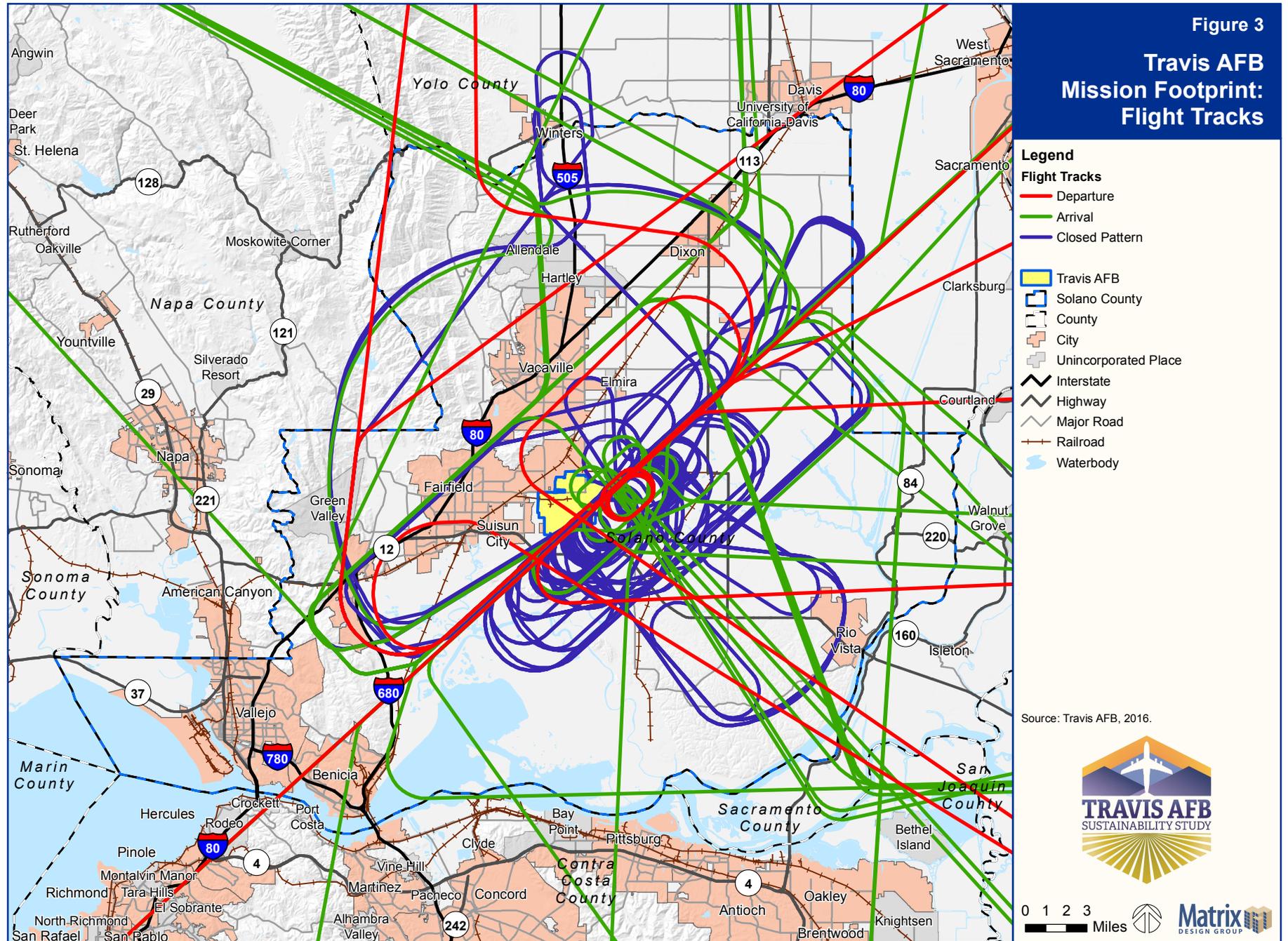
## Travis AFB Footprint Elements

There are several elements that make up the mission footprints that extend outside the Travis AFB boundaries. These essential elements play a key role in the installation's viability for sustaining current and future mission operations. These elements are listed below and described in more detail on the following pages.

- Airfield Approach and Departure Flight Tracks
- Imaginary Surfaces
- Airfield Accident Potential Zones
- Aircraft Noise Contours
- Airspace Control
- Part 77 Vertical Obstruction Compliance
- Bird / Wildlife Aircraft Strike Hazard (BASH) Relevancy Area

## Airfield Approach and Departure Flight Tracks (Figure 3)

Flight tracks are developed to provide guidance on the range of standard operations that are associated with the airfield. These are created using information gathered from air traffic controllers, pilots, and other sources. When flight tracks are developed they attempt to avoid urban development as much as possible to reduce impacts and risk to the general public and commercial or general aviation activities. Safety of operations is paramount in the design of these flight tracks. Travis AFB has two runways (03L/21R, 03R/21L) and one assault landing zone (03/21). Figure 3 illustrates the primary flight tracks used by Travis AFB aircraft. Other flight tracks may also be used depending on factors such as weather or mission.



### **Imaginary Surfaces (Figure 4)**

Federal Aviation Regulations, Part 77 specifies a series of imaginary height restriction surfaces surrounding an airfield. The imaginary surfaces of an active runway are used to define the required airspace that must remain free of vertical obstructions in the vicinity of aviation operations to optimize safe flight operations. Structures should not exceed these heights to protect the navigable airspace associated with the airfield, the safety of pilots and people, and the land use on the ground. This is especially important in the clear zone and the approach-departure surfaces. Figure 4 illustrates the outermost extent of the imaginary surfaces at Travis AFB. For a complete technical explanation of the imaginary and transitional surfaces for Travis AFB, see Chapter 5, Compatibility Assessment (Section 5.23 Vertical Obstructions) of the Background Report.

The Department of Defense Unified Facilities Criteria 3-260-01, Airfield and Heliport Planning and Design, establishes airspace imaginary surfaces associated with assault landing zones located at Travis AFB.

### **Airfield Accident Potential Zones (Figure 4)**

In addition to the assessment of imaginary surfaces, the second element of the airfield safety analysis is the assessment of Accident Potential Zones (APZs). For a complete technical explanation of the APZs for Travis AFB, see Chapter 5, Compatibility Assessment (Section 5.21 Safety) of the Background Report.

There are typically three safety zones that extend from each end of a runway: Clear Zone (CZ), APZ I, and APZ II. These safety zones are illustrated on Figure 4. The CZ for the runway measures 3,000 feet wide by 3,000 feet long. This is the area that has the highest potential of an aircraft incident. It is recommended that no development occur in the CZ unless it is a use that is needed for safe operations of aircraft.

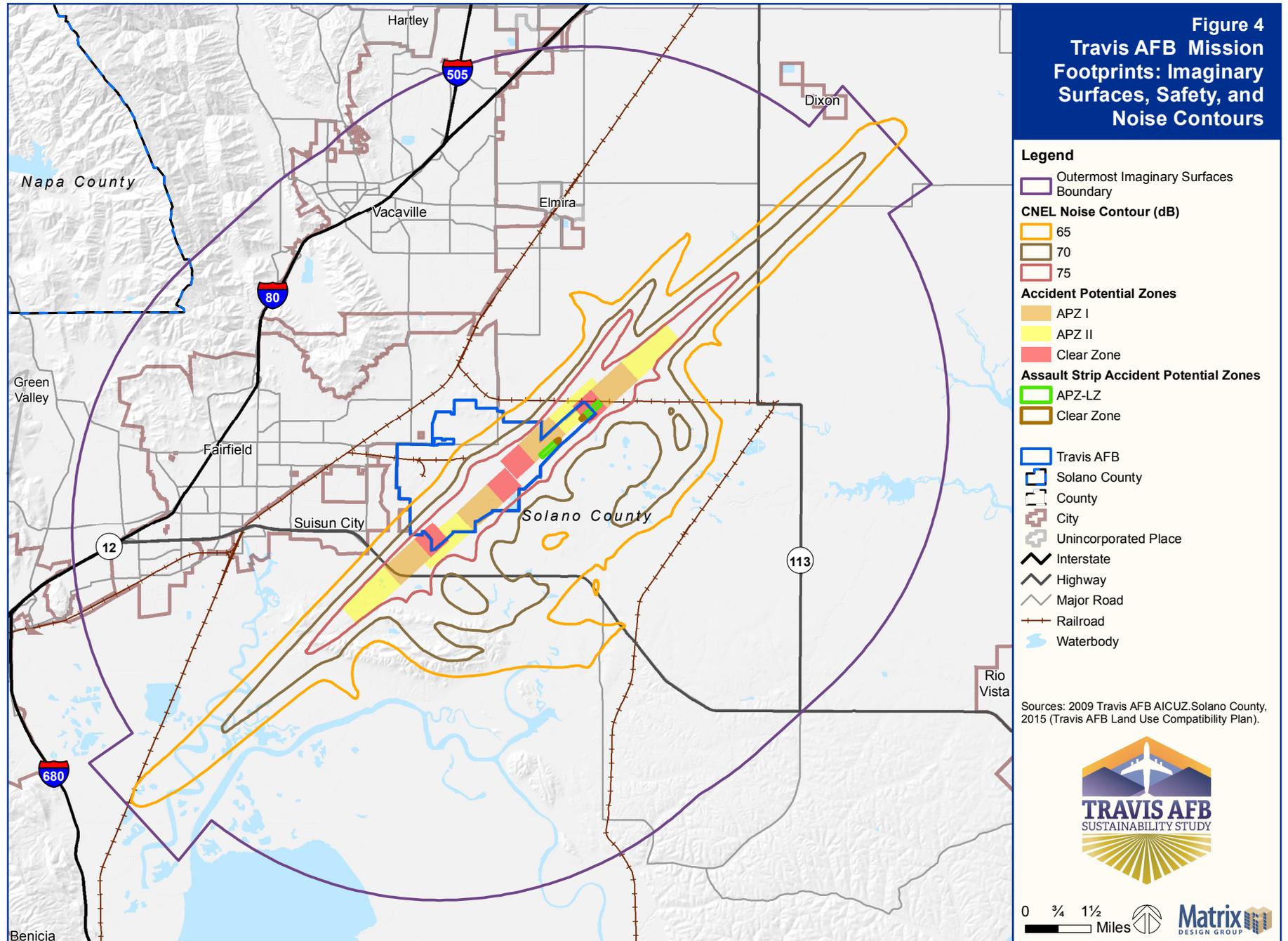
The APZ I is an area beginning at the end of each CZ at a width of 3,000 feet and a length of 5,000 feet. The APZ II is an area that begins at the end of each APZ I and is 3,000 feet wide by 7,000 feet long. These areas have lower potential for accidents and therefore have less restrictive development recommendations.

There are two smaller safety zones associated with the assault landing zone, the CZ and the APZ-LZ. The landing zone CZ begins at each end of the landing zone, which starts at an inner width which extends out 135 feet to each side of the centerline and tapers out to a width of 250 feet on each side of the centerline. The landing zone CZ extends out for 500 feet along the extended assault strip centerline. The APZ-LZ for the landing zone begins at the far end of the CZ and extends out for 250 feet on each side of the centerline for 2,500 feet along the extended landing zone centerline.

### **Aircraft Noise Contours (Figure 4)**

Aircraft noise is produced from flight operations (overflight, take-offs, landings, touch-and-go operations) and engine maintenance run-ups. An engine run-up is a maintenance procedure performed on the airfield to test for proper engine performance. The Air Force considers how its operations impact the local community by calculating an average-weighted noise level measured as a day-night average sound level (DNL). The Travis AFB AICUZ uses the DOD NOISEMAP program to produce noise contours indicating noise exposure levels from aircraft operations; this is an average of all types of aircraft at Travis AFB.

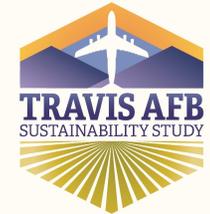
The contour lines developed in the model range from 60 decibel (dB) DNL to 80 dB DNL and increase in increments of five dB. The 80 dB DNL is the loudest contour line computed and the 60 dB DNL is the quietest. The DNL has been determined to be a reliable measure of community sensitivity to aircraft noise and has become a standard metric used to map aircraft noise impacts.



**Figure 4**  
**Travis AFB Mission**  
**Footprints: Imaginary**  
**Surfaces, Safety, and**  
**Noise Contours**

- Legend**
- Outermost Imaginary Surfaces Boundary
  - CNEL Noise Contour (dB)**
    - 65
    - 70
    - 75
  - Accident Potential Zones**
    - APZ I
    - APZ II
    - Clear Zone
  - Assault Strip Accident Potential Zones**
    - APZ-LZ
    - Clear Zone
  - Travis AFB
  - Solano County
  - County
  - City
  - Unincorporated Place
  - Interstate
  - Highway
  - Major Road
  - Railroad
  - Waterbody

Sources: 2009 Travis AFB AICUZ, Solano County, 2015 (Travis AFB Land Use Compatibility Plan).



The Travis AFB Land Use Compatibility Plan (LUCP) also establishes noise contours based on a maximum mission estimate. The LUCP utilized Federal Aviation Administration (FAA) methodology to determine the Annual Service Volume of the Travis AFB runway and taxiway system. By defining the maximum mission annual operations, a realistic level for future noise contours can be established. The LUCP noise contours cover a larger area than the AICUZ noise contours and will be utilized in this TSS in order to maintain mission noise protection and civilian development. The 2015 maximum mission noise contours are depicted on Figure 4.

### **Airspace Control (Figure 5)**

To help air traffic controllers and pilots deal with varying traffic conditions in the sky, United States airspace has been separated into six different classes (A, B, C, D, E, and G). These different classes have different requirements for entry into the airspace, pilot qualifications, radio and transponder equipment, and Visual Flight Rules (VFR) weather minimums.

Within the TSS Study Area, Travis AFB is surrounded by Class D airspace. The vertical boundary is 2,600 feet above the airport elevation (the ceiling). The core surface area has a radius of four nautical miles. Class D airspace reverts to class E or G during hours when the air traffic control tower is closed, or under other special conditions. Figure 5 shows the FAA Sectional Chart of the area and shows the Class D airspace areas described.

### **Part 77 Vertical Obstruction Compliance (Figure 6)**

The 500-foot rule, promulgated by the FAA, states that every citizen of the United States has “a public right of freedom of transit in air commerce through the navigable air space of the United States.” A height that is 200 feet AGL or above the established airport elevation, whichever is higher, and within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length is considered a vertical obstruction. This height increases in

the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 499 feet.

Figure 6 provides an illustration of this measure of vertical obstruction. Note that this is in addition to, not a replacement of, imaginary surface, discussed previously.

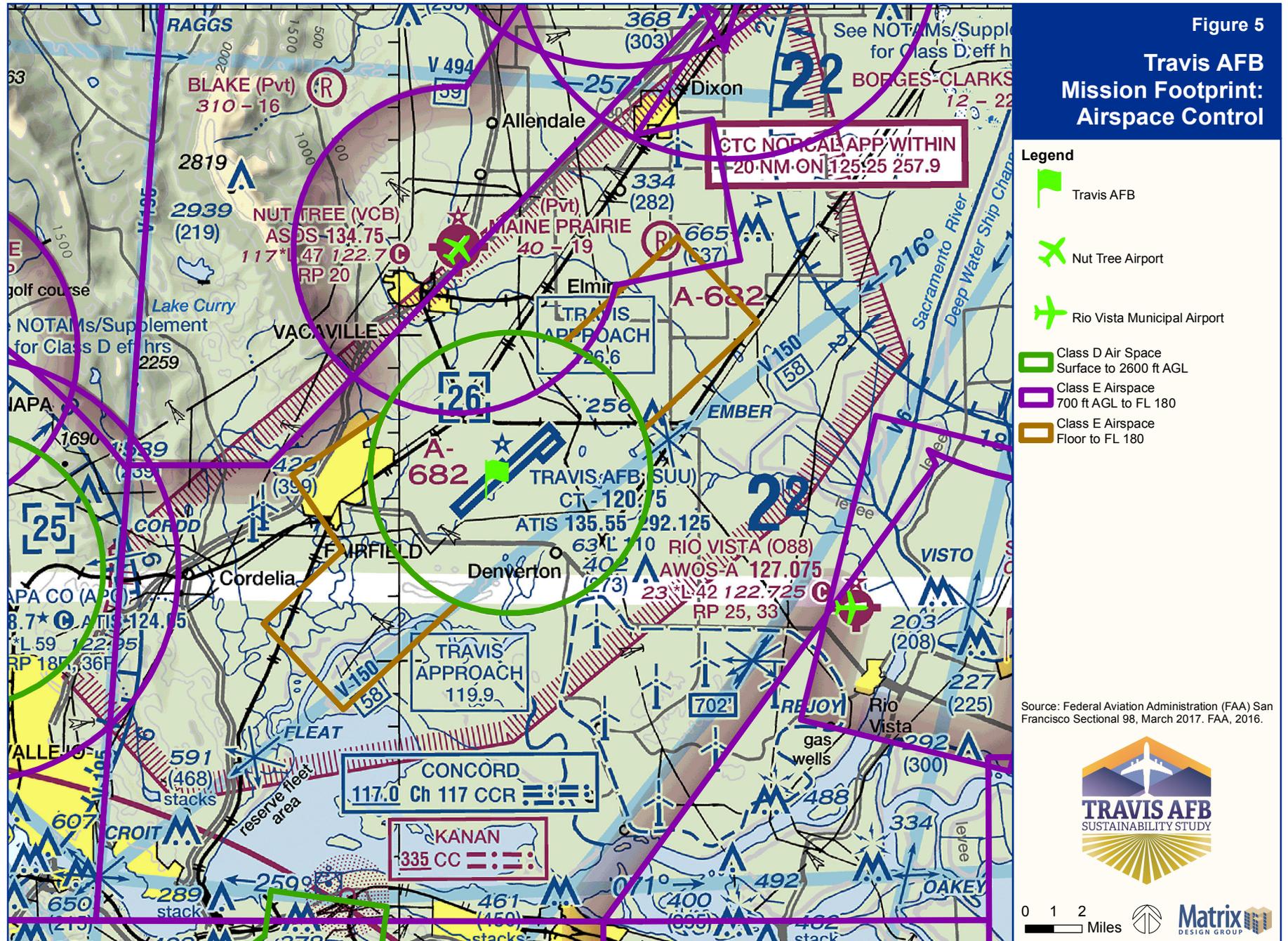
### **Bird / Wildlife Aircraft Strike Hazard Relevancy Area (Figure 7)**

