

**TABLE 7
CITY OF VALLEJO ZONING DESIGNATIONS**

Zoning Designation/District	Definition
Pedestrian Shopping and Service District	<p>Allowable uses include: civic use types (administrative services; clinic services; community recreation; cultural exhibits and library services; essential services; parking services; and postal services) and commercial use types (administrative and professional services; animal sales and services; grooming; building maintenance services; business equipment sales and services; business support services; communication services; convenience sales and personal services; financial, insurance and real estate services; laundry services; repair services: consumer; retail sales: general; telecommunication facilities; and transient habitation: lodging).</p> <p>Uses subject to limitations include: residential use types (family residential); civic use types (community education); and commercial use types (automotive and equipment: repairs, light equipment; automotive and equipment: sales/rental, light equipment; eating and drinking establishments; food and beverage retail sales; live/work; medical offices; personal services: general; and scrap operations: small collection facilities).</p> <p>Uses subject to a major use permit include: civic use types (ambulance services; major impact services and utilities; and religious assembly) and commercial use types (automotive and equipment: cleaning; automotive and equipment: service; gasoline sales; medical services; participant sports and recreation: indoor; participant sports and recreation: bingo; personal services, functional community training for the developmentally disabled; retail sales: adult use; spectator sports and entertainment: adult use; spectator sports and entertainment: limited; spectator sports and entertainment: general; and tobacco retailers).</p>
Waterfront Shopping and Service District	<p>Allowable uses include: civic use types (essential services and parking services) and commercial use types (automotive and equipment: parking; participant sports and recreation: outdoor; retail sales: general; telecommunication facilities; and transient habitation: lodging).</p> <p>Uses subject to limitations include: civic use types (cultural exhibits and library services) and commercial use types (automotive and equipment: sales/rental, heavy equipment; business equipment sales and services; eating and drinking establishments; repair services: consumer; retail sales: adult uses; and scrap operations: small collection facilities).</p> <p>Uses subject to a major use permit include: residential use types (family residential); civic use types (administrative services; ambulance services; clinic services; community recreation; major impact services and utilities; and postal services) and commercial use types (automotive and equipment: repairs, heavy equipment; gasoline sales; participant sports and recreation: indoor; participant sports and recreation: bingo; and spectator sports and equipment: limited).</p> <p>Uses subject to a minor use permit include: commercial use types (live/work).</p>
Freeway Shopping and Service District	<p>Allowable uses include: civic use types (essential services) and commercial use types (automotive and equipment: parking; telecommunication facilities; and transient habitation: lodging).</p> <p>Uses subject to limitations include: commercial use types (eating and drinking establishments; and scrap operations: small collection facilities).</p> <p>Uses subject to a major use permit include: civic use types (administrative services; ambulance services; clinic services; and major impact services and utilities) and commercial use types (automotive and equipment: cleaning; gasoline sales; scrap operations: collection facility, large; and convenience sales and personal services).</p> <p>Uses subject to a minor use permit include: commercial use types (construction sales and services: home improvement materials – tile, cabinets, etc.).</p>
Medical District	<p>Allowable uses include: civic use types (ambulance services; clinic services; essential services; and major impact health care services) and commercial use types (medical services and telecommunication facilities).</p> <p>Uses subject to limitations include: civic use types (community education and group care); and commercial use types (retail sales: adult uses).</p> <p>Uses subject to a major use permit include: civic use types (community recreation; parking services; major impact services and utilities; postal services; and religious assembly) and commercial use types (building maintenance services; business equipment sales and services; food and average retail sales; funeral and interment services: undertaking; funeral and interment</p>