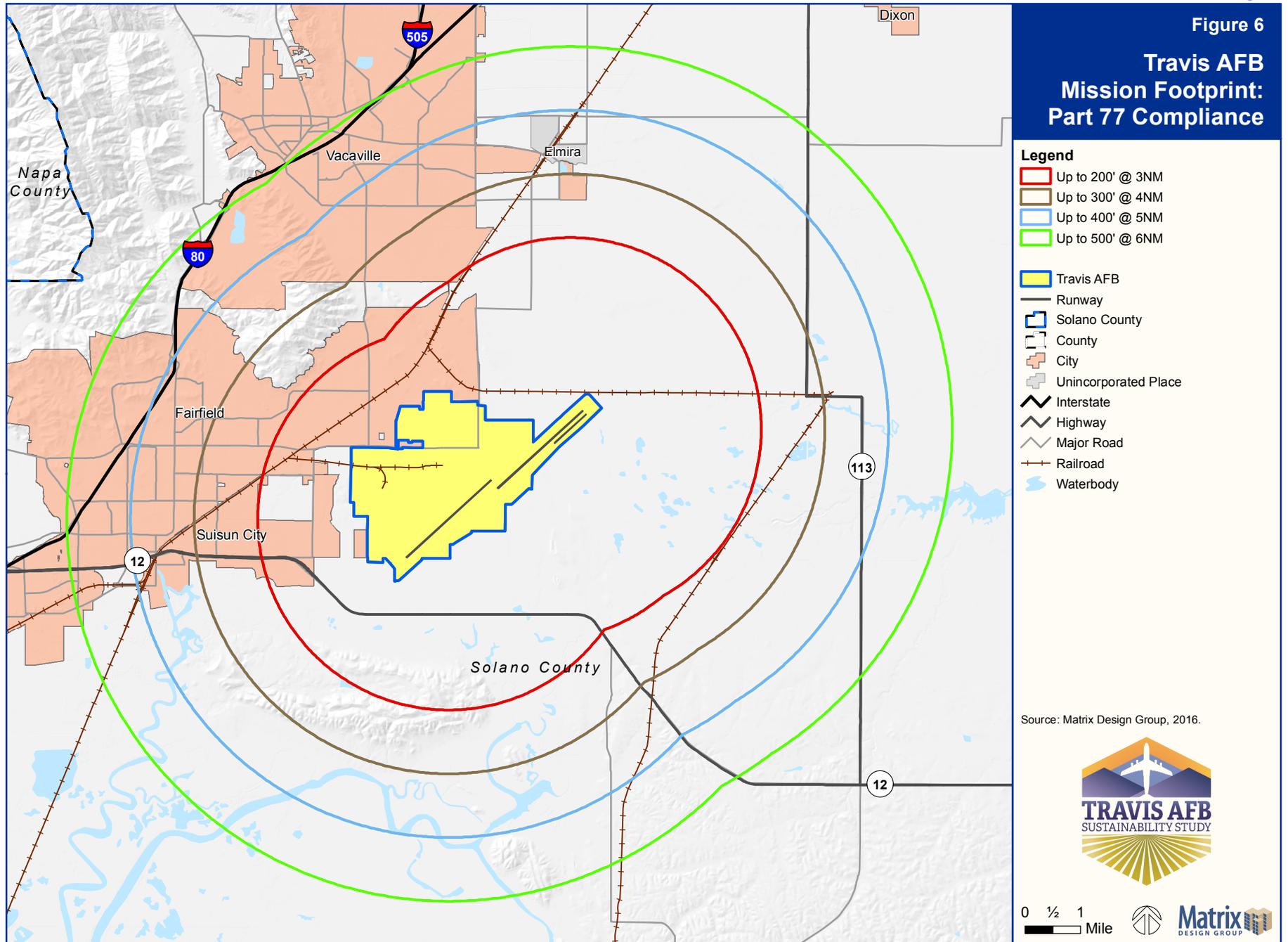
Birds and animals can present a hazard to military flight operations. While fatal accidents resulting from bird or wildlife strikes have been limited, impacts can be a safety concern and cause damage to aircraft. At Travis AFB, 232 bird strikes occurred from 2007 to 2015, causing over \$870,000 in damage to aircraft.

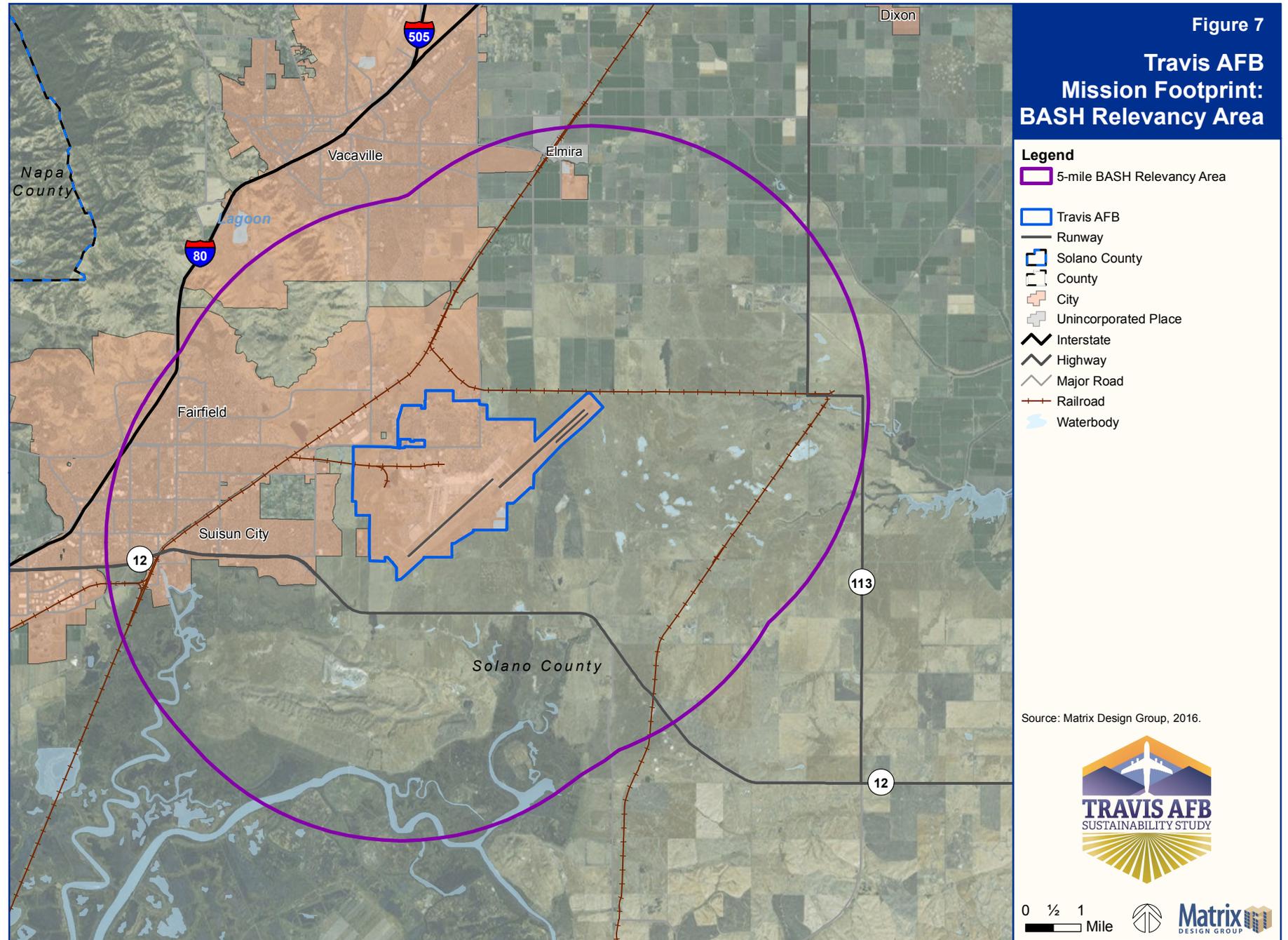
Certain types of land uses attract birds and wildlife, such as open water areas, standing water, and other natural areas. The location of Travis AFB near several marshes, parks, golf courses, and landfill facilities create potential bird / wildlife hazards. Additionally, agricultural activities and open space surrounding Travis AFB can also attract birds and potential hazard.

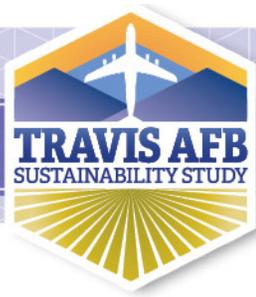
A Bird / Wildlife Aircraft Strike Hazard (BASH) program has already been adopted by Travis AFB to reduce the impact of birds on aircraft operations. Figure 7 shows a five-mile radius around the Travis AFB airport operations area. Based on FAA statistical analysis, this is the primary area of concern for BASH incidents to occur, and the primary focus of compatibility planning for this issue.

*Source: Bird / Wildlife Aircraft Strike Hazard (BASH) Reduction Program, 2008*









*There are many existing tools that can be used to encourage, promote, and manage compatibility between military installations and their neighboring communities. This chapter provides an overview of compatibility tools currently used or applied in evaluating and addressing compatibility issues in the Travis Air Force Base (AFB) Sustainability Study (TSS) area. It includes an overview of key plans and programs that impact compatibility planning organized by level of government.*

*There are three types of planning tools evaluated relative to their applicability: permanent, semi-permanent, and conditional. Permanent planning tools include acquisition programs, either fee simple purchase of property or the purchase of development rights. Semi-permanent tools include regulations such as zoning or adopted legislation. Conditional tools include memorandums of understanding, intergovernmental agreements, and other policy documents such as general plans that can be periodically modified. This review is meant to provide an overview of applicable planning tools and determine how each may apply to compatibility issues identified by the TSS process, as presented under the compatibility factors discussed in Chapter 5, Compatibility Assessment.*

## **Federal Programs and Policies**

### **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 Encroachment Management Framework, which has four elements (Organize, Assess, Act, and Monitor) to address the variety of challenges. Organization involves 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.

### **Clean Air Act**

The US Clean Air Act empowers the Environmental Protection Agency (EPA) and state environmental agencies to regulate pollution. The Clean Air Act provides for the EPA and state regulatory agencies to establish heightened air quality regulations in counties designated by the EPA as nonattainment for air quality. A map of these counties is available at <http://www.epa.gov/oaqps001/greenbk/mapnpoll.html>. A portion of Solano County is located within the Bay Area Air Quality District, which is designated as nonattainment for ozone and particulate matter, two of the National Ambient Air Quality Standards pollutants as recognized by the EPA.

These could have some effect on Base operations although it is not of regional use.

Compliance with the CAA is a high priority for Travis AFB and the surrounding communities. Continued designation of nonattainment could require Travis AFB and the surrounding communities to continue to pursue more efficient equipment and operating procedures to reduce air emissions.

### **Clean Water Act**

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

The CWA is relevant to Travis AFB because of its proximity to the Suisun Marsh and Suisun Bay. The conservation and protection of water resources is critical to sustaining current and future mission activities.

### **DOD Energy Siting Clearinghouse**

Section 358 of the 2011 National Defense Authorization Act authorized the study of the effects of new construction and obstructions on military installations and operations. The Energy Siting Clearinghouse serves to coordinate the DOD review of existing applications for energy projects. Several key elements of Section 358 include designation of a senior official and lead organization to conduct the review of energy project applications, a specific timeframe for completion of a hazard assessment associated with an application (30 days), specific criteria for DOD objections to projects and a requirement to provide an annual status report to Congress. This legislation facilitates procedural certainty and a predictable process that promotes compatibility between energy independence and military capability. The Siting Clearinghouse also conducts a Mission Compatibility Evaluation

Process that provides a timely, transparent, and science-based analysis to identify the mission impacts from energy development projects. This assists in preventing, minimizing, or mitigating adverse impacts on military readiness and operations, including test and evaluation activities.

### **Federal Aviation Act**

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

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

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

airfields. Additional information on Part 77 is located on the FAA Internet site at <http://www.faa.gov/>.

As of January 29, 2013, the main focus of Part 77.17 is to establish standards to determine obstructions within navigable airspace, typically within a certain distance from an airport or airfield. The FAA has identified certain imaginary surfaces around runways to determine how structures and facilities are evaluated and identify if they pose a vertical obstruction relative to the airspace around a runway. The levels of imaginary surfaces build upon one another and are designed to eliminate obstructions to air navigation and operations, either natural or man-made. The dimension or size of an imaginary surface depends on the runway classification.

### **National Environmental Policy Act**

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

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

A NEPA document can serve as a valuable planning tool for local planning officials. An EA or EIS can assist in the determination of potential impacts that may result from changing military actions or operations and their effect on municipal policies, plans and programs, and the surrounding community.

Public hearings are required for all EIS documents released under NEPA. NEPA requires publishing a draft EA and subsequent Finding of No Significant Impact (FONSI) and allowing public comment for a period of 30 days. An EA may result in a FONSI or Record of Decision concluding that the action will have a significant impact and an EIS is required. The information obtained by the EA / EIS is valuable in planning coordination and policy formation at the local government level.

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. The EIS is a public process that welcomes participation by the community.

### **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 in 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 current 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 US.

### **Telecommunications Act of 1996 and the Federal Communications Commission**

The Telecommunications Act of 1996 was the first comprehensive update to federal telecommunication law in over six decades and was in large part intended to open up the marketplace to greater competition. Changes in the means through which information is produced, accessed, stored and shared made the federal government response imperative. The increasing use and development of personal mobile phones, satellite transmission, high speed fiber optics, and other related factors are often pushing demand beyond the system capacity.

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

Telecommunications towers have the potential to cause vertical obstruction issues near Travis AFB. Requirements for tower placement can help to reduce potential incompatibility.

## **Travis AFB Plans and Programs**

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### **Air Installation Compatible Use Zone Study**

The Air Installation Compatible Use Zone (AICUZ) program was created by the DOD in 1973 to address noise and safety hazards associated with aviation operations. The AICUZ program provides guidance to minimize impacts from aviation operations (noise and accidents) through specific attention to development and land uses. The AICUZ framework evaluates

noise from military aircraft, and applies the concept of clear zones / accident potential zones, with corresponding recommended development / building densities and intensities designed to encourage compatibility between military operations and communities.

Travis AFB's current AICUZ was completed in 2009. The AICUZ provides recommendations to local government and other entities for actions they can implement to further compatibility goals and objectives of their comprehensive master plans, development codes (zoning ordinances), and other land use regulations.

### **Bird / Wildlife Aircraft Strike Hazard Plan**

Travis AFB maintains a Bird / Wildlife Aircraft Strike Hazard (BASH) Plan to minimize the threat of bird strikes to aircraft and protect local wildlife. A BASH Plan is designed to minimize wildlife and bird strike damage to military aircraft by controlling birds, alerting aircrew and operations personnel, and providing increased levels of flight safety, especially during the critical phases of flight, take-off and landing operations.

Specifically, the plan has two phases, Phase I and Phase II. Phase I concentrates on wildlife control and dispersal and is in effect year round. Phase II is used in conjunction with Phase I procedures and concentrates on wildlife avoidance, using scheduling and airfield operating restrictions. Phase II is implemented during the September through April migration period. The plan also establishes and outlines the responsibilities of the Bird Hazard Working Group that meets to review strike data and recommend actions to reduce hazards. Bird Watch Conditions are also defined, ranging from low to moderate to severe.

### **Integrated Natural Resources Management Plan**

The policy of the DOD is to fully comply with applicable federal, state, and county laws, ordinances, regulations, and guidelines, specifically designed to protect and preserve the environment. The Sikes Act Improvement

Amendments of 1997 requires that the DOD manage their natural resources while providing a sustained method for the multiple uses of those resources. The Act also requires the development of the Integrated Natural Resources Management Plan (INRMP) document. To guide natural resource management efforts on-installation, Travis AFB maintains an INRMP, most recently updated in March 2016.

The Travis AFB INRMP describes the surrounding environment and provides an assessment of the impacts to these resources as a result of mission-related activities. The INRMP directs management practices that comply with federal, state, and local standards. Additionally, it is designed to protect natural resources, mitigate negative impacts and enhance the positive effects of Travis AFB's mission on local and regional natural resources. The primary natural resources goals involve implementation of the INRMP, fish and wildlife management, wetland management, threatened and endangered species management, grazing management, and invasive species management.

### **Installation Development Plan**

The Installation Development Plan (IDP), in accordance with Air Force Instruction 32-7062, was completed in 2016 and provides a developmental path forward that incorporates current and future mission requirements, development constraints and opportunities, and recommended courses of action to achieve optimal use of lands, facilities, and resources in support of installation performance. The IDP is intended to guide future development decisions, including consolidations, new construction and realignments as mission changes occur. Five goals were established in the Travis AFB IDP to help guide development:

- Achieve a cohesive, total force mobility and contingency projection platform that accommodates all mission partners.
- Enhance existing airfield infrastructure to meet current and future mission requirements.

- Promote conservation, sustainability, and environmental stewardship.
- Protect mission capability through full-spectrum encroachment management and community partnerships.
- Foster Travis AFB quality of life through installation support and services.

## **State of California**

### **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 National Environmental Policy Act.

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 by requiring the mitigation of significant environmental effects, when feasible.

### **California Farmland Conservancy Program**

The California Farmland Conservancy Program (CFCP), established in 1995, authorized by the California Code of Regulations Title 14, Division 2, Chapter 2, is a statewide grant program that supports and encourages local government agencies and eligible non-profit organizations to preserve California's leading industry: agriculture. The CFCP program enables local government agencies to preserve California's valuable land asset by placing farmland into agricultural conservation easements. The easements are essentially deed restrictions that limit development from occurring on lands within the easement, while providing for the preservation of the natural environment either for scenic views or for commercial agriculture uses. These easements renew annually unless the landowner or the government

agencies opt for non-renewal, making it a non-permanent conservation. There is no minimum number of years required to remain in the program and many do so in perpetuity; therefore, the land remains in the agriculture land use category even if the land changes ownership.

### **California Land Conservation Act / Williamson Act**

The California Land Conservation Act, or the Williamson Act, was enacted in 1965 under Governor Pat Brown with the aim of preserving and protecting California's leading agriculture industry. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of designating certain parcels of land for only agriculture use or open space. This designation results in lower property tax assessments to landowners and a state subsidy to local governments for foregone tax revenues associated with private landowner participation. A Land Conservation Agreement (LCA) through the Williamson Act allows for reduction in tax assessment during the period of time the agreement is in effect. It continues to run but is not a permanent solution as the property owner can request termination. The LCA values the property as agriculture rather than having a speculative value included as well. Instead of automatically renewing for another year, the agreement would then terminate in 10 years (earlier if findings are made and repayment of taxes are made). An alternative option to this program is to place the land into a permanent agricultural conservation easement, in which the land will remain agricultural in perpetuity.

*Source: [www.conservation.ca.gov/dlrp/Pages/index.aspx](http://www.conservation.ca.gov/dlrp/Pages/index.aspx)*

### **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. In particular, it requires an Airport Land Use Commission to formulate an LUCP for military airfields with the same requirements as public use airports, consistent with the safety and noise standards found in the Air Installation Compatible Use Zone Study.

The intent of an LUCP is to encourage compatibility between airports and the various communities that surround them.

In accordance with state law, Solano County has established an airport land use commission (ALUC) to prepare land use compatibility plans for the two public-use airports as well as Travis AFB, in Solano County and to review general plans, proposed changes to zoning codes and ordinances, land use actions and development projects, and airport development plans for consistency with compatibility policies. The ALUC has the authority to coordinate planning at the state, regional and local levels so as to provide for the orderly development of air transportation, while at the same time protecting the public health, safety, and welfare. State law does not authorize ALUCs to zone property or apply other land use controls normally exercised by local public agencies.

## **Local Jurisdiction Planning Tools**

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### **General Plans**

California law requires every city and county to prepare and adopt a comprehensive, long-range general plan complete with text and a map, to serve as a guide for the physical development of that community. The law requires that, at a minimum, the general plan identify issues and provide policies for seven broad areas, called elements: land use, circulation, housing, open space, conservation, noise, safety, environmental justice and air quality. The law permits other issues to be addressed, either within the required elements or as additional ones. State law requires that day-to-day decisions of a city follow logically from and be consistent with the general plan.

All of the Study Area jurisdictions have incorporated goals, programs, objectives, and policies pertaining to Travis AFB into their General Plans.

## Zoning Ordinances / Regulations

The purpose of the zoning ordinance is to serve the general welfare, safety, and health of the city and its residents and to recognize specific, sustainable, and compatible uses for areas within its jurisdiction. In order to be effective in accomplishing the jurisdiction's goals and visions, a zoning ordinance / regulation should coincide with the adopted general plan. Zoning ordinances / regulations are considered semi-permanent planning tools because they can be amended and lands can change their zoning designation if they go through the proper process. Zoning is not required by California law.

All of the Study Area jurisdictions refer to the Travis AFB LUCP and the Solano County ALUC in their zoning ordinances. Any land uses within an airport area of influence or area of concern are to conform to the applicable compatibility policies and criteria set forth in the Travis AFB LUCP.

## Subdivision Regulations

Subdivision regulations outline requirements to implement functional streets, and to provide the community with sufficient lot sizes and open space, while conforming with the general plan to develop land in an orderly manner.

While subdivision regulations typically define the standards, procedures, and other requirements for land division, they can also help to prevent or limit future encroachment into an installation or adjacent operational areas by specifying allowable types of infrastructure improvements associated with a subdivision, such as street lights. Subdivision regulations can be used as a foundation to ensure mission sustainability, particularly with dark sky provisions and development density.

## Building Codes

Building codes are intended to regulate building construction, materials, alteration and occupancy to ensure health, safety, and welfare. Building codes can regulate building construction such that it is compatible with military operations, including sound attenuation for residences within applicable noise zones. Building codes, similar to other regulatory tools, are considered semi-permanent.

## Annexation

The location and boundary of each city and special district within Solano County can influence a range of land use, infrastructure and resource decisions that can have an impact on long-term compatibility with Travis AFB. Relative to land use planning and regulation, Solano County and the cities within the county have this primary responsibility. The cities within their incorporated boundaries and the county in the unincorporated areas.

Over time jurisdictional boundaries can change through the process of annexation. For a city, annexation is the means by which the corporate boundaries of the city are expanded. Once an area is annexed, it comes under the land use authority of that city.

In the TSS Study Area, the annexation process is regulated by the Solano Local Agency Formation Commission (LAFCO). The Solano LAFCO is composed of elected officials from Solano County and cities within the county as well as a member of the public. Within the county, the Solano LAFCO is charged with the review, approval (with or without amendment) or denial of proposals for boundary changes for cities or special districts.

## Solano County

### Land Use Compatibility Plan

The Travis Air Force Base Land Use Compatibility Plan (LUCP) sets forth land use compatibility policies applicable to future development near the Base. The plan holds an advisory status within the Travis AFB airport influence area (AIA), consisting of the entirety of Solano County. The policies are designed to ensure that future land uses in the surrounding area will be compatible with the realistically foreseeable, potential aircraft activity at Travis AFB. As adopted by the Solano County Airport Land Use Commission (ALUC), these policies provide the basis by which the commission can carry out its review of certain proposals for general plans, specific plans, zoning ordinances, and certain land use development proposals near Travis AFB for compatibility with aircraft operations at the Base.

The compatibility criteria defined by the policies are also intended to be reflected in the general plans and other policy instruments adopted by the entities having jurisdiction over land near Travis AFB. Specifically, the Travis AFB LUCP affects and requires action by the County and Cities in the County.

The LUCP was last adopted in October 2015, an update to the previous 2002 plan. The updated plan was needed to ensure consistency with the policies and standards set by the Solano County ALUC Review Procedures and the California Department of Transportation (Caltrans) 2011 California Airport Land Use Planning Handbook. The update also addresses compatibility issues associated with renewable energy projects and assault landing zone operations.

### Compatibility Zones

The Travis AFB LUCP establishes six compatibility zones – A, B1, B2, C, D, and E – as well as two overlay zones – the Assault Landing Zone (ALZ) Training Overlay Zone and the Height Review Overlay Zone.

**Compatibility Zone A** consists of the Travis AFB runways, together with immediately adjoining areas within the runway primary surface and clear zones.

**Compatibility Zone B1** comprises APZ I.

**Compatibility Zone B2** is comparable to APZ II, but is expanded to encompass approach and departure flight tracks that are not aligned with the runway.

**Compatibility Zone C** encompasses locations exposed to potential noise in excess of approximately 60 decibel (dB) Community Noise Equivalent Level (CNEL) together with additional areas occasionally affected by concentrated numbers of low-altitude aircraft overflights.

**Compatibility Zone D** includes all other locations beneath any of the Travis AFB airspace protection surfaces delineated in accordance with Federal Aviation Regulation (FAR) Part 77 as well as areas subject to frequent aircraft overflight.

**Compatibility Zone E** includes the area located between Zone D and the Travis AFB AIA boundary, which is coterminous with the Solano County boundaries.

The **ALZ Training Overlay Zone** is based on the combat arrival and departure simulations that occur at a minimum elevation of 500 feet Above Ground Level (AGL).

The **Height Review Overlay Zone** covers locations where the terrain exceeds or comes within 35 feet of any of the FAR Part 77 airspace protection surfaces for Travis AFB.

Each compatibility zone and overlay zone have specific requirements and regulations, such as maximum densities and intensities (indoor, outdoor, and single acre intensity), uses that are prohibited within the given zone, and additional development conditions. These regulations are separated into General Standards, Noise Criteria, Safety Criteria, Airspace Protection Criteria, and Avigation Easement Dedication.

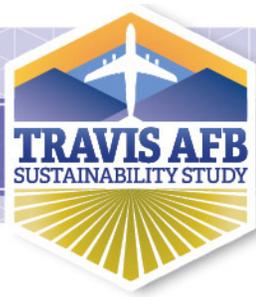
### **Solano County Local Agency Formation Commission**

The Solano County Local Agency Formation Commission (LAFCO) is responsible for coordinating changes in local governmental boundaries, conducting special studies that review governmental structure, and preparing a sphere of influence for each city and special district within the county.

The Solano County LAFCO regulates, through approval or denial, the boundary changes proposed by other public agencies or individuals. The LAFCO does not have the power to initiate boundary changes on its own.

The Solano County LAFCO also has the power to determine spheres of influence for all local governmental agencies. A sphere of influence is a planning boundary outside of an agency's legal boundary that designates the agency's probable future boundary and service area. Factors considered in a sphere of influence review focus on the current and future land use, the current and future need and capacity for service, and any relevant communities of interest. Spheres of influence are reviewed every five years.

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## Identification of Compatibility Issues

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

A number of factors assist in determining whether community and military plans, programs, and activities are compatible or in conflict with joint land uses such as community activities and military installations. For the Travis Sustainability Study (TSS), 24 compatibility factors were used to identify, determine, and establish a set of key TSS compatibility issues.

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

## Methodology and Evaluation

The methodology for the TSS consisted of a comprehensive and inclusive discovery process to identify key stakeholder issues associated with the compatibility factors. At the initial Policy Committee (PC) and Technical Advisory Committee (TAC) workshops and public meetings, stakeholders were asked to identify the location and type of issue in conjunction with compatibility factors they thought existed today or could occur in the future. As a part of the evaluation phase, the PC, TAC, and the public examined and prioritized the extent of existing and potential future compatibility issues that could impact land within or near the TSS Study Area. Other factors and associated issues were analyzed based on available information and similarity with other community compatibility assessment projects around the country.

Of the 24 compatibility factors considered, nine were determined to have no major issues relative to this TSS:

- Air Quality
- Cultural Resources
- Dust / Smoke / Steam
- Frequency Spectrum Capacity
- Legislative Initiatives
- Marine Environments
- Public Trespassing
- Scarce Natural Resources
- Vibration

## Organization of the Issues

Chapter 5 of the TSS Background Report is organized into two main sections: Minor Issues and Major Issues. Chapter 5 in this TSS Report also differentiates the issues by Minor and Major Issues. Minor Issues are compatibility issues that were identified during the TSS process but were determined through further analysis during the TSS to be adequately managed, or a solution was developed and / or implemented during the TSS project timeframe and they are no longer issues. The Minor Issues were isolated from the original set of compatibility issues as they were determined not to be as significant as the Major Issues. Thus, the Minor Issues did not warrant in-depth analysis or any strategies to address them. The Major Issues section provides more in-depth analysis of the more significant issues for the TSS.

More information on each issue can be found in Chapter 5 Compatibility Assessment in the Background Report, in which each of the 24 compatibility factors are identified with a section number and the name of the factor, e.g., 5.2 Air Quality, 5.2 Anti-Terrorism / Force Protection, etc. The factor's definition, technical background (if applicable), and key terms information will also be found in each numbered subsection. For factors that did not have any compatibility issues identified, only the factor definition is presented.

## Minor Issues

- **Communicating between Travis AFB and communities.** Travis AFB personnel, such as fire fighters, who often communicate with local communities, have to use different frequencies because the communities cannot use DOD frequencies.
- **Economic impacts from alternative energy restrictions.** The Travis AFB Land Use Compatibility Plan restrictions on alternative energy may impact future business opportunities, including the siting of energy testing facilities.
- **Land mobile radio interferes with Part 15 devices.** Frequencies used by Travis AFB operations may interfere with Part 15 devices in the local communities, such as garage door openers.
- **Impacts to VORTAC radio navigation beacon.** The Sonoma Raceway has caused operational impacts to the VORTAC radio navigation beacon at Skaggs Island that have caused it to be shut down for periods of time.
- **Impacts from the Airport Land Use Commission review.** Cities are required to send every rezoning application through the ALUC for commission hearing and approval.
- **Hazardous materials in pipelines.** Hazardous materials, such as jet fuel, travel through pipelines in the communities as they bring supplies to Travis AFB. Concerns over transit, potential for spills, and ensure adequate standoff distances.
- **Clear Zone.** Not all of the Clear Zone for Travis AFB is on government land.
- **Wind turbines.** Some existing wind turbines south of Travis AFB are planned to be switched out for taller models.
- **Flooding of Union Creek onto Travis AFB.** Union Creek on the south side of the airfield sometimes floods due to blockage at outfall where the creek leaves Travis AFB.
- **Pollution plumes.** There are historic plumes that extend off Travis AFB.
- **Air quality attainment.** Travis AFB is within a region that is not in attainment for PM2.5 and Ozone.

## Major Issues

### Anti-Terrorism / Force Protection

Anti-Terrorism Force Protection (AT / FP) relates to the safety of personnel, facilities, and information on an installation from outside threats. Security concerns and trespassing can present immediate compatibility concerns for installations. Due to current global conditions and recent events, military installations are required to implement more restrictive standards to address AT / FP concerns. These measures include increased security checks at installation gates and physical changes (such as new gate / entry designs). The following AT / FP issues were identified:

- **Development near Travis AFB Main Gate.** Redevelopment in the commercial center on Parker Ave could become a security concern if additional floors are added that could provide a visual of the gate and into the installation.
- **Security concerns at hospital.** If a medical emergency happens in the surrounding area and Travis's hospital is the nearest to it, patients are taken there with or without background check / security clearance.

### Biological Resources

Biological resources include federal and state listed species (threatened and endangered species) and their habitats. These resources may also include habitat such as wetlands and migratory corridors that are critical to the overall health and productivity of an ecosystem. The presence of sensitive biological resources may require special development considerations and should be included early in the planning process. The following Biological Resource issues were identified:

- **Location of federally listed species on Travis AFB, including critical habitat.** There are several federally listed threatened and endangered species located on Travis AFB that impact Base operations.

- **Bird / wildlife aircraft strike hazards.** Travis is located in the Pacific Flyway and has many water areas around it, which are natural bird attractants, causing potential for bird / wildlife aircraft strike hazards. Siting of habitat areas near Travis AFB flight paths and operation areas could attract additional birds to the area and increase bird-aircraft strike hazards.



*Birds in Suisun Bay*

### Communication / Coordination

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

- **Cannot hear radio communication from Nut Tree Airport.** Air Traffic Control Tower at Travis AFB cannot receive radio communications from pilots at Nut Tree Airport because of a hill between the two facilities that interferes with the communication frequency.

- **Informal communication between Travis AFB and surrounding jurisdictions.** While there is generally good communication between Travis AFB and the surrounding communities, it is often done informally on a person-to-person basis and does not have a standardized procedure or established points of contact.
- **Technical guidance on compatibility.** Local jurisdictions need clearer input from the Air Force regarding planning and development decisions and whether they are compatible with Travis AFB and its missions.

### Frequency Spectrum Impedance / Interference

Frequency spectrum is the entire range of electromagnetic frequencies used for communications and other transmissions, which includes communication channels for radio, cellular phones, and television. In the performance of typical operations, the military relies on a range of frequencies for communications and support systems. Similarly, public and private users rely on a range of frequencies in the use of cellular telephones and other wireless devices on a daily basis. The following Frequency Spectrum Impedance / Interference issues were identified:

- **Radar impacts from wind turbines.** Location of wind turbines south of Travis AFB impact radar field of view. Turbines are creating false positives. This becomes more of an issue with lots of small aircraft going through the radar on their way to Napa County and the Bay Area. The County and the Airport Land Use Commission have adopted Standards that effectively limit any future geographic expansion of areas where turbines are allowed.

### Housing Availability

Local housing availability addresses the supply and demand for housing in the region, the competition for housing that may result from changes in the number of military personnel, and the supply of military family housing provided by the installation. The following Housing Availability issue was identified:

- **Availability of housing.** Airmen stationed at Travis AFB, especially enlisted personnel, can find it challenging to find housing that is affordable in the local communities, although housing in Solano County is significantly more affordable than communities to the south in the greater San Francisco Bay Area.