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	<p>services: cremating; funeral and interment services: interring; gasoline sales; laundry services; participant sports and recreation: indoor; participant sports and recreation: bingo; personal services, functional community training for the developmentally disabled; personal services: general; retail sales: general; and research services).</p>
Industrial	
Intensive Use-limited District	<p>Allowable uses include: commercial use types (administrative and professional services; animal sales and service: grooming; building maintenance services; business equipment sales and services (wholesale); business support services; communications services; finance, insurance and real estate services; laundry services; medical services: laboratories, testing and analysis services; repair services, consumer: heavy; retail sales: general; research services; telecommunication facilities; and wholesaling, storage and distribution: light) and industrial use types (custom manufacturing).</p> <p>Uses subject to limitations include: commercial use types (animal sales and services: kennels; automotive and equipment: cleaning; food and beverage retail sales; and retail sales: adult uses).</p> <p>Uses subject to a major use permit include: residential use types (family residential [when accessory to a permitted use]); civic use types (ambulance services; clinic services; community education; essential services; major impact services and utilities; parking services; postal services; and religious assembly); commercial use types (automotive and equipment: parking; automotive and equipment: repair, light equipment; automotive and equipment: sales/rental, light equipment; construction sales and services; gasoline sales; laundry services; participant sports and recreation: indoor; participant sports and recreation: bingo; scrap operations: collection facility; tobacco retailers; and wholesaling, storage and distribution: heavy); and industrial use types (live/work).</p>
Intensive Use District	<p>Allowable uses include: civic use types (ambulance services; essential services; major impact services and utilities; parking services; postal services); commercial use types (administrative and professional services; automotive and equipment: parking; automotive and equipment: repair, light equipment; automotive and equipment: repair, heavy equipment; automotive and equipment: sales/rental, light equipment; automotive and equipment: sales/rental, heavy equipment; business equipment sales and services; business support services; construction sales and services; funeral and interment services: cremating; laundry services; retail sales: general; scrap operation: collection facility: large and processing facility: light; telecommunication facilities; reserved; and wholesaling, storage and distribution: heavy) and industrial use types (custom manufacturing and general industrial).</p> <p>Uses subject to limitations include: civic use types (administrative services; clinic services; and community education) and commercial use types (animal sales and services: kennels; animal sales and services: veterinary (small animals – outdoor kennels and runs) automotive and equipment: cleaning; eating and drinking establishments; food and beverage retail sales; and wholesaling, storage and distribution: light).</p> <p>Uses subject to a major use permit include: commercial use types (automotive and equipment: fleet storage; automotive and equipment: storage, non-operating vehicles; gasoline sales; participant sports and recreation: indoor; participant sports and recreation: bingo; retail sales: adult uses; scrap operations: automotive salvage yards, paper salvage yards, processing facilities, heavy; and tobacco retailers); and industrial use types (heavy industrial and live/work).</p>
Public and Semi-Public	
Public and Quasi-public Facilities District	<p>Allowable uses include: city corporation yards; community centers; community colleges; community theaters; courthouses; fairgrounds; fire stations; golf courses and related retail uses; libraries; marinas and related retail uses; museums; parks and botanical gardens and related retail uses; park and ride lots; police stations; post offices; public administration offices; public playgrounds and playing fields; public kindergarten, elementary, junior high, and high schools; pumping stations (sewage or water); reservoirs and water tanks; state colleges and universities; telecommunications facilities; water tanks.</p> <p>Uses subject to limitations include: commercial use types (eating and drinking establishments when an accessory use to: cultural and library services; essential services; or major impact services and utilities; and food and beverage retail sales when an accessory use to: cultural and</p>