*Travis AFB military family housing*

### Infrastructure Extensions

Infrastructure refers to public facilities and services such as sewers, water, electric, and roadways that are required to support development (existing and proposed). Public facilities and services should be appropriate for the type of urban or rural development they serve, but also limited to the existing and planned needs and requirements of the area. For example, the provision of a safe transportation system, including all modes of transportation (automobile, mass transit, railway, highway, bicycle, pedestrian, air, water, etc.), is an important infrastructure component. Adequate transportation infrastructure contributes to local, regional, and state accessibility. The following Infrastructure Extension issues were identified:

- **Infrastructure growth outside southwest edge of Travis AFB.**

Suisun City's General Plan shows a new interchange for an industrial park along Highway 12, within the city's Special Planning Area in its Sphere of Influence. This will also require infrastructure extensions to serve the area.

- **Enhanced Use Lease development infrastructure.** Development of the Enhanced Use Lease area on Travis AFB would require outside sources to provide utilities (water, sewer), services (fire, police), and traffic / roadway maintenance.

### Land / Air / Sea Space Competition

The military manages or uses land and air space to accomplish testing, training, and operational missions. These resources must be available and of a sufficient size, cohesiveness, and quality to accommodate effective training and testing. Military and civilian air and sea operations can compete for limited air and sea space, especially when the usage areas are in close proximity to each other. Use of this shared resource can impact future growth in operations for all users. The following Land / Air / Sea Space Competition issues were identified:

- **New ICON aircraft pilot school.** Nut Tree Airport has potential for expansion of facilities and operations, including a new pilot school for the ICON aircraft.
- **Lack of airspace control.** The Class D airspace around Travis AFB does not have the usual restrictions other military installations operate under, leaving it open to general aviation and allowing congested airspace.
- **Usage of unmanned aerial systems.** There is a potential that an increase in unmanned aerial systems (also known as drones) usage could cause safety concerns for aircraft. This is an emerging issue at all military installations.

- **Crop dusting activities near Travis AFB.** Crop dusting activities in the vicinity of Travis AFB could cause safety concerns during flight operations. There have been minimal reported problems to date.



*ICON A5 aircraft*

### Land Use

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

- **Land development in APZs.** There is some interest in developing land in Travis AFB's southern APZ that could pose a compatibility issue, depending on the type of use that is developed.

- **Compatibility of future Enhanced Use Lease development on Travis AFB.** Close coordination will be required to ensure any future Enhanced Use Lease development on Travis is compatible with surrounding areas and is not competitive with planned community development.
- **Flight tracks.** When the Air Force changes its flight tracks, it affects land planning and policy in the communities.
- **Future development south of Travis AFB.** City of Suisun City has received plans for development south of Travis AFB, including a potential interchange.
- **Travis Reserve Area.** The protective Travis Reserve land use designation expires in 2020. After 2020, the designation can be renewed, adjusted, or removed.

### Light and Glare

This factor refers to man-made lighting (street lights, airfield lighting, building lights) and glare (direct or reflected light) that disrupts vision. Light sources from commercial, industrial, recreational, and residential uses at night can cause excessive glare and illumination, impacting the use of military night vision devices and air operations. Conversely, high intensity light sources generated from a military area (such as ramp lighting) may have a negative impact on the adjacent community. The following Light and Glare issue was identified:

- **Potential for glint and glare from solar arrays.** There is a potential that new solar energy development could cause glint and glare that could impact pilots' vision. The County has adopted an ordinance that minimizes this potential in unincorporated areas by requiring detailed study of glint glare impacts from potential projects. Further, the County has adopted an ordinance that limits commercial solar energy development on agricultural land.



*Solar array at North Bay Regional Water Treatment plant in Vacaville*

### Noise

Sound that reaches unwanted levels is referred to as noise. The central issue with noise is the impact, or perceived impact, on people, animals (wild and domestic), and general land use compatibility. Exposure to high noise levels can have a significant impact on human activity, health, and safety. The decibel (dB) scale is used to quantify sound intensity. To understand the relevance of decibels, a normal conversation often occurs at 60 dB, while an ambulance siren from 100 feet away is about 100 dB. Noise associated with military operations (arrival / departure of military aircraft, firing of weapons, etc.) may create noises in higher dB ranges. The following Noise issue was identified:

- **Noise from aircraft operations.** The aircraft operations that occur at Travis AFB produce noise that can be heard outside the boundaries of the Base, within surrounding communities.

## Roadway Capacity

Roadway capacity relates to the ability of existing freeways, highways, arterials, and other local roads to provide adequate mobility and access between military installations and their surrounding communities. As transportation systems grow and provide more capacity, these facilities induce and encourage growth as rural areas become more accessible. The following Roadway Capacity issues were identified:

- **Commercial trucks using North Gate.** About once a week, commercial trucks try to enter Travis AFB from the North Gate due to inadequate signage. The trucks must then turn around, causing traffic delays due to limited facilities for such maneuvers.
- **Roadway capacity at North Gate.** Road capacity at North Gate is inadequate for safety, especially if there is an accident.
- **Main Gate traffic.** There are concerns about throughput at the Main Gate impacting traffic off-Base at peak times.

## Safety Zones

Safety zones are areas in which development should be more restrictive, in terms of use and concentrations of people, due to the higher risks to public safety. Issues to consider include aircraft accident potential zones, weapons firing range safety zones, and explosive safety zones. Military installations often engage in activities or contain facilities that, due to public safety concerns, require special consideration by local jurisdictions when evaluating compatibility. It is important to regulate land use near military airfields in order to minimize damage from potential aircraft accidents and to reduce air navigation hazards. To help mitigate potential issues, the Department of Defense (DOD) has delineated Clear Zones (CZ) and Accident Potential Zones (APZ) in the vicinity of airfield runways. APZs are usually divided into APZ I and APZ II. Each zone was developed based on the

statistical review of aircraft accidents. Studies show that most mishaps occur on or near the runway, predominately along its extended centerline. The following Safety issues were identified:

- **Fires from off-Base impacting Travis AFB.** Fires have started in the grasslands outside Travis AFB and have burned areas on the Base.



*An on-Base grass fire that spread east of Travis AFB in August 2015 (Source: KCRA)*

## Vertical Obstructions

Vertical obstructions are created by buildings, trees, structures, or other features that may encroach into the navigable airspace or line of sight radar signal transmission pathways used by the military. These obstructions can be a safety hazard to both the public and military personnel and potentially impact military readiness. Vertical obstructions can compromise the value of low-level flight training by limiting the areas where such training can occur. These obstructions can include a range of items from man-made, such as telephone poles, utility transmission towers, and radio antennas, to natural, such as tall trees and land features. The following Vertical Obstructions issues were identified:

- **Infrangible fence.** The adjacent property north of the runway on the east side of Travis AFB has erected an infrangible fence, right up against the Base fence. Fencing at the end of the runway must be frangible in the event a mishap was to occur upon landing or takeoff.

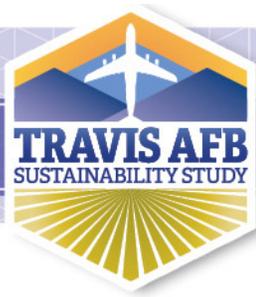
### Water Quality / Quantity

Water quality / quantity concerns include the assurance that adequate water supplies of good quality are available for use by the installation and surrounding communities as the area develops. Water supply for agriculture and industrial use is also considered. The following Water Quality / Quantity issues were identified:

- **Travis AFB water supply.** Ensure Travis AFB continues to have a secure and reliable water supply, including multiple supply sources.



*Travis AFB Water Treatment Plant*



## Implementation Plan

This chapter identifies and organizes the recommended courses of action (strategies) that have been developed through a collaborative effort between representatives of local jurisdictions, Travis AFB, state and federal agencies, local organizations, the general public and other stakeholders that own or manage land or resources in the region. Because the TSS is the result of a collaborative planning process, the strategies represent a true consensus plan; a realistic and coordinated approach to compatibility planning developed with the support of stakeholders involved throughout the process.

***It is important to note that the TSS is not an adopted plan, but rather a recommended set of strategies which should be implemented by the TSS participants in order to address current and potential future compatibility issues.***

The TSS strategies incorporate a variety of actions that promote compatible land use and resource planning. Upon implementation, existing and potential compatibility issues arising from the civilian / military interface can be managed more effectively and proactively. The recommended strategies function as the heart of the TSS document and are the culmination of the planning process.

Each of the TSS strategies that are included in this chapter are meant to address specific compatibility issues that are described in greater detail in Chapter 5 of the TSS Background Report. The issues are included before each set of strategies as a point of reference to what the strategies are addressing. They correspond to the issue numbers in the Chapter 5 of the Background Report for easy reference and can be used to read additional information on the specifics of the issues themselves.

The key to the implementation of strategies is the establishment of the TSS Coordination Committee (see Strategy COM-2A) to oversee the execution of the TSS. Through this committee, local jurisdictions, Travis AFB, and other interested parties can continue their collaboration to establish procedures, recommend or refine specific actions, and make adjustments to strategies over time to ensure the TSS continues to resolve key compatibility issues into the future through realistic strategies and implementation.

## Implementation Plan Guidelines

The key to a successful plan is balancing the different needs of all involved stakeholders. To produce a balanced plan, several guidelines were used as the basis for strategy development. These guidelines included:

- Recommended strategies must not result in a taking of property value as defined by state law.
- In some cases, the recommended strategies can only be implemented with new enabling legislation.
- To ensure focused effects and to minimize unintended broader consequences, many of the strategies are only recommended within the certain geographic area for which the issue they address occurs (e.g. within the noise contours), instead of recommended for the whole TSS Study Area.
- Similar to other planning processes that include numerous stakeholders, the challenge is to create a solution or strategy that meets the needs of all parties. In lieu of eliminating strategies that do not have 100 percent buy-in from all stakeholders, it was determined that the solution / strategy may result in the creation of multiple strategies that address the same issue but tailored to individual circumstances.
- Since this TSS is meant to be a “living document”, and state and federal regulations are subject to change, before implementing one of the suggested strategies included in the Implementation Plan, the implementing jurisdiction or party should ensure there is no conflict between the strategy and any existing state or federal law.

## Military Compatibility Areas

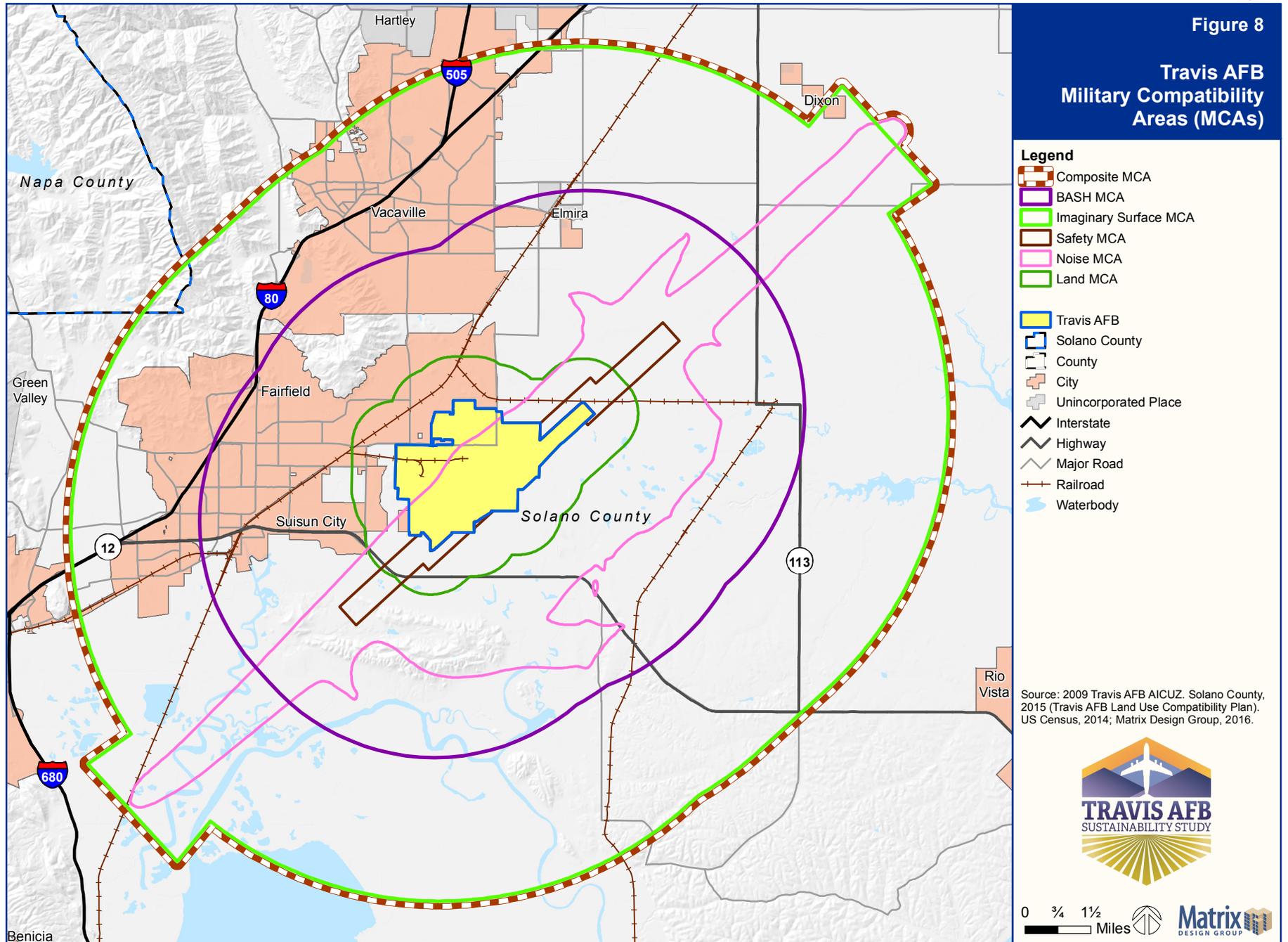
In compatibility planning, the generic term “Military Compatibility Area” (MCA) is used to formally designate a geographic area where military operations may impact local communities, and conversely, where local activities may affect the military’s ability to carry out its mission(s). An MCA is designated to accomplish the following:

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

The MCAs are used to define the geographic areas where the TSS strategies are to be applied. This technique ensures the strategies are applied to the appropriate areas, and that locations deemed not subject to a specific compatibility issue are not adversely impacted by regulations inappropriate for their location or circumstance.

These MCAs are recommended under Strategy COM-3A.

The proposed Travis AFB Composite Military Compatibility Area is an area that incorporates all the MCAs. Implementation of these overlays requires jurisdictions to amend their zoning ordinances. The Composite MCA is illustrated on Figure 8 and the individual MCAs are shown on Figures 9 through 13.



### **Safety Military Compatibility Area (Figure 9)**

The proposed Safety MCA would regulate compatible land use types and densities / intensities within the Clear Zones (CZs) and Accident Potential Zones (APZs) I and II of Travis AFB's runway. Each of these would be a subzone of the Safety MCA. The current location of each safety subzone is based on the airfield layout and air operations identified in Travis AFB's AICUZ Report. The boundaries of each subzone may need to be amended when the AICUZ study is updated.

A Safety MCA is needed to prevent the development of incompatible land uses in areas with the greatest potential for an accident. These safety zones were identified as a result of the Air Force's guidance that defines CZs and APZs as the areas where an aircraft accident is most likely to occur (in the unlikely event that one was to occur). While the potential for an aircraft mishap is lower in the APZs in comparison to the CZs, the APZs are still one of the most likely places for an aircraft mishap to occur. The APZs follow departure, arrival, and pattern flight tracks and are based upon analysis of historical data.

Within the CZ, most types of land use are incompatible with aircraft operations. It is recommended that no development be located within CZs. Compatibility guidelines preclude land uses that concentrate large numbers of people (such as residences, apartments, hospitals, churches, and schools) from being constructed within the APZs. While the likelihood of an accident is remote, the Air Force recommends low density land uses within the APZs to ensure the maximum protection of public health and property.

Low density single family residential uses (1 to 2 units per acre) can be compatible when located within APZ II. Other generally compatible uses include agriculture, limited intensity office / retail, and light industrial.

### **Noise Military Compatibility Area (Figure 10)**

Noise is often a concern to the public surrounding military installations with flying missions. The Noise MCA includes all land located off-installation within Travis AFB noise contours greater than 65 decibels (dB) Community Noise Equivalent Level (CNEL) associated with military aircraft activities. Residential developments and other noise-sensitive land uses within this MCA may be subject to sound attenuation measures to reduce interior noise impacts and achieve a maximum interior noise level of CNEL 45 dB.

Without a requirement for sound attenuation via building code requirements, certain uses such as residential, and those that congregate large groups, including schools, healthcare facilities, and churches, are not compatible within areas that experience noise levels of CNEL 65 dB or greater. Uses that are compatible within airport noise contours are office / retail and manufacturing / industrial when interior noise levels are less than CNEL 70 dB. Local building codes can be used to ensure that noise-attenuation measures are incorporated in all new development within the Noise MCA.

### **BASH Military Compatibility Area (Figure 11)**

The proposed Bird / Wildlife Aircraft Strike Hazard (BASH) MCA extends from the airport operational area at Travis AFB for a radius of five miles. This MCA is meant to include areas near the airfield with the highest safety concerns if concentrations of birds or bird-attractant uses were located there. Bird strikes with aircraft can have serious safety concerns, including the potential for loss of life or aircraft. Even minor bird strikes can cause costly repairs to aircraft and interfere with training missions. The five-mile distance associated with the BASH MCA is a Federal Aviation Administration (FAA) recommended standard for managing bird attractants around runways.

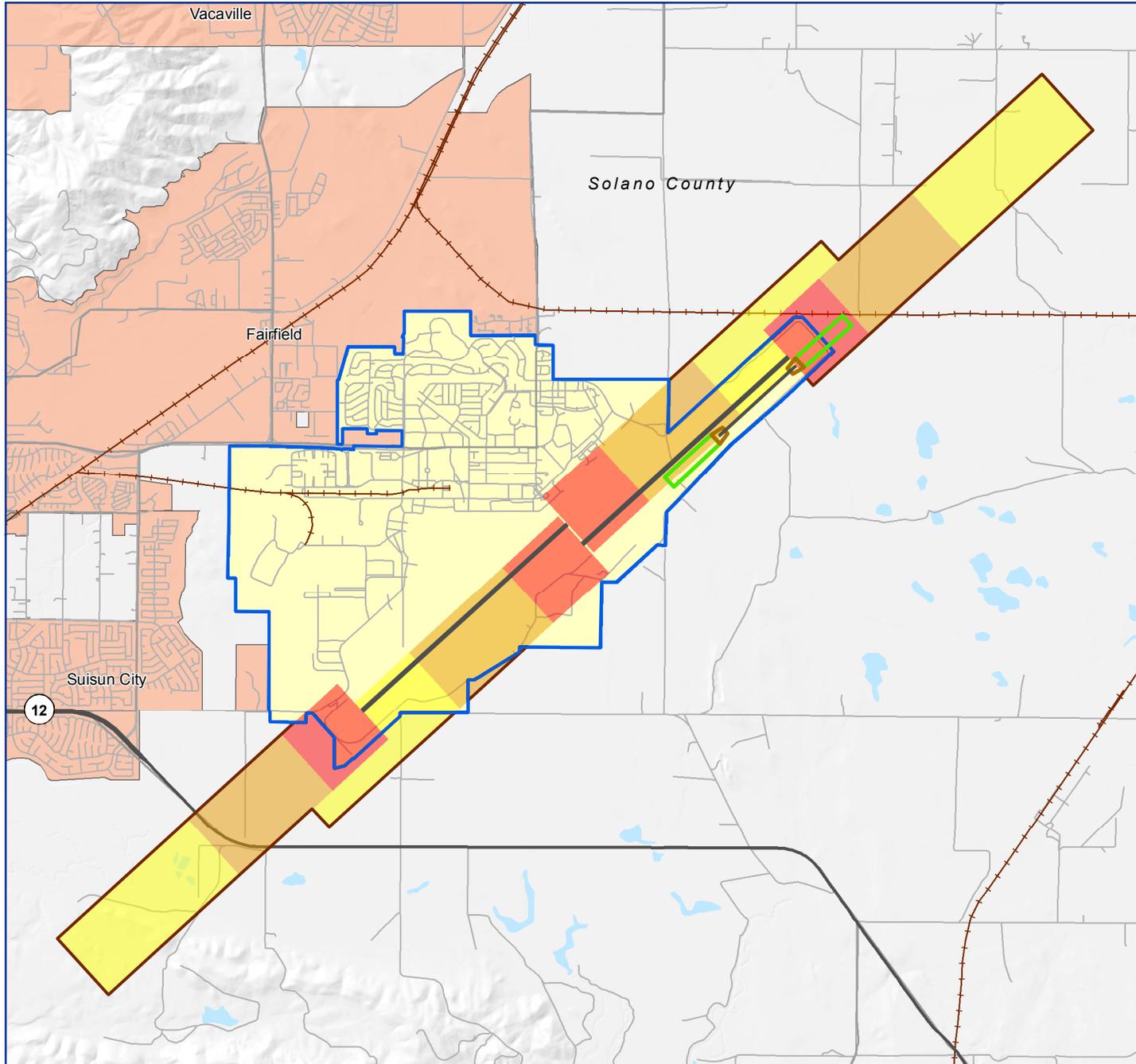
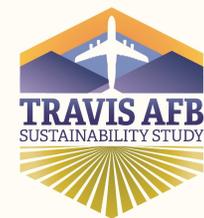


Figure 9

**Travis AFB Safety  
Military Compatibility  
Area (MCA)**

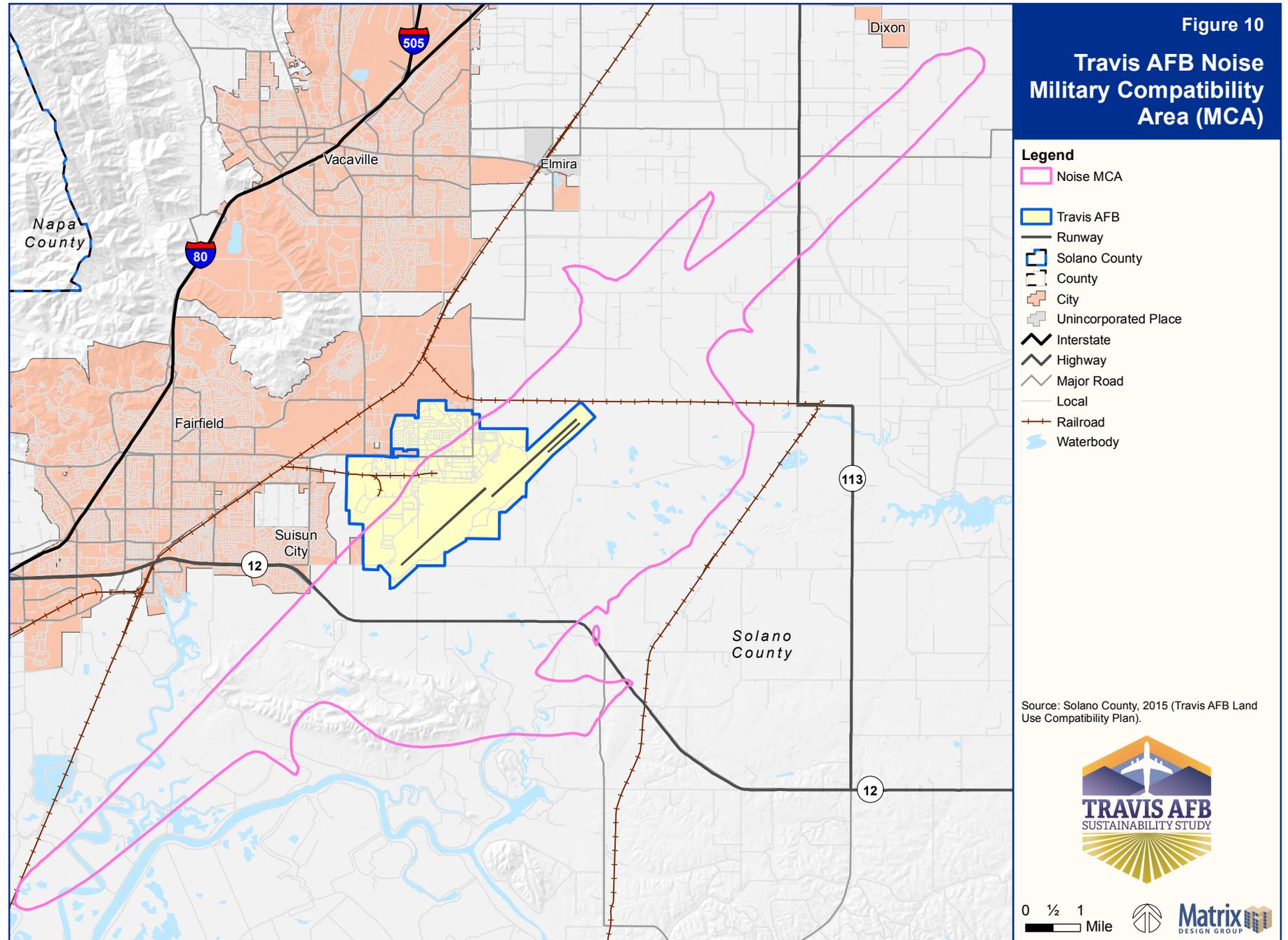
- Legend**
- Safety MCA
  - Runway Accident Potential Zones**
  - APZ I
  - APZ II
  - Clear Zone
  - Assault Strip Accident Potential Zones**
  - APZ-LZ
  - Clear Zone
  - Travis AFB
  - Runway
  - Solano County
  - County
  - City
  - Interstate
  - Highway
  - Major Road
  - Local
  - Railroad
  - Waterbody

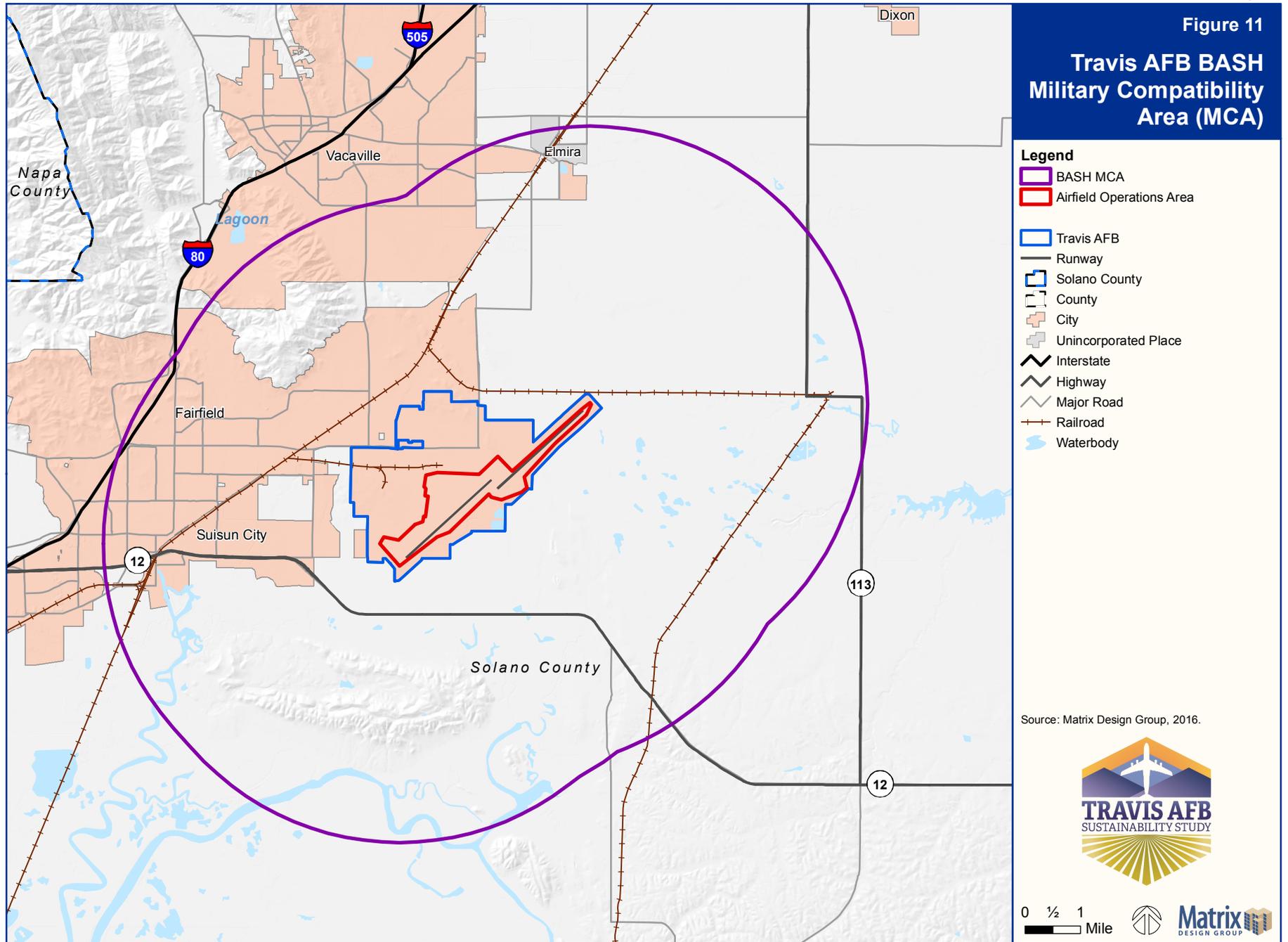
Source: 2009 Travis AFB AICUZ.



0 1/4 1/2  
Mile







## **Imaginary Surfaces Military Compatibility Area (Figure 12)**

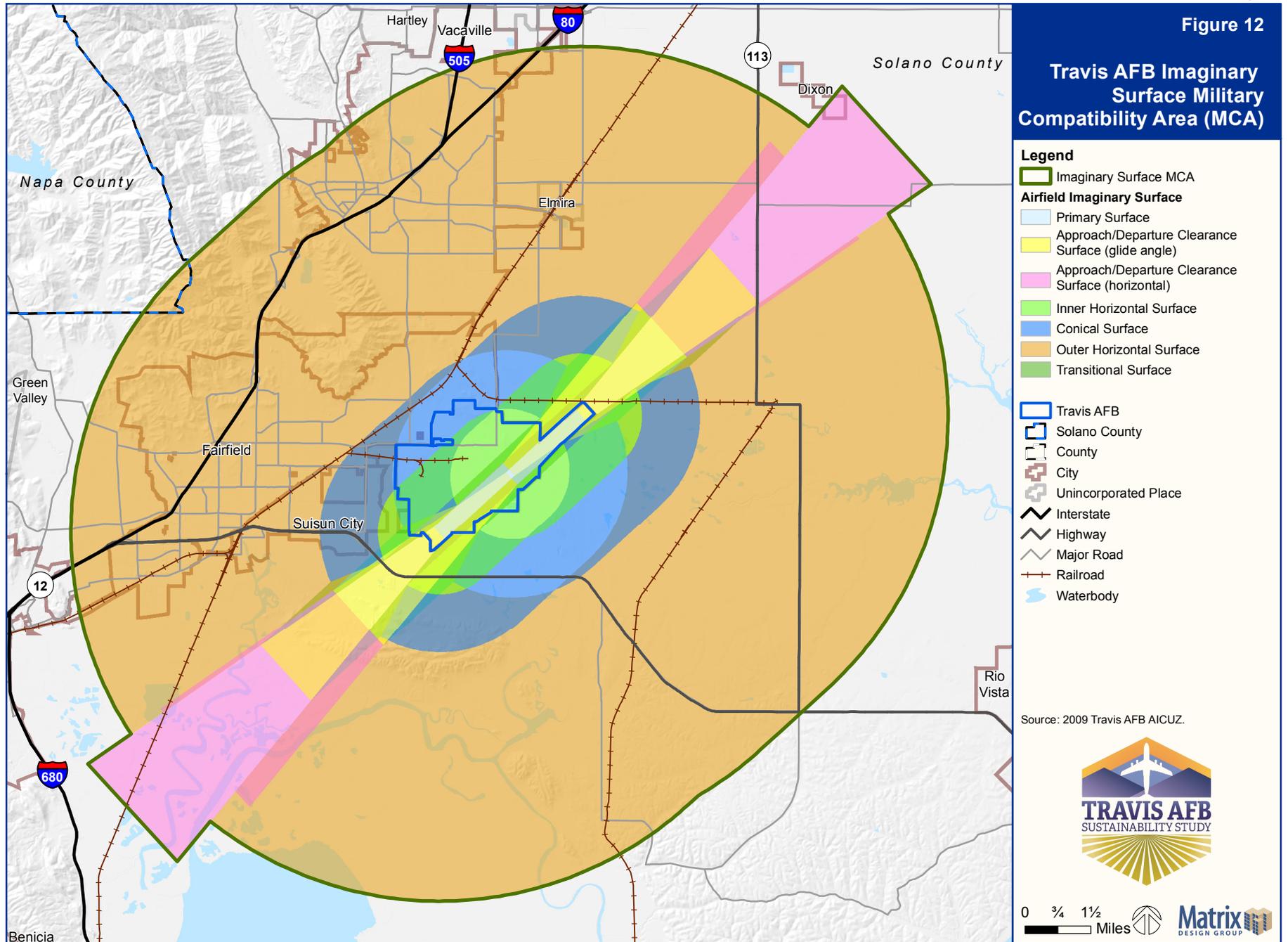
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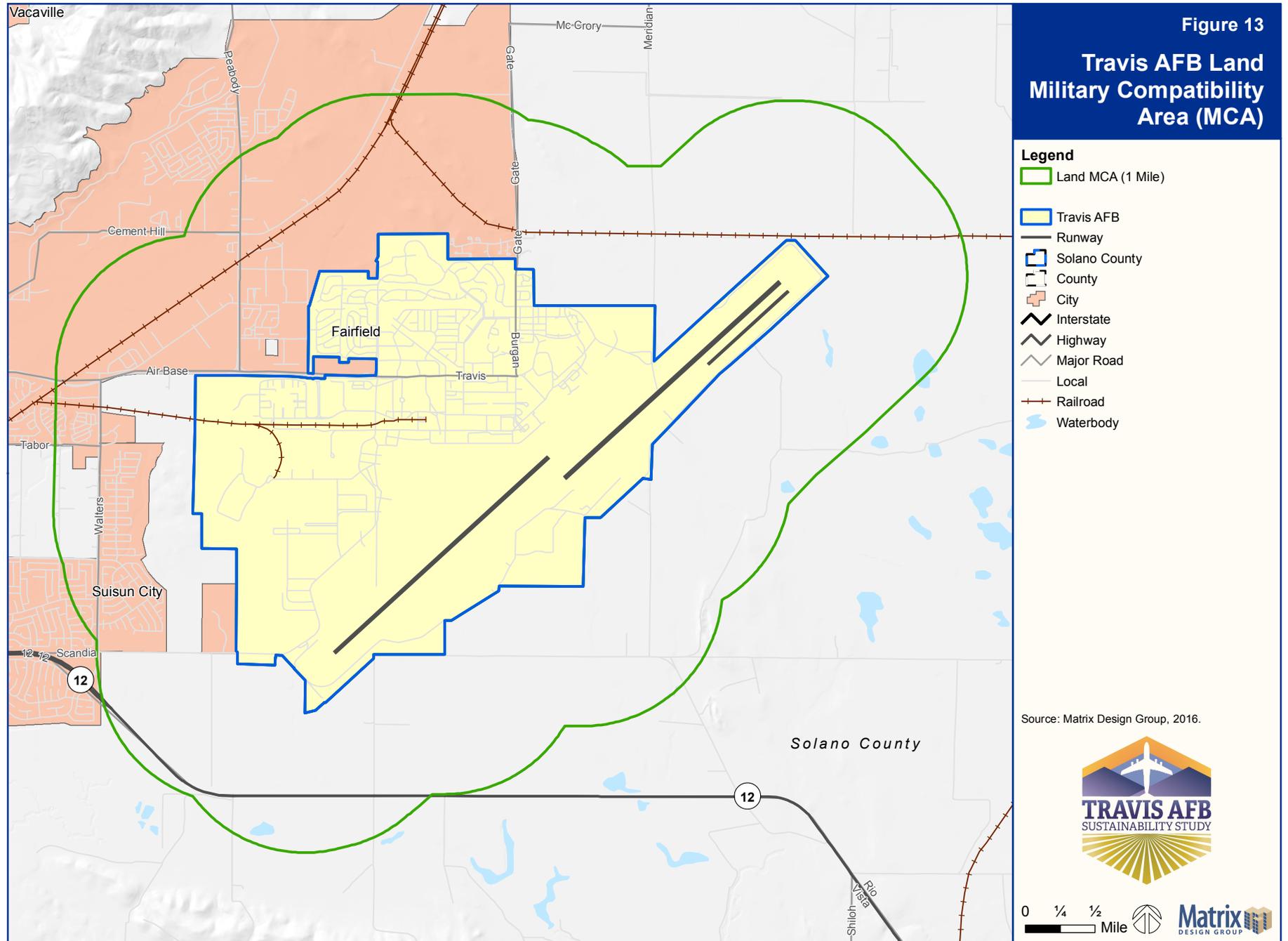
The purpose of the Imaginary Surfaces MCA is to regulate the height of all structures and buildings within the area defined by FAA guidance and Air Force AICUZ instructions known as imaginary surfaces. The imaginary surfaces are a 3-D geographic area comprising approach and departure airspace corridors and safety buffers. Vertical obstruction heights are a major concern for flight operations and training due to the potential for a structure to extend into navigable airspace, which could impede safe flight operations and put both pilots and citizens on the ground at risk of an aircraft accident. Vertical obstructions that can affect flight safety include, but are not limited to, cell towers, power lines, wind turbines, buildings, and trees. The imaginary surfaces are explained in more detail in Chapter 3, Travis AFB Operations in the Background Report.