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	<p>library services; essential services; or major impact services and utilities).</p> <p>Uses subject to a major use permit include: airports; amphitheatres; amusement parks; animal pounds; aquariums; cemeteries; communication equipment installation and exchanges; community antenna TV systems; detention facilities; electric transmission lines; electrical substations; exhibition halls; gas substations; heliports; municipal bus stations; participant sports: bingo; public utility service yards; radio transmission facilities; religious assembly; sewage treatment facilities; stadiums and arenas (civic); telephone exchange or switching facilities; television transmission facilities; theme parks; water treatment facilities; and zoological gardens.</p>
Resource Conservation District	<p>Allowable uses include: residential use types (family residential; farm employee residential; and guest residential); civic use types (essential services); agricultural use types (horticulture: cultivation; horticulture: storage; tree crops; row and field crops; and packing and processing: limited); and commercial uses (telecommunication facilities).</p> <p>Uses subject to limitations include: agricultural use types (animal raising); civic use types (eating and drinking establishments when an accessory use to: cultural exhibits and library services, essential services, or major impact services and utilities; food and beverage retail sales when an accessory use to: cultural exhibits and library services, essential services, or major impact services and utilities; and group care); and commercial use types (dredge disposal ponds).</p> <p>Uses subject to a major use permit include: commercial use types (animal sales and services: horse stables; animal sales and services: kennels; funeral services: cremating; funeral services: interring; transient habitation: campground; and participant sports and recreation: outdoor); and extractive use types: mining and processing.</p>
Special Zoning Districts	
Residential View District	<p>To protect the visual quality of highly scenic areas and maintain the character of the city, the development services director or his/her designee will review all building plans for exterior changes or new structures on a site prior to the issuance of a building permit in a residential view district.</p>
Architectural Heritage and Historic Preservation	<p>It is found that protection, enhancement, perpetuation and, use of buildings, structures, landscaping, districts and neighborhoods of historic, architectural and engineering significance located within the city are of cultural, aesthetic and economic benefit to the community and region. It is further found that the economic, cultural and aesthetic standing of the city will be enhanced by preserving the heritage of the city. The purpose of this chapter is to:</p> <ol style="list-style-type: none"> A. Designate, preserve, protect, enhance and perpetuate those historic buildings, structures, landscaping, districts and neighborhoods which contribute to the cultural and aesthetic heritage of Vallejo; B. Foster civic pride in the beauty and accomplishments of the past; C. Stabilize and improve the economic values of certain historic buildings, structures, landscaping, districts and neighborhoods; D. Protect and enhance the city's cultural and aesthetic heritage; E. Recognize the uniqueness of historic resources on Mare Island that have contributed to the history of Vallejo, California and the United States and that have significant value to the economic development and land use goals for the island and the community; and F. Promote and encourage continued private ownership, where appropriate, and utilization of such buildings and other structures now so owned and used, to the extent that the objectives listed above can be obtained under such policy.
Special Land Use District	<p>Any development of land to which this district is applied shall require a major conditional use permit, as provided by the conditional use permit procedure commencing at Chapter 16.82. In addition to the findings required by Section 16.82.050, the planning commission shall grant a use permit only if it finds that the proposed development would not foreclose the future attainment of consistency between the use of the subject land as proposed and the use of subject land as shown in land use element of the general plan. Any conditional use permit granted as provided by</p>

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	this section shall contain site development standards necessary to achieve the purpose of this district.
Geotechnical Hazards District	The geotechnical hazards district regulations shall apply to those lands designated as risk zones B, C and D on the geotechnical land use capability map, Plate 2, seismic safety element.
Flood Hazard District	All development within the flood hazard district shall be subject to Chapter 7.98 of the Vallejo Municipal Code, entitled "Flood Damage Protection."
Fire Hazard District	All development within the fire hazard district shall be reviewed by the fire department to evaluate potential fire hazards and to recommend mitigation measures. Possible mitigation measures include specification of building and roof materials, firebreaks, fire resistant landscape materials, access roads to open areas, internal fire protection systems and adequate water supply.
Hillside Development Guideline District	The hillside development guidelines district shall apply to all land with a natural slope in excess of ten percent for a distance of one hundred feet or more as it existed on January 1, 1980.

Source: City of Vallejo Municipal Code, Title 16; accessed at https://www.municode.com/library/ca/vallejo/code_of_ordinances/toc on February 9, 2015.

8. Solano County

Solano County is approximately 829 sq. mi., and is located between Sacramento County to the east, Yolo County to the north, Contra Costa County to the south, and the Counties of Napa and Sonoma and San Pablo Bay to the west.