## **Land Military Compatibility Area (Figure 13)**

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The Land MCA is designed to capture lands adjacent to Travis AFB and is more for awareness purposes to keep landowners informed of the operations that may impact their quality of life. The Land MCA includes all land within one mile of the boundary of Travis AFB.





## Purpose of the Implementation Plan

The strategies are designed to address the issues identified during preparation of the TSS. The purpose of each strategy is to:

- eliminate or reduce the adversity of existing compatibility issues where possible;
- avoid future actions, operations, or approvals that would cause a compatibility issue; and
- provide for enhanced and on-going communications and collaboration.

To make the strategies easier to use, they are presented in a table format (Table 2) that provides the strategy and information on when and how that strategy will be implemented. The strategies are arranged in Table 2 to correspond with their compatibility factor. The issue within each factor is presented first to provide a linkage between the strategy and the condition it is intended to resolve or minimize. Figure 14 highlights the format and content of the strategy table. The following paragraphs provide an overview of how to read the information presented for each strategy in Table 2.

**Issue or Strategy #.** The issue # and strategy # are unique alpha-numeric numbers that provide a reference for each specific issue and strategy. The issue numbers correspond to the issues identified in Chapter 5 Compatibility Assessment of the Background Report. An additional alphabetical identifier is added to the issue number for each new strategy. A strategy’s reference number is composed of the compatibility issue number and this alphabetical ID (e.g., for Issue COM-1, the strategies would be identified as COM-1A, COM-1B, etc.).

**Military Compatibility Area (MCA).** This column indicates the applicable MCA in which the strategy should be applied, or if the strategy relates to the whole TSS Study Area. The MCA geographies for the Travis AFB strategies are defined in Strategy COM-3A. Some of the strategies are designated as

“General”, meaning that they do not have a specific geography associated with them.

**Strategy.** In bold type is a title that describes the strategy. This is followed by the complete strategy statement that describes the recommended action.

**Timeframe.** This column indicates the projected timeframe of each strategy. The timeframes describe the year in which a strategy will be initiated or if it is an on-going action.

Short-Term	Strategy proposed for initiation in 2018 / 2019 (within a year of TSS completion)
Mid-Term	Strategy proposed to be initiated in 2020 / 2021 (within 1-2 years of TSS completion)
Long-Term	Strategy proposed to be initiated in 2022 / 2026+ (3 to 5 years or more from TSS completion)

**Responsible Party.** At the right end of Table 2 are a series of columns, one for each jurisdiction, military entity, agency, and organization with responsibility for implementing the TSS strategies. If an entity has responsibility relative to implementing a strategy, a mark is shown under their name. This mark is one of two symbols that represent their role. A solid square (■) designates that the entity identified is responsible for implementing the strategy. A hollow square (□) designates that the entity plays a key supporting role, but is not directly responsible for implementation. The responsible parties are identified by their name or assigned acronym in the heading at the top of each page. There is also an “Other” column in the table. This column is for parties that are not primary JLUS Partners, but may play a role in the implementation of the respective strategy. Parties identified as responsible or supporting in this column are identified by name at the bottom of the strategy box.

Figure 14. How to Read TSS Strategies

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
COM-2		<p><b>Informal communication between Travis AFB and surrounding jurisdictions</b></p> <p>While there is generally good communication between Travis AFB and the surrounding communities, it is often done informally on a person-to-person basis and does not have a standardized procedure or established points of contact.</p>									
COM-2A	General	<p><b>Consider creation of a TSS Coordination Committee</b></p> <p>Following the end of the TSS, the local communities should consider establishment of a TSS Coordination Committee to maintain efficient and effective coordination among the TSS Partners, oversee the implementation of TSS recommendations, and enhance long-term coordination on military compatibility issues. This could be integrated as part of the Travis AFB Community Partnership Leadership Program, into another existing advisory committee appropriate to the area and issues addressed, or the local Planning Directors group. The latter is most likely and could report to the City Managers Group and the City / County Coordinating Council as appropriate. The TSS Coordination Committee should meet on a regular basis as agreed upon by the Committee.</p> <p>To continue the momentum produced through the TSS process, it is recommended that Solano County be the lead agency on developing and maintaining the TSS Coordination Committee.</p> <p><i>Other Primary Partners: Local, state, and federal agencies / groups as appropriate, Travis AFB Community Partnership Leadership Program participants</i></p>	Short-term	■	■	■	■	■	■	■	■

**Issue or Strategy ID Number:** Alpha-numeric identifier used for reference.

**MCA:** The MCA in which each strategy applies.

**Strategy:** Description of the strategy.

**Timeframe:** Year in which each strategy should be initiated.

- Short-term (2018 / 2019)
- Mid-term (2020 / 2021)
- Long-term (2022 / 2026+)
- On-going

**Responsible Party:** The primary and partner responsible agencies. For example, the ■ denotes a primary agency who will take the lead in implementation. The □ denotes a partner agency who will assist the primary agency in implementation

Entities included as "Other" are identified at the bottom of the strategy box.

**Table 2. Issues / Strategies by Compatibility Factor (Alphabetized by Factor)**

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
<b>ANTI-TERRORISM / FORCE PROTECTION (AT)</b>											
<b>AT-1</b>	<b>Development near Travis AFB Main Gate</b> Redevelopment in the commercial center on Parker Ave could become a security concern if additional floors are added that could provide a visual of the gate and into the installation.										
<b>AT-1A</b>	<b>Land</b>	<b>Identify locations of critical parcels</b> As warranted, Travis AFB should develop a list of parcels that, if developed above a specified height, could cause line-of-sight views into sensitive areas of the Base.	Long-term/ On-going			☐	☐			■	
<b>AT-1B</b>	<b>Land</b>	<b>Height limitations</b> For parcels identified through Strategy AT-1A process, Travis AFB should work with appropriate jurisdictions to limit heights in these areas through zoning overlays or similar techniques.	On-going	■		■	■			■	
<b>AT-1C</b>	<b>Land</b>	<b>Strategically located screening to protect on-installation assets</b> Travis AFB should prepare a strategic viewshed analysis to prioritize critical view corridors and sensitive facilities on-Base. Once these are identified, the Base should explore appropriate natural and man-made screening systems to protect sensitive activities and systems within Travis AFB. Based on cost, appropriate DOD funding sources should be identified to implement screening.	Long-term							■	
<b>AT-1D</b>	<b>General</b>	<b>Enhanced AT / FP at Main Gate</b> Travis AFB should work with the City of Fairfield to discuss long-term redevelopment of areas along Parker Road to enhance Base security.	Long-term/ On-going			■				■	

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
		<b>Security concerns at hospital</b> If a medical emergency happens in the surrounding area and Travis’s hospital is the nearest to it, patients are taken there with or without background check / security clearance.									
AT-2A	General	<b>Adjust Travis AFB fence</b> Travis AFB should consider conducting a feasibility study to evaluate adding a fenced separation between the David Grant Medical Center and the rest of the Base to reduce security concerns of people entering the hospital that should not have access to the Base itself.	Long-term							■	
<b>BIOLOGICAL RESOURCES (BIO)</b>											
		<b>Location of federally listed species Travis AFB, including critical habitat</b> There are several federally listed threatened and endangered species located on Travis AFB that impact Base operations.									
BIO-1A	General	<b>Develop Conservation of Sensitive Species Management Plan</b> The California Department of Fish and Wildlife (CDFW), US Fish and Wildlife Service (USFWS), and Travis AFB should collaborate to fund and develop a management plan for the conservation of sensitive species and habitats that are found on Travis AFB. Any agreed upon strategies should be incorporated into an update of the installation’s Integrated Natural Resources Management Plan (INRMP). <i>Other Primary Partners: USFWS, CDFW</i>	On-going							■	■

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
BIO-1B	General	<p><b>Protect environmentally-sensitive land with the Readiness and Environmental Protection Integration (REPI) program</b></p> <p>The TSS Partners and regional conservation groups should work with Travis AFB and willing landowners to apply for REPI funding to safeguard mission capability and protect critical habitat within areas adjacent to Travis AFB, particularly in areas within accident potential zones.</p> <p><i>Other Primary Partners: Willing landowners, conservation groups</i></p>	On-going	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BIO-1C	General	<p><b>Coordinate the protection and conservation of sensitive species</b></p> <p>Travis AFB should work with USFWS and CDFW regarding the management of resources and areas suitable for sensitive species to ensure that military training operations are unimpeded and safety is maintained. Attention should be given to habitat issues in the region to ensure that Travis AFB is not unduly burdened with habitat protection due to habitat destruction elsewhere in the region.</p> <p><i>Other Primary Partners: USFWS, CDFW</i></p>	On-going							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BIO-1D	General	<p><b>Off-Base mitigation</b></p> <p>Travis AFB should look into the possibility of obtaining off-Base mitigation for preserving habitat for listed species so that the habitat on-Base can be used for operational needs. This could be partnered with regional conservation groups.</p> <p><i>Other Partners: Conservation groups</i></p>	On-going							<input checked="" type="checkbox"/>	<input type="checkbox"/>

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
BIO-1E	General	<b>Regulatory relief to allow mission flexibility</b> Study the feasibility of legislation that would provide a limited exemption from NEPA, CEQA and federal and state endangered species requirements for strategic installations, like Travis AFB, that are involved in critical logistical support to troops serving overseas.									
BIO-2	<b>Bird / wildlife aircraft strike hazards</b> Travis is located in the Pacific Flyway and has many water areas around it, which are natural bird attractants, causing potential for bird / wildlife aircraft strike hazards. Siting of habitat areas near Travis AFB flight paths and operation areas could attract additional birds to the area and increase bird-aircraft strike hazards.										
BIO-2A	BASH	<b>Develop and distribute BASH educational materials</b> Travis AFB should provide educational information to local jurisdictions, agencies and landowners in the region relative to reducing the potential for bird and wildlife attractants that may impede safe aircraft operations.	Short-term							■	
BIO-2B	BASH	<b>Control bird and wildlife attractants near the Base</b> Travis AFB should continue to work directly with local jurisdictions and other appropriate agencies on control of bird and wildlife attractants near the Base and within flight paths.  <i>Other partners: CDFW</i>	On-going	□		□	□	□		■	

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
BIO-2C	BASH	<p><b>BASH consideration in jurisdiction or agency projects</b></p> <p>All local jurisdiction / agency projects or plans affecting land near Travis AFB should minimize features that attract birds into flight operational areas or locate such features in areas that would have less impact. Coordination with Travis AFB representatives on the review and mitigation of features that may directly or indirectly attractant birds should be undertaken.</p>	On-going	■		■	■	■		□	
BIO-2D	BASH	<p><b>Modify zoning regulations for BASH</b></p> <p>The TSS Partner jurisdictions should research and consider modifying local CEQA implementation guidance to address bird attractant potential as part of project design and conditions of approval.</p>	Mid-term	■		■	■	■			
BIO-2E	BASH	<p><b>Improved coordination to limit BASH risk</b></p> <p>Travis AFB should improve coordination with California Natural Resources Agency to limit restoration projects within five miles of Travis AFB that could increase BASH risk.</p> <p><i>Other Partner: California Natural Resources Agency</i></p>	Short-term							■	■
BIO-2F	BASH	<p><b>Update Local General Plans</b></p> <p>The local communities should consider updating their general plans and CEQA implementation guidance as part of future updates to incorporate military compatibility policies and encourage design methods that do not attract birds into flight operation areas.</p>	Long-term				■	■			

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
BIO-2G	BASH	<p><b>Identify water body design concerns for BASH</b></p> <p>Travis AFB or TSS Partner jurisdictions should continue to work with resource agencies to develop designs for stormwater facilities, wetland habitat reconstruction, species habitat protection, or similar items that could attract birds to minimize BASH concerns through design.</p>	Mid-term	■		■	■	■		□	
BIO-2H	BASH	<p><b>Coordinate water body installation with Travis AFB</b></p> <p>Based on the results of Strategy BIO-2G, TSS Partner jurisdictions should include procedures and appropriate design regulations for proposed water bodies, including consultation protocol with Travis AFB.</p>	On-going	■		■	■	■		□	
BIO-2I	BASH	<p><b>Determination of BASH-relevant species</b></p> <p>Travis AFB should continue to coordinate with other DOD installations and the USFWS to identify certain species that pose greatest BASH risk in order to know how to mitigate their presence in the region.</p> <p><i>Other Partner: USFWS</i></p>	Mid-term							■	■

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
<b>COMMUNICATION / COORDINATION (COM)</b>											
<b>COM-1</b>	<p><b>Cannot hear radio communication from Nut Tree Airport</b>                      Air Traffic Control Tower at Travis AFB cannot receive radio communications from pilots at Nut Tree Airport because of a hill between the two facilities that interferes with the communication frequency.</p>										
<b>COM-1A</b>	<b>General</b>	<p><b>Grant funding for equipment upgrades</b>                      Solano County ALUC should apply for FAA grant funding to upgrade equipment at Nut Tree Airport and / or install a repeater site in the area to allow line-of-site communication access to Travis AFB.  <i>Other Partner: Nut Tree Airport</i></p>	Short-term	■						□	□
<b>COM-2</b>	<p><b>Informal communication between Travis AFB and surrounding jurisdictions</b>                      While there is generally good communication between Travis AFB and the surrounding communities, it is often done informally on a person-to-person basis and does not have a standardized procedure or established points of contact.</p>										
<b>COM-2A</b>	<b>General</b>	<p><b>Consider creation of a TSS Coordination Committee</b>                      Following the end of the TSS, the local communities should consider establishment of a TSS Coordination Committee to maintain efficient and effective coordination among the TSS Partners, oversee the implementation of TSS recommendations, and enhance long-term coordination on military compatibility issues. This could be integrated as part of the Travis AFB Community Partnership Leadership Program, into another existing advisory committee appropriate to the area and issues addressed, or the local Planning Directors group. The latter is most likely and could report to the City Managers Group and</p>	Short-term	■	■	■	■	■	■	■	■