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Zoning Designation/District	Definition
Agricultural	
A: Exclusive Agricultural District	Table 28-21A identifies the land uses allowed by this Zoning Ordinance in each agricultural district and the land use permit required to establish each use. In addition to the land use permit required by Table 28-21A, special requirements may apply to certain uses.
A-SM: Suisun Marsh Agricultural District	Table 28-21A identifies the land uses allowed by this Zoning Ordinance in each agricultural district and the land use permit required to establish each use. In addition to the land use permit required by Table 28-21A, special requirements may apply to certain uses.
A-SV: Suisun Valley Agricultural District	Table 28-21A identifies the land uses allowed by this Zoning Ordinance in each agricultural district and the land use permit required to establish each use. In addition to the land use permit required by Table 28-21A, special requirements may apply to certain uses.
ATC: Agricultural Tourist Center Districts	Table 28-21A identifies the land uses allowed by this Zoning Ordinance in each agricultural district and the land use permit required to establish each use. In addition to the land use permit required by Table 28-21A, special requirements may apply to certain uses.
A-DR: Agriculture – Dixon Ridge District	Table 28-21A identifies the land uses allowed by this Zoning Ordinance in each agricultural district and the land use permit required to establish each use. In addition to the land use permit required by Table 28-21A, special requirements may apply to certain uses.
Residential	
R-R: RURAL RESIDENTIAL DISTRICTS	Table 28-31A identifies the land uses allowed by this Zoning Ordinance in each rural residential district and the land use permit required to establish each use. In addition to the land use permit required by Table 28-31A, special requirements may apply to certain uses.
R-TC: RESIDENTIAL-TRADITIONAL COMMUNITY DISTRICTS	<p>These including the following zones: R-TC-1AC: Residential Traditional Community 1 Acre; R-TC-20: Residential Traditional Community ½ Acre; R-TC-15: Residential Traditional Community 1/3 Acre; R-TC-10: Residential Traditional Community ¼ Acre; R-TC-6: Residential Traditional Community 6,000 Square Feet; R-TC-5: Residential Traditional Community 5,000 Square Feet; R-TC-4: Residential Traditional Community 4,000 Square Feet; R-TC-D-4: Residential Traditional Community Duplex 4,000 Square Feet; R-TC-D-6: Residential Traditional Community Duplex 6,000 Square Feet; R-TC-MF Residential Traditional Community Multi-Family; and R-TC-MU: Residential Traditional Community Mixed Use.</p> <p>Tables 28-32A and 28-32A1 identifies the land uses allowed by this Zoning Ordinance in each residential-traditional community district and the land use permit required to establish each use. In addition to the land use permit required by Tables 28-32A and 28-32B, special requirements may apply to certain uses.</p>
Commercial and Industrial	
C-H: District Highway Commercial District	<p>The C-H districts are intended for commercial uses to serve the highway traveler. The bulk of highway frontage throughout the County is not appropriate for commercial uses but is reserved for exclusive agricultural uses, and is so zoned. C-H districts are to be established in areas of four acres or larger, and shall be located only where need is clearly indicated.</p> <p>Table 28.41A identifies the land uses allowed by this Zoning Ordinance in each commercial zoning district and the land use permit required to establish each use. In addition to the land use permit required by Table 28.41A, special requirements may apply to certain uses.</p>
C-N: Neighborhood Commercial District	The C-N district is designed to provide an area for a limited number of small retail and service establishments to provide for businesses serving the daily needs of nearby residential neighborhoods or rural community. The intent of this district is to promote convenience shopping