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
COM-2A (cont'd)		<p>the City / County Coordinating Council as appropriate. The TSS Coordination Committee should meet on a regular basis as agreed upon by the Committee. To continue the momentum produced through the TSS process, it is recommended that Solano County be the lead agency on developing and maintaining the TSS Coordination Committee.</p> <p><i>Other Primary Partners: Local, state, and federal agencies / groups as appropriate, Travis AFB Community Partnership Leadership Program participants</i></p>									
COM-2B	General	<p><b>Consider development of a Memorandum of Understanding (MOU)</b></p> <p>The TSS Partners should collaborate through the TSS Coordination Committee (see Strategy COM-2A) to facilitate the development of a formal MOU that delineates the roles and responsibilities for each agency in the TSS Study Area. This MOU should contain information such as:</p> <ul style="list-style-type: none"> <li>• Point of contact and contact information for each agency,</li> <li>• Role in addressing compatibility issues with Travis AFB,</li> <li>• Responsibility in addressing compatibility issues,</li> <li>• Community and military response times, and</li> <li>• Triggers for coordination and communication, e.g., infrastructure planning, water resources planning, economic development, etc.</li> </ul> <p><i>Other Primary Partner: TSS Coordination Committee</i></p>	Short-term/ On-going	■	■	■	■	■	■	■	■

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
COM-2C	General	<p><b>Maintain a GIS data clearinghouse</b></p> <p>The TSS Partner jurisdictions, Travis AFB, and relevant federal and state land management agencies should work collaboratively to develop a GIS clearinghouse to share non-sensitive GIS data, e.g., military footprints, existing land use, zoning, and other pertinent GIS data, to promote enhanced, long-range, and coordinated compatibility planning. In addition, a protocol for accessing and updating the information should be developed to ensure accuracy and appropriate security measures are established.</p> <p><i>Other Primary Partners: Land and resource management agencies</i></p>	Mid-term	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
COM-2D	General	<p><b>Develop a resource management reference guide</b></p> <p>The TSS partners should develop a brief reference guide providing information about the various agencies in the TSS Study Area with their respective responsibilities. This guide should contain at a minimum:</p> <ul style="list-style-type: none"> <li>• Map(s) identifying the important resources in the area, and</li> <li>• Contact information for the agency representative that would help in cases of community-military compatibility.</li> </ul> <p><i>Other Primary Partners: Land and resource management agencies</i></p>	Mid-term/Long-term	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
COM-2E	General	<p><b>Enhance the integration of Travis AFB into project review process</b></p> <p>Each of the TSS partner communities and Travis AFB should review current practices and if necessary formalize a process that provides copies of certain types of development proposals, rezoning, and other land use or regulation changes for lands located within the Military Compatibility Areas (MCAs) (see Strategy COM-3A) to Travis AFB for review and comment. Such review periods shall conform to existing community review periods for providing comment. Travis AFB comments would be focused on compatibility impacts and issues relative to Travis AFB. This supports a proactive approach for identifying potential conflicts early in the development process.</p> <p>The process of formalizing Travis AFB review and comment should include:</p> <ul style="list-style-type: none"> <li>• Definition of project types that require review</li> <li>• Definition of project types that require military attendance at ALUC / pre-application meetings</li> <li>• Identification of the points of contact for all coordination</li> <li>• Establishing a formal procedure for requesting and receiving comments</li> <li>• Establishing a standard timeline for responses, keeping in mind mandated review time periods as specified by state law and local procedures</li> <li>• Providing notice to the military on all public hearings regarding projects identified for coordination</li> </ul> <p>Procedures should be reviewed annually and updated as appropriate by the TSS Coordination Committee (see Strategy COM-2A).</p>	On-Going	■	■	■	■	■	■	■	

Issue / Strategy ID	Military Compatibility Area (MCA)	Issue / Strategy	Timeframe	Solano County	Solano County ALUC	City of Fairfield	City of Suisun City	City of Vacaville	City of Vallejo	Travis AFB	Other
COM-2F	General	<p><b>Review of military planning documents</b></p> <p>Travis AFB should provide public versions of key planning documents for review and comment prior to finalization. Key planning documents could include the following (list to be finalized by the TSS Coordination Committee [see Strategy COM-2A] and Travis AFB):</p> <ul style="list-style-type: none"> <li>• AICUZ and other noise studies</li> <li>• Other documents as appropriate, and when agreed to be used for official use only</li> </ul>	Short-term/ On-going	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
COM-2G	General	<p><b>Establish internal information liaisons</b></p> <p>Each TSS jurisdiction and Travis AFB should, if they do not already, identify an internal liaison within their organization that is responsible for relaying information from outside parties to their organization to ensure that all entities are aware of pertinent information and information does not stop at one person.</p>	On-going	<input checked="" type="checkbox"/>							
COM-2H	General	<p><b>Public-Public and Public-Private partnerships</b></p> <p>Travis AFB should work with the TSS Partner jurisdictions to utilize and enhance Public-Public and Public-Private partnership mechanisms. Development of an Enhanced Use Lease program at Travis AFB would be an example opportunity for this effort.</p>	Short-term/ On-going	<input checked="" type="checkbox"/>							

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COM-2I	General	<p><b>Continued coordination between Travis AFB and local planning departments</b></p> <p>Invite a representative from Travis AFB to serve as an ex-officio member on each of the TSS jurisdiction development review committees to allow for Travis AFB to provide comments on proposed developments that may impact their mission. Travis AFB comments would be focused on compatibility impacts and issues.</p>	Short-term	■		■	■	■	■	■	
COM-2J	General	<p><b>Consider including a Travis AFB staff representative on Solano City County Coordinating Council</b></p> <p>Have a discussion among the Council on the potential inclusion of a representative from Travis AFB to serve as an ex-officio member on the Solano City County Coordinating Council to allow for Travis AFB to provide comments on topics that may impact their mission or provide information that may assist other members in undertaking projects. Travis AFB shall only provide comments or information and will not vote on any final decisions. This position should be formalized through a resolution or an MOU.</p> <p><i>Other Primary Partner: Solano City County Coordinating Council</i></p>	Short-term	■	■	■	■	■	■	■	■
COM-2K	General	<p><b>Establish communication procedures for mission activities and changes</b></p> <p>Travis AFB should work with the TSS Partner jurisdictions and relevant agencies to establish procedures for coordination between the Base and local jurisdictions / agencies / the public relative to Base operations and changes to operations and activities. This will include:</p> <ul style="list-style-type: none"> <li>• Define operations and changes in operations that warrant public knowledge,</li> <li>• Identify points of contact for all coordination,</li> </ul>	Short-term	□		□	□	□	□	■	

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COM-2K (cont'd)		<ul style="list-style-type: none"> <li>Establish a formal procedure for responding to comments or questions from jurisdictions and the public,</li> <li>Establish a standard timeline for responses to address concerns, and</li> <li>Provide notice to Travis AFB on all public activities that could impact mission readiness.</li> </ul> <p>Consultation is expected to occur on activities in the defined MCAs (see Strategy COM-3A); the installation should establish contacts and procedures for receiving notices and review opportunities on significant regional projects outside of the MCAs. Procedures should be reviewed annually and updated as appropriate by the TSS Coordination Committee (see Strategy COM-2A).</p>									
COM-2L	General	<p><b>Disseminate information through media</b></p> <p>Information determined appropriate through Strategy COM-2K should be made available on Travis AFB’s website and through other jurisdictions’ public service announcement and media outlets.</p>	On-going	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COM-2M	General	<p><b>Maintain and continue to utilize social media</b></p> <p>Travis AFB should regularly maintain the Travis AFB Facebook page and other social media pages to disseminate information about Base activities and post contact information for visitors or the public to contact the Base if they have a question or concern.</p>	On-going							<input checked="" type="checkbox"/>	

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COM-2N	General	<p><b>Open house / mission briefings</b></p> <p>Travis AFB should conduct open houses / mission briefings to various interest groups and jurisdictions in the area to educate the public and businesses about the primary mission of the Base including the military footprints over land outside the Base, and the need to maintain compatibility within them, to support the Base’s missions.</p>	On-going							■	
COM-2O	General	<p><b>Informational brochure</b></p> <p>Travis AFB should develop and distribute an informational brochure describing the Air Force mission and the land needed to effectively conduct the mobilization mission. This brochure should be distributed to all the TSS Partner jurisdictions’ public offices and be made available for download on the Travis AFB website.</p>	On-going							■	
COM-2P	General	<p><b>Good neighbor program</b></p> <p>Travis AFB should conduct, on a bi-annual basis, a Good Neighbor Program where they send out letters to all adjacent property owners inviting them to a Travis AFB Neighbor Town Hall meeting to provide a platform for a two-way communication whereby the Air Force informs the neighbors of any upcoming mission changes or operations and maintenance events that may have an impact on the neighbors and whereby the adjacent property owners can provide the Air Force with any concerns or questions they may have.</p>	Short-term/ On-going							■	
COM-2Q	General	<p><b>Links on websites</b></p> <p>Each of the TSS Partner jurisdictions should include a link to Travis AFB’s website on their respective websites.</p>	Short-term	■	■	■	■	■	■	□	■

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COM-2R	General	<p><b>Disseminate information on Travis AFB economic impact</b>                      Travis AFB will provide updates on its economic impact on the region, as information becomes available, to keep businesses and residents informed.</p>	On-going							■	
COM-3	<p><b>Technical guidance on compatibility</b>                      Local jurisdictions need clearer input from the Air Force regarding planning and development decisions and whether they are compatible with Travis AFB and its missions.</p>										
COM-3A	Composite MCA	<p><b>Consider establishment of Military Compatibility Areas or equivalent mechanism</b>                      Each jurisdiction should consider establishment of a Composite Military Compatibility Area containing the individual Military Compatibility Areas (MCAs) that reflect the types and intensity of compatibility issues. The Composite MCA is the collective geographic area of all the MCAs combined. The MCAs should be used by local jurisdictions to identify areas where specific compatibility issues are more likely to occur. Implementation of the Composite MCA and associated strategies for these zones will:</p> <ul style="list-style-type: none"> <li>• Create a broader framework for making sound planning decisions around military airfields</li> <li>• More accurately identify areas that can affect or be affected by military missions</li> <li>• Protect the public’s health, safety, and welfare</li> <li>• Protect the military missions</li> <li>• Create a compatible mix of land uses</li> </ul>	Short-term	■		■	■	■		□	

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COM-3A (cont'd)		<ul style="list-style-type: none"> <li>Promote an orderly transition and rational organization of land use around military airfields</li> </ul> <p>The MCAs are defined as follows:</p> <ul style="list-style-type: none"> <li>MCA-Safety – Includes the Clear Zone (CZ) and Accident Potential Zones (APZs) I and II</li> <li>MCA-Noise – Includes areas within the 65-dB contour for aircraft noise, as identified by Travis AFB LUCP</li> <li>MCA-BASH – Includes an area within five miles of the airport operational area at Travis AFB, an area where the majority of bird strikes are statistically likely to happen</li> <li>MCA-Imaginary Surfaces – Includes land under the imaginary surfaces for the runway at Travis AFB</li> <li>MCA-Land – Composed of a one-mile buffer around the boundary of Travis AFB</li> <li>Composite MCA – Made up of the outermost boundary of all the MCAs.</li> <li>General – This has no geographic area associated with it, but is included for general strategies</li> </ul> <p>Where appropriate, the jurisdictions should incorporate the Composite MCA and individual MCA boundaries on their zoning map and future land use maps and include the zones on their websites for easy access by the public. As necessary, the jurisdictions should seek input from the Travis AFB Installation Encroachment Management Team to define the Travis AFB mission footprint and to coordinate with Travis AFB community planners. Some jurisdictions have implemented some variation of this concept in their regulatory documents</p>									

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COM-3B	Composite MCA	<p><b>Maintenance and update of MCAs</b></p> <p>Travis AFB should provide updated information to the TSS Coordination Committee (see Strategy COM-2A) when changes in operations or circumstances result in the need to update or modify one of the MCA boundaries. The TSS Coordination Committee will be responsible for making a recommendation to members to incorporate these changes into appropriate plans, regulations, and policies.</p>	Mid-term	■		■	■	■		□	
COM-3C	General	<p><b>Economic development marketing</b></p> <p>Travis AFB should work with the Solano Economic Development Corporation (EDC) and each of the communities to develop economic development marketing guidelines that identify the type of industries that are compatible with Travis AFB mission and the type of industries that are not compatible with the military mission. This would be used by each of the entities and local Chambers of Commerce.</p> <p><i>Other Primary Partners: Fairfield-Suisun Chamber of Commerce, Vacaville Chamber of Commerce, Solano EDC</i></p>	Short-term							□	■
		See Strategies COM-2A, COM-2E, and COM-2I									

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<b>ENERGY DEVELOPMENT (ED)</b>											
<b>ED-1</b>	<b>Development of new or modification of existing wind farms</b> Potential for development of new wind farms or modifications of existing wind farms can create compatibility issues including frequency interference and vertical height concerns if not planned and sited with compatibility in mind in the region.										
		Siting of future wind facilities is considered to be adequately addressed through the Travis AFB Land Use Compatibility Plan.									
<b>FREQUENCY SPECTRUM IMPEDANCE / INTERFERENCE (FSI)</b>											
<b>FSI-1</b>	<b>Radar impacts from wind turbines</b> Location of wind turbines south of Travis AFB impact radar field of view. Turbines are creating false positives. This becomes more of an issue with lots of small aircraft going through the radar on their way to Napa County and the Bay Area. The County and the Airport Land Use Commission have adopted Standards that effectively limit any future geographic expansion of areas where turbines are allowed.										
<b>FSI-1A</b>	<b>General</b>	<b>Upgrade Travis AFB radar equipment</b> As new technologies (equipment and software) become available to mitigate impacts from wind turbines, Travis AFB should look into acquiring such technologies to use for their radar systems.	Long-term							■	

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FSI-1B	General	<p><b>Enhance coordination with communities outside Solano County</b>                      Travis AFB and the Air Force Civil Engineer Center (AFCEC) should enhance outreach to counties outside of Solano County to educate them on the impacts that future wind development may have on Travis AFB radar operations. As part of this, Travis AFB should work with these counties to develop a relationship whereby the counties will alert Travis AFB of any new proposed wind development.</p> <p><i>Other Primary Partners: AFCEC, Counties of Contra Costa, Napa, Sacramento, San Joaquin, Sonoma and Yolo</i></p>	On-going							■	■
FSI-1C	General	<p><b>Coordinate with DOD Siting Clearinghouse</b>                      The DOD Siting Clearinghouse requirements and standards published in Title 32, Code of Federal Regulations, Part 211 shall advise and guide the process to facilitate the early submission of renewable energy project proposals to the Siting Clearinghouse for military mission compatible review.</p> <p>Travis AFB should coordinate with communities outside of Solano County that are within the radar viewshed to encourage them to incorporate policies and procedures for coordinating alternative energy development applications with the DOD Siting Clearinghouse to ensure compatibility with Travis AFB’s operations. If these jurisdictions become aware of any wind energy development projects, they should get contact information for the developer and inform them of the need to coordinate with the DOD Siting Clearinghouse.</p> <p><i>Other Primary Partners: AFCEC, Counties of Contra Costa, Napa, Sacramento, San Joaquin, Sonoma, and Yolo</i></p>	On-going							■	■

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<b>HOUSING AVAILABILITY (HA)</b>											
<b>HA-1</b>	<b>Availability of housing</b> Airmen stationed at Travis AFB, especially enlisted personnel, can find it challenging to find housing that is affordable in the local communities, although housing in Solano County is significantly more affordable than communities to the south in the greater San Francisco Bay Area.										
<b>HA-1A</b>	<b>General</b>	<b>Inform communities of Air Force housing needs</b> Travis AFB should work with the local communities to provide them information on general areas where personnel that work at Travis AFB live and provide them information on personnel housing needs within the communities.	On-going	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>HA-1B</b>	<b>General</b>	<b>Update housing elements and plans</b> The TSS Partner communities should update their housing elements within their general plans to incorporate housing demand estimates for Travis personnel (provided by Travis AFB) associated with the demand from Travis AFB personnel and military families who live in the communities. The estimates should include current occupancy rates and waiting list rates. This will enable a more accurate picture of military housing needs in this area.	On-going	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
<b>HA-1C</b>	<b>General</b>	<b>Inform communities about Travis AFB housing services</b> Travis AFB should inform local realtor associations about its housing services and how new personnel are informed of local housing options, in order to promote housing in local communities.	Short-term	<input type="checkbox"/>	<input checked="" type="checkbox"/>						

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<b>INFRASTRUCTURE EXTENSIONS (IE)</b>											
<b>IE-1</b>	<p><b>Infrastructure growth outside southwest edge of Travis AFB</b>                      Suisun City’s General Plan shows a new interchange for an industrial park along Highway 12, within the city’s Special Planning Area in its Sphere of Influence. This will also require infrastructure extensions to serve the area.</p>										
<b>IE-1A</b>	<b>Composite MCA</b>	<p><b>Continue to monitor development or increase in usage of Highway 12</b>                      Travis AFB should continue to work with the Solano County Transportation Authority (STA) and Caltrans to monitor increases in usage of Highway 12 and identify any proposed development or land transactions in the area south of Travis AFB that are within the accident potential zones.   <i>Other Partners: Solano Transportation Authority, California Department of Transportation</i></p>	On-going	■			■			□	
<b>IE-1B</b>	<b>Composite MCA</b>	<p><b>Encourage compatible land development</b>                      Suisun City and Travis AFB should work with the Solano Economic Development Corporation to promote and encourage economic development along Highway 12 that is compatible with Travis AFB operations.   <i>Other Primary Partner: Solano Economic Development Corporation</i></p>	On-going				■			□	■
<b>IE-1C</b>	<b>Composite MCA</b>	<p><b>Design of lighting</b>                      All lighting at both ends of the Travis AFB runways should be shielded and designed to avoid upward lighting (direct or indirect) and glare. Lighting shall also be designed to exceed the vertical clearances needed for safe aircraft operations.</p>	Short-term	■		■	■				

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IE-2	<b>Enhanced Use Lease development infrastructure</b> Development of the Enhanced Use Lease area on Travis AFB would require outside sources to provide utilities (water, sewer), services (fire, police), and traffic / roadway maintenance.										
IE-2A	General	<b>Fee programs</b> As plans evolve, fee programs used to support the installation, operations and maintenance of community infrastructure and services should be evaluated to address the provision of these services to the Travis AFB EUL area.	Short-term			■				■	
<b>LAND / AIR / SEA SPACE COMPETITION (LAS)</b>											
LAS-1	<b>New ICON aircraft pilot school</b> Nut Tree Airport has potential for expansion of facilities and operations, including a new pilot school for the ICON aircraft.										
LAS-1A	General	<b>Travis operational awareness</b> Incorporate mid-air avoidance instructions and Travis AFB operational awareness into the ICON training course. <i>Other Primary Partners: Nut Tree Airport, ICON Aircraft</i>	Mid-term							■	■
LAS-1B	General	<b>Travis operational information</b> Travis AFB will provide current information on procedures to Nut Tree Airport (Solano County) for distribution and posting to all pilots using the facility. <i>Other Partner: Nut Tree Airport</i>	Mid-term							■	□

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LAS-1C	General	<p><b>MOU between Travis AFB, Nut Tree Airport, and ICON Aircraft</b></p> <p>An MOU should be formed between Travis AFB, Nut Tree Airport (Solano County), and ICON Aircraft to document communications procedures and provide designated points of contact to communicate with in the event of an emergency and to coordinate unusual flight activity from either party.</p> <p><i>Other Primary Partners: Nut Tree Airport, ICON Aircraft</i></p>	Mid-term							■	■
LAS-1D	General	<p><b>MOA between Travis AFB and Nut Tree Airport (Solano County)</b></p> <p>Travis AFB and Nut Tree Airport (Solano County) should develop an MOA regarding continued and formalized communications between the facilities, and Nut Tree Airport growth and development in the context of the current 2013 County Nut Tree Airport Master Plan and future Travis AFB aircraft operations. Procedures for ongoing review of operational or development changes at the airport with Travis AFB should be documented.</p> <p><i>Other Primary Partners: Nut Tree Airport, ICON Aircraft</i></p>	Mid-term	■						■	■
LAS-2	<p><b>Lack of airspace control</b></p> <p>The Class D airspace around Travis AFB does not have the usual restrictions other military installations operate under, leaving it open to general aviation and allowing congested airspace.</p>										
LAS-2A	General	<p><b>Convey concerns to the Federal Aviation Administration</b></p> <p>Travis AFB should document impacts to flight missions, including any constraints resulting from general aviation, and submit to the Federal Aviation Administration for consideration and possible remedies.</p> <p><i>Other Partner: FAA</i></p>	Short-term							■	□

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LAS-2B	General	<p><b>Assess current procedures</b></p> <p>Travis AFB should assess its current procedures and work with the FAA to identify any issues with the current procedures. If any issues are identified, Travis AFB should work with the FAA to develop solutions.</p> <p><i>Other Primary Partner: FAA</i></p>	Short-term							■	■
LAS-3	<p><b>Usage of unmanned aerial systems</b></p> <p>There is a potential that an increase in unmanned aerial systems (also known as drones) usage could cause safety concerns for aircraft. This is an emerging issue at all military installations.</p>										
LAS-3A	Imaginary Surfaces	<p><b>Adopt Ordinances Regulating Unmanned Aircraft</b></p> <p>The ALUC is exploring a potential ordinance addressing unmanned aerial systems and incorporating Federal Aviation Administration rules for recreational, commercial, and other users to allow local enforcement. The ALUC should consult with Travis AFB and local communities to establish areas where such aircraft may and may not be permissible due to their potential impacts to flight operations.</p> <p>TSS Partner jurisdictions should review and adopt the model ordinance when ready for use.</p> <p><i>Other Partner: FAA, local communities</i></p>	Mid-term	■	■	■	■	■	■	□	□

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LAS-3B	Imaginary Surfaces	<p><b>Enforcement and fines</b></p> <p>Travis AFB should work with local law enforcement to assist the FAA and help enforce the established rules and regulations of unauthorized drone usage, and issue fines for those not abiding by the regulations. Travis AFB should work with local jurisdictions to develop public outreach and education regarding drone regulations.</p>	Mid-term	■		■	■	■		■	
LAS-4	<p><b>Crop dusting activities near Travis AFB</b></p> <p>Crop dusting activities in the vicinity of Travis AFB could cause safety concerns during flight operations. There have been minimal reported problems to date.</p>										
LAS-4A	Imaginary Surfaces	<p><b>Implement scheduling coordination</b></p> <p>Travis AFB should implement scheduling coordination procedures to de-conflict operations and accommodate access by local farming interests when they need to fly in or through Military Training Routes and Restricted Areas, when they are active.</p> <p><i>Other Primary Partner: Crop dusters</i></p>	Long-term							■	■
LAS-4B	Imaginary Surfaces	<p><b>Monitor future agricultural needs</b></p> <p>Travis AFB should work with the local communities and farming community to monitor future agricultural needs as they relate to a growth in crop dusting activity. If there is a future increase in crop dusting activity close to Travis AFB, the Base should coordinate flight activity with local crop dusters.</p> <p><i>Other Partner: Crop dusters</i></p>	On-going	□						■	□

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<b>LAND USE (LU)</b>											
<b>LU-1</b>	<b>Land Development in APZs</b> There is some interest in developing land in Travis AFB’s southern APZ that could pose a compatibility issue, depending on the type of use that is developed.										
<b>LU-1A</b>	<b>Composite MCA</b>	<b>Update plans and amend regulations with AICUZ recommended land uses</b> As outlined in the Travis AFB Land Use Compatibility Plan, the TSS Partner jurisdictions should continue to update general plans and amend zoning regulations to incorporate the AICUZ recommended land uses in the safety and noise zones.	On-going	■	■	■	■	■		□	
<b>LU-1B</b>	<b>Composite MCA</b>	<b>As local General Plans evolve, consider including or updating to include military compatibility policies that support and promote compatible land uses</b> As outlined in the Travis AFB Land Use Compatibility Plan, the TSS Partner jurisdictions should continue to update and adopt land use maps, and supportive goals, objectives, and policies that encourage land use patterns compatible with Travis AFB for new development and appropriate capital improvement investments. Include Travis AFB as one of the stakeholders in the development of the plan.	On-going	■	■	■	■	■	■	□	

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LU-1C	Composite MCA	<p><b>Periodic updates to local jurisdiction zoning regulations</b></p> <p>As outlined in the Travis AFB Land Use Compatibility Plan, the TSS Partner jurisdictions should continue to update their zoning map and zoning regulations as needed to be consistent with any changes or updates that may have occurred to the future land use plan / general plan as part of Strategy LU-1B.</p>	On-going	■	■	■	■	■	■	□	
LU-1D	Composite MCA	<p><b>Ensure Federal Aviation Regulation Part 77 compliance</b></p> <p>For all new, redeveloped or rehabilitated structures (including electrical transmission towers / lines, cellular and radio transmission towers, etc.), continue to ensure compliance with Federal Aviation Regulation Part 77 height limit requirements to minimize vertical obstructions (e.g., buildings, telecommunications facilities, recreational facilities, energy transmission / generation towers, etc.). In addition, ensure the developments and structures are compatible with, and do not pose a safety hazard to, air operations in the region.</p>	On-going	■	■	■	■	■	■	□	
LU-2	<p><b>Compatibility of future Enhanced Use Lease development on Travis AFB</b></p> <p>Close coordination will be required to ensure any future Enhanced Use Lease development on Travis is compatible with surrounding areas and is not competitive with planned community development.</p>										
LU-2A	General	<p><b>Coordination on land use plans</b></p> <p>Travis AFB should coordinate with the City of Fairfield before deciding upon a use for the EUL area to ensure that any proposed use would not conflict or compete with the City’s future plans for the area, including the Fairfield Train Station Specific Plan. A joint planning effort for this area should be considered.</p>	Short-term			■				■	

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LU-2B	General	<p><b>Industry Days workshop</b></p> <p>Travis AFB should host “Industry Days” to develop interest and seek proposals for development in the EUL. Proposals shall be coordinated with the City of Fairfield to identify opportunities and potential conflicts.</p>	Short-term			☐				■	
LU-2C	General	<p><b>Coordination with outside service providers</b></p> <p>Travis AFB should coordinate with the City of Vallejo (water service) and other infrastructure and service providers early in the planning process for any new development for the EUL area to ensure they have or can plan for the capacity to provide these services to the new development.</p>	Short-term						■	■	
LU-3	<p><b>Flight tracks</b></p> <p>When the Air Force changes its flight tracks, it affects land planning and policy in the communities.</p>										
LU-3A	General	<p><b>Maintain Travis Reserve</b></p> <p>Solano County and City of Fairfield should maintain their Travis Reserves to ensure Travis AFB can expand as needed to accommodate future mission opportunities.</p>	On-going	■		■					

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LU-3B	General	<p><b>Look into funding from the Readiness and Environmental Protection Integration (REPI) program</b></p> <p>Travis AFB and the TSS Partners should look into the potential for utilizing REPI funding to purchase land or easements around the Base. As part of this consideration, parcels should be identified that if developed could impact operations at Travis AFB. Discussions with landowners should also occur if any properties are identified for potential purchase or easements. Only properties that have a willing seller should be considered for purchase or easements.</p>	Mid-term	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
LU-4	<p><b>Future development south of Travis AFB</b></p> <p>City of Suisun City has received plans for development south of Travis AFB, including a potential interchange.</p>										
LU-4A	General	<p><b>Improved assessment and classification of land use and density in the LUCP</b></p> <p>The Solano County ALUC should reassess the method in which density standards are determined for land uses within the Travis AFB LUCP to better identify land uses that may be appropriate in certain compatibility zones and provide clear guidance on how calculations are performed.</p>	Short-term		<input checked="" type="checkbox"/>					<input type="checkbox"/>	
		See Strategies COM-3A, COM-3B, and COM-3C									

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LU-5	<b>Travis Reserve Area</b> The protective Travis Reserve land use designation expires in 2020. After 2020, the designation can be renewed, adjusted, or removed.										
LU-5A	General	<b>Travis Reserve renewal process</b> The TSS Coordination Committee should work with Solano County, the City of Fairfield, and Solano Land Trust to educate the public on the benefits and role of Travis Reserve in relation to military compatibility. <i>Other Primary Partners: TSS Coordination Committee, Solano Land Trust</i>	On-going	<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>	<input checked="" type="checkbox"/>
LU-5B	General	<b>Discuss Land Use Issue that may impact Travis Reserve</b> Solano County and the City of Fairfield should coordinate and discuss business land use Issues that may impact the Travis Reserve to ensure that the Reserve remains effective in preserving Base operations and expansion possibilities.	Short-term	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
		See Strategy LU-3A									

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<b>LIGHT AND GLARE (LG)</b>											
<b>LG-1</b>	<b>Potential for glint and glare from solar arrays</b> There is a potential that new solar energy development could cause glint and glare that could impact pilots’ vision. The County has adopted an ordinance that minimizes this potential in unincorporated areas by requiring detailed study of glint glare impacts from potential projects. Further, the County has adopted an ordinance that limits commercial solar energy development on agricultural land.										
<b>LG-1A</b>	<b>General</b>	<b>Sandia National Laboratories solar glare tools</b> Travis AFB should continue to use Sandia National Laboratories solar glare tools such as the Solar Glare and Flux Mapping Tools and Solar Glare Hazard Analysis Tool to monitor potential impacts from solar development and solar glare.	On-going							■	
<b>NOISE (NOI)</b>											
<b>NOI-1</b>	<b>Noise from aircraft operations</b> The aircraft operations that occur at Travis AFB produce noise that can be heard outside the boundaries of the Base, within surrounding communities.										
<b>NOI-1A</b>	<b>Noise</b>	<b>Review and as necessary update general plans and amend zoning regulations for noise attenuation standards</b> The TSS Partner jurisdictions should update their general plan and amend their zoning regulations to comply with the recommended guidelines from the Travis AFB AICUZ and LUCP.	On-going	■		■	■				

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NOI-1B	Noise	<p><b>Involve TSS communities staff in AICUZ revisions</b></p> <p>Staff from the TSS Partner jurisdictions within noise contours should be consulted in any AICUZ updates to determine actual incompatibility of existing structures in noise zones based on densities and construction methods used.</p>	On-going	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
<b>ROADWAY CAPACITY (RC)</b>											
RC-1	<p><b>Commercial trucks using North Gate</b></p> <p>About once a week, commercial trucks try to enter Travis AFB from the North Gate due to inadequate signage. The trucks must then turn around, causing traffic delays due to limited facilities for such maneuvers.</p>										
RC-1A	General	<p><b>Adequate signage for commercial traffic</b></p> <p>Travis AFB should continue to work with the City of Fairfield and Solano County to add and maintain signage along main roads, such as Air Base Parkway, directing commercial traffic toward the south gate.</p>	Mid-term	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	
RC-1B	General	<p><b>Expand turnaround area</b></p> <p>Travis AFB should work with the City of Fairfield, Solano County, and the relevant property owners to explore options for expanding the turnaround area for trucks at this gate. Federal funding to assist in development should be sought.</p> <p><i>Other Primary Partner: Property owners</i></p>	Mid-term	<input type="checkbox"/>		<input type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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RC-2	<b>Roadway capacity at North Gate</b> Road capacity at North Gate is inadequate for safety, especially if there is an accident.										
RC-2A	General	<b>Support City of Fairfield improvements</b> The City of Fairfield should lead the efforts for the planned North Gate improvements planned by the Solano Transportation Authority. Travis AFB should consider Defense Access Road Program.	Mid-term	■		■				■	
RC-3	<b>Main Gate traffic</b> There are concerns about throughput at the Main Gate impacting traffic off-Base at peak times.										
RC-3A	General	<b>Continue to promote carpool programs</b> Travis AFB should continue to promote park-and-ride and carpool programs to reduce the number of vehicles entering through the gates during heavy traffic periods. <i>Other Partner: Solano Transportation Authority</i>	On-going							■	□
RC-3B	General	<b>Promote alternative transportation</b> Travis AFB should work with the City of Fairfield to reduce congestion utilizing alternative transportation efforts, such as public transit, biking, or walking. <i>Other Partner: Solano Transportation Authority</i>	On-going			■				■	□
RC-3C	General	<b>Staggered work shift starts</b> Travis AFB should evaluate, on an on-going 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 times.	On-going							■	

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RC-3D	General	<p><b>Bicycle facility enhancements</b></p> <p>Travis AFB should enhance its bicycle facilities and include more bicycle options and incentives for personnel to travel to work by bike to encourage reduction of vehicles. This could include a dedicated bike lane at the gate, increased bike parking, and a biking rewards program that provides items such as meal vouchers or other incentives.</p>	Short-term			<input type="checkbox"/>	<input type="checkbox"/>			<input checked="" type="checkbox"/>	
<b>SAFETY (SA)</b>											
SA-1	<p><b>Fires from off-Base impacting Travis AFB</b></p> <p>Fires have started in the grasslands outside Travis AFB and have burned areas on the Base.</p>										
SA-1A	General	<p><b>Accomplish INRMP implementation projects</b></p> <p>Travis AFB should work to accomplish the required and recommended implementation projects relating to wildfire management in the Travis AFB INRMP.</p> <ul style="list-style-type: none"> <li>• Produce a fire management GIS database (risk analysis, fuel types, history, fuel breaks, and other).</li> <li>• Develop prescribed burn wildlife habitat priorities and coordinate with Wildland Fire Management.</li> <li>• Work with surrounding landowners to enhance fire protection.</li> </ul>	On-going							<input checked="" type="checkbox"/>	

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SA-1B	Land	<p><b>Fifteen-foot mowing area around the Base</b></p> <p>Travis AFB should work with neighboring property owners to keep a 15-foot area around the Base mowed to reduce fire risks.</p> <p><i>Other Primary Partner: Property owners adjacent to Travis AFB</i></p>	On-going							■	■
<b>VERTICAL OBSTRUCTIONS (VO)</b>											
VO-1	<p><b>Infrangible fence</b></p> <p>The adjacent property north of the runway on the east side of Travis AFB has erected an infrangible fence, right up against the Base fence. Fencing at the end of the runway must be frangible in the event a mishap was to occur upon landing or takeoff.</p>										
VO-1A	Safety	<p><b>Coordinate with property owner</b></p> <p>Travis AFB should coordinate with the property owner to install a frangible fence.</p>	Mid-term							■	

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<b>WATER QUALITY / QUANTITY (WQQ)</b>											
<b>WQQ-1</b>	<b>Travis AFB water supply</b> Ensure Travis AFB continues to have a secure and reliable water supply, including multiple supply sources.										
<b>WQQ-1A</b>	<b>General</b>	<b>Redundant water service</b> Travis AFB should work with its local water service provider to develop a cost-effective method to continue redundant water service to the Base.	Mid-term			□			□	■	
<b>WQQ-1B</b>	<b>General</b>	<b>Ensure Travis AFB employs best water management practices</b> Travis AFB should work with the California Department of Water Resources to ensure best practices of water management and conservation are utilized to reduce the water demand at the Base.	On-going							■	