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	<p>goods and services for nearby residents and not for patrons outside the community to be served. Uses established shall be found compatible and developed with standards that prevent significant adverse impacts on land uses adjoining the C-N districts.</p> <p>Table 28.41A identifies the land uses allowed by this Zoning Ordinance in each commercial zoning district and the land use permit required to establish each use. In addition to the land use permit required by Table 28.41A, special requirements may apply to certain uses.</p>
C-R: District Commercial Recreation District	<p>The C-R zoning district is intended to provide appropriate commercial recreation uses that support recreational activities and resource based recreational uses within the County in a manner compatible with surrounding land uses. The C-R zoning district is consistent with the commercial recreation designations of the General Plan outside the Suisun Marsh management area.</p> <p>Table 28.41A identifies the land uses allowed by this Zoning Ordinance in each commercial zoning district and the land use permit required to establish each use. In addition to the land use permit required by Table 28.41A, special requirements may apply to certain uses.</p>
C-R-L: Commercial Recreation – Limited District	<p>The C-R-L zoning district is intended to provide for limited commercial recreational uses adjacent to the Suisun Marsh compatible with its protection. The C-R-L zoning district is consistent with the Commercial Recreation land use designation of the General Plan within the Secondary Management Area of the Suisun Marsh.</p> <p>Table 28.41A identifies the land uses allowed by this Zoning Ordinance in each commercial zoning district and the land use permit required to establish each use. In addition to the land use permit required by Table 28.41A, special requirements may apply to certain uses.</p>
C-S: District Commercial Service District	<p>The C-S district is designed to provide an area for commercial services of an extensive or heavy nature in support of industrial, construction, or other business activities.</p> <p>Table 28.41A identifies the land uses allowed by this Zoning Ordinance in each commercial zoning district and the land use permit required to establish each use. In addition to the land use permit required by Table 28.41A, special requirements may apply to certain uses.</p>
C-O: District Business And Professional Office District	<p>The C-O district is designated primarily to provide an area for business and professional offices.</p> <p>Table 28.41A identifies the land uses allowed by this Zoning Ordinance in each commercial zoning district and the land use permit required to establish each use. In addition to the land use permit required by Table 28.41A, special requirements may apply to certain uses.</p>
Manufacturing and Industrial	
M-L: Limited Manufacturing District	<p>The M-L district is designed to provide an environment conducive to the development and protection of modern, large scale administrative facilities, research institutions, warehousing, and specialized or light manufacturing organizations, all of a non-nuisance type, in accordance with the concept of an industrial park.</p> <p>Tables 28-42A and 28-42B identifies the land uses allowed by this Zoning Ordinance in each manufacturing and industrial district and the land use permit required to establish each use. In addition to the land use permit required by Tables 28-42A and 28-42B, special requirements may apply to certain uses.</p>
M-G: General Manufacturing District	<p>The purpose of the M-G district is to permit the normal operations of almost all industries, subject only to those regulations needed to control congestion and to protect the surrounding area or adjoining premises. The two size designations are designed to provide a differentiation between an intensive and an extensive type of development.</p> <p>Tables 28-42A and 28-42B identifies the land uses allowed by this Zoning Ordinance in each manufacturing and industrial district and the land use permit required to establish each use. In addition to the land use permit required by Tables 28-42A and 28-42B, special requirements may apply to certain uses.</p>
I-WD: Water Dependent Industrial District	<p>Certain waterfront lands within Solano County are of statewide and regional significance because they are among the few remaining deep-water sites suitable for water-dependent industries. Furthermore, significant agricultural and marsh lands are nearby resources which the County is committed to preserve. For this reason, the I-WD district is established to reserve waterfront</p>

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	lands for large-scale, water-dependent industries to assure the efficient use of waterfront industrial sites, and to ensure that impact upon nearby environmentally sensitive lands are minimized. Tables 28-42A and 28-42B identifies the land uses allowed by this Zoning Ordinance in each manufacturing and industrial district and the land use permit required to establish each use. In addition to the land use permit required by Tables 28-42A and 28-42B, special requirements may apply to certain uses.
Resource Conservation	
W: Watershed and Conservation District	Table 28-51A identifies the land uses allowed by this Zoning Ordinance in the W district and the land use permit required to establish each use. In addition to the land use permit required by Table 28-51A, special requirements may apply to certain uses. Architectural Approval may also be required for certain uses in compliance with Section 28.102 (Architectural Approval). A Building Permit shall also be required prior to any construction, alteration, remodeling or change in occupancy from a previous building permit.
MP: Marsh Preservation District	Table 28-52A identifies the land uses allowed by this Zoning Ordinance in the marsh preservation district and the land use permit required to establish each use. In addition to the land use permit required by Table 28-38A, special requirements may apply to certain uses.
Specialty and Overlay	
P: Park District	Table 28-61A identifies the land uses allowed by this Zoning Ordinance in the P District and the land use permit required to establish each use. In addition to the land use permit required by Table 28-61A, special requirements may apply to certain uses. Architectural Approval may also be required for certain uses in compliance with Section 28.102 (Architectural Approval). A Building Permit shall also be required prior to any construction, alteration, remodeling or change in occupancy from a previous building permit.
PP Overlay: Policy Plan Overlay	The policy plan overlay district is intended to encourage comprehensive planning on focused, large-scale or mixed land use developments. Policy plan overlay districts can provide zoning flexibility by establishing development standards and land use allocations which may vary with the type, density or intensity of use of the underlying district regulations for specific parcels or areas that will ensure balanced and integrated growth guided by creativity and innovation in architecture, planning and environmental design. These standards and uses should accommodate the special needs of the physical site and the community while being consistent with the Solano County General Plan. Development standards are intended to meet or exceed those of the underlying districts described in the other chapters of the Zoning Ordinance while promoting the public health, safety and general welfare without unduly inhibiting the advantages of modern planning and building techniques. The policy plan overlay district requires a detailed development plan that combines the functions of zoning, master, and precise plans, design review, and capital improvement plans in one coordinated process.
Middle Green Valley Zoning Districts	See Middle Green Valley Specific Plan for Zoning Regulations within the Middle Green Valley
Source: Solano County Zoning Regulations, Chapter 28; accessed at http://www.co.solano.ca.us/depts/rm/planning/zoning_regulations , accessed on May 12, 2014.	

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APPENDIX B

Existing and Future Conditions Data

Current Activity Levels

Limited information is available on the historic levels of operations at Travis Air Force Base (AFB). Since 2000, aircraft activity has ranged between 70,279 and 32,524 annual operations; the lowest figure being recorded at the end of 2013. This low is likely the result of the automatic Department of Defense budget cuts that went into effect that year from the Budget Control Act, also known as “sequestration.” In fact, it was estimated that the United States Air Force (USAF) would have to reduce flying hours in 2013 by 18 percent, substantially impacting operational and training missions at all bases.

Interestingly, the new Assault Landing Zone (ALZ) at Travis AFB was commissioned shortly after sequestration went into effect on March 1st of 2013. At that time the Air Force indicated that while they would protect operations in Afghanistan and other contingency areas, about two-thirds of the active duty combat units would reduce training at their home bases. However, the most current Travis AFB data for the 12 months ending in July of 2014 was 33,806 operations, reflecting a 3.9 percent increase over the 12 months of 2013.

Future Activity Potential

Because of the investment and operational efficiency afforded to both based and transient training by the new ALZ, it is assumed that Travis AFB operations will be somewhat insulated from future cuts and that activity will recover from the low in 2013. However, the ability to accurately forecast this recovery or operations at any military air base is complicated by a number of facts. Essentially operational levels can fluctuate year to year as they are dependent on unpredictable variables such as annual defense budgets, national security threats, global military needs, and even natural disasters. Additionally, for national security reasons, the USAF stopped publishing maximum mission estimates for their bases; hence the reason the 2009 Air Installation Compatible Use Zone (AICUZ) study only included activity levels and the corresponding noise contours for the conditions at that time.

For similar reasons, a number of assumptions were used to project future activity levels in the 2002 Travis Air Force Base Land Use Compatibility Plan (LUCP). Effectively, the 2002 LUCP future scenario was defined by doubling the existing activity, estimating the additional operations associated with the proposed ALZ, and incorporating an air cargo hub element (which utilized Federal Express’ hub at Oakland International as a model). Two observations related to the future activity potential at Travis AFB since in the 2002 LUCP include:

- **Assault Landing Zone Activity** - In 2002, activity for the proposed ALZ was estimated to be 27,700 operations annually which were doubled to 55,400 resulting in approximately 30 percent of the future scenario activity. Afterwards, the 2008 Environmental Assessment (EA) for the Permanent Western United States C-17 Landing Zone projected 12,000 annual operations (approximately 15 percent of total activity) would be conducted on the ALZ once operational. Current ALZ operations are difficult to determine since the activity is included within the total airfield counts. Nonetheless, while activity is not currently at the 2002 estimate of 27,700 annual operations, it is believed to represent a similar level (30 percent) of total operations. This is evident as the local training activity has historically represented more than half of the annual operations.
- **Air Cargo Hub Potential** - The civilian air cargo hub (and potentially some civilian airline activity) described in the 2002 LUCP has not been established at Travis AFB. Given that this was considered prior to September 11th and the current defense budget concerns, it is assumed this is no longer under consideration for the base. However, there are plans for a consolidated super aerial port which would combine the existing passenger terminal and air cargo capabilities at Travis AFB to a single location using either new or shared facilities.

As part of Air Mobility Command, the 60th Air Mobility Wing host unit at Travis AFB is the largest air mobility organization in the USAF. The primary mission of the Air Mobility Command is to provide strategic airlift, air refueling, and aeromedical evacuation capabilities around the globe. Travis AFB serves a key role in these core missions. The facilities handle more cargo and passengers than any other military air base west of the Appalachian Mountains and can be the busiest Air Force aerial port in the nation depending on the location of world events. Travis AFB is also the West Coast terminal for aeromedical evacuation aircraft returning sick or injured patients from the Pacific area with the largest Medical Center in the United States Air Force.

When the items above are taken into consideration with the current base infrastructure, Travis AFB has a significant potential to not only maintain its current missions, but also to expand its role as a priority airfield in the USAF inventory. The recent addition of the ALZ further supports the argument that the airfield has significant potential; however, based upon Department of Defense wide budget and manpower cuts, there is excess infrastructure across the military's assets. This is generating policy discussion on creating another round of Base Realignment and Closure (BRAC) within the next two to five years. Therefore, a calculation of the current airfield capacity is considered the best method to estimate the maximum mission potential of the base.

Theoretical Capacity of Airfield Facilities

When defining the maximum mission potential for Travis AFB, airfield facilities such as aprons, terminals, or even maintenance areas were not considered a limiting factor. Excluding the air cargo or maintenance areas, there are enough dedicated aircraft parking areas to accommodate the current 60 based aircraft. However, with the various missions and continuous activity there is rarely (if ever) a time when all of the based aircraft are at the airfield at the same time. Further, even if all based aircraft are on the ground, it is estimated that only 47 percent of the parking apron would be utilized; leaving over 50 percent of the ramp available for additional mission use and aircraft parking. Additionally, given the airfield configuration and base property, the ability

to add or reconfigure aircraft parking and support facilities for future activity is possible. Conversely, the current runway and taxiway system does have a tangible capacity limit. This is predicated on the assumption that the USAF will not relocate or add any new runways to increase the future capacity of Travis AFB.

An estimate of the runway and taxiway capacity was included in the 2008 EA. Using criteria from Air Force Handbook 32-1084, *Facility Requirements*, the Practical Annual Capacity (PANCAP) for Travis AFB was calculated at 280,000 annual operations. At that time, the 2008 EA baseline data (70,279 annual operations for calendar year 2002) showed the runway and taxiway system operating at 25 percent of their capacity. It should be noted that the addition of the ALZ does not increase the airfield capacity as the centerline spacing with Runway 03R-21L does not permit simultaneous operations to all three runways.

As a means of comparison, the Federal Aviation Administration (FAA) methodology for computing the Annual Service Volume (ASV) of a runway and taxiway system was evaluated. ASV is the FAA equivalent to PANCAP but can be calculated using more specific details with respect to how the airfield is configured and operated. In fact, reference is made to FAA Advisory Circular (AC) 150-5060-5, *Airport Capacity and Delay*, in a couple of sections of Air Force Handbook 32-1084. Using current airfield configuration and operational fleet mix data, an ASV of 264,000 was calculated for Travis AFB using the FAA methodology.

Maximum Mission Estimate

The Air Force criteria state that an additional runway is required when the PANCAP is exceeded for two consecutive years or when certain thresholds for either hourly capacity or minutes of aircraft delay are reached. While the FAA has similar criteria, they have also defined the point at which the specific planning should begin to increase capacity. The purpose is to provide a sufficient lead-time for the actual capacity improvement to be made before aircraft delay or even safety issues become critical. For runway and taxiway system capacity, the FAA recommends starting the capacity enhancement process when the levels reach 60 to 75 percent of the ASV.

Under the assumption that the USAF will not conduct any future projects to increase runway and taxiway capacity at Travis AFB, it is reasonable to consider the upper end of the FAA range (75 percent) to define the limit at which the airfield could operate without significant delay or any safety concerns. This results in a future maximal level of 198,000 to 210,000 annual operations, depending on whether PANCAP or ASV is applied. The lower threshold from ASV was selected to define the maximum mission of the Travis AFB. While current activity is nearly half of what it has been in the past, applying a maximum mission of 198,000 annual operations creates a realistic level for which future noise contours and therefore comprehensive land use decisions can be made.

Aircraft Operational Fleet Mix

The operational fleet mix is split between based and transient aircraft activity. This facilitates establishing the average busy day operations that will be used to generate the noise contours.

Consistent with the 2009 AICUZ model, the USAF concept of an average busy day utilizes a different number of average flying days depending on the type of operation. While the transient military, contract commercial, and general aviation aircraft operate 365 days a year, many of the based aircraft do not regularly fly on weekends or holidays. Thus the average busy day for based aircraft will vary depending on the type of activity.

Of the 60 aircraft based at Travis AFB, the current fleet mix includes 13 C-17s, 18 C-5s, 27 KC-10s, and 2 US Navy E-6Bs. The types of transient military, contract commercial, and general aviation aircraft vary for any given period; however, the fleet mix includes mostly operations by other C-17, C-5, and KC-10 units, as well as KC-135, B747, and C-130H models. The 2014 transient aircraft count provided by Travis AFB was utilized to identify a list representing the most predominate transient fleet mix (**Table 2-1**).

The local versus itinerant split for the current activity in **Table 2-1** is based on the Travis AFB tower counts (12 months ending July 2014). However, due to the limited detail available, the operational fleet mix split for the current condition is based on the historic data available. For the maximum mission, it is anticipated that the local versus itinerant activity will re-align with the historic splits between these operations (i.e. more local training activity). Similarly, the split associated with the operational fleet mix of the maximum mission has been adjusted to reflect an increase in the share of activity generated by transient aircraft. This follows the assumption that Travis AFB will continue to support significant training operations for the USAF and other military branches, especially with the establishment of the new ALZ.

With respect to future operational fleet changes, the current types of based and transient aircraft are expected to remain the same in the near term (next two to five years). It has been estimated that around the 2020 timeframe, the KC-10 will face scrutiny for retirement. The current KC-46 program has completed the first and second round of basing decisions. The bases selected in these rounds were all primarily existing KC-135 installations. Current legislative language does not allow the retirement of the KC-10 without a viable mission replacement. Whether that is the KC-46 or another platform has yet to be determined. Additionally, a future airlift aircraft (to replace the current C-17 and C-5 aircraft) is an on-going project for the USAF and still in the preliminary stage of defining aircraft requirements.

Travis AFB is a viable installation for any future mission with its moderate weather, proximity to major land and sea transportation nodes, and excess ramp and real estate capacity. For the maximum mission, future activity will consider the potential for expanded operations by similar type aircraft from other units; however, the KC-46 will not substitute any of the based or transient KC-10 activity. While some are certain to operate at Travis AFB in the future, the extent of their activity is difficult to estimate. What is known is that the KC-10s will remain for some time, and with a slightly larger noise footprint, it is considered more conservative to keep this aircraft as the representative air refueling aircraft of the various units.

Summary of Initial Modeling Data

Table 2-1 lists the initial operational data that will be utilized to develop updated noise contours for Travis AFB.

**TABLE 2-1
INITIAL OPERATIONAL DATA SET - TRAVIS AFB**

	Current Condition	Maximum Mission
Total Annual Operations	33,806	198,000
Operational Fleet Mix		
<u>Based Aircraft</u>		
C-5	3,742	18,079
C-17	9,545	45,991
KC-10	14,888	71,518
E-6B	558	12,921
Sub Total	28,733 (85%)	148,509 (75%)
<u>Transient Aircraft</u>		
B-747	142	1,376
C-130H	1,650	16,106
C-17	719	7,035
KC-135R	1,530	14,927
C-40	80	774
KC-10	354	3,453
DC-8	4	33
C-5	263	2,555
C-20	66	646
C-12	40	405
T-38	123	1,210
F-15	51	485
F-16	51	485
Sub Total	5,073 (15%)	49,489 (25%)
Types of Operations		
Local (Closed Pattern)	17,918 (53%)	130,680 (66%)
Itinerant	15,888 (47%)	67,320 (34%)

SOURCE: Environmental Science Associates, 2015
Note: The numbers are rounded.

Detail on how the operations have been distributed among the different periods of an average busy day as well as to the various arrival, departure, and training flight tracks will be determined.

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