

# CALIFORNIA AVIATION SYSTEM PLAN

## SYSTEM REQUIREMENTS ELEMENT



25



# **CALIFORNIA AVIATION SYSTEM PLAN**

## **DRAFT SYSTEM REQUIREMENTS ELEMENT**

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# Introduction

## Preface

This edition of the California Aviation System Plan's System Requirements Element represents a new approach toward planning capacity and capability improvements as well as for achieving safety objectives for the aviation segment of California's Transportation System. It is the position of the Division of Aeronautics that significant latent capacity exists that may be realized through a focus on at least preserving and also enhancing existing infrastructure at the state's 244 General Aviation and Reliever Airports. Additionally, in a time of economic difficulty for the aviation industry, characterized by double digit declines in commercial airline load factors and additional expenses resulting from safety and security measures taken as a result of terrorism concerns, the likelihood that funding will be available in the near future for new large-scale capacity expansion projects seems remote. While these types of projects will need to be implemented, present conditions provide an ideal opportunity to enhance system capacity and improve safety at California's existing facilities with relatively minor additional investment in airport infrastructure improvements.

## Purpose of the System Requirements Element

The System Requirements Element is one of ten Elements and Working Papers that make up the California Aviation System Plan (CASP). The CASP is prepared by the California Department of Transportation, Division of Aeronautics and updated every five years per California Public Utilities Code Section 21701, et seq. The law requires the CASP to be developed in consultation with Regional Transportation Planning Agencies (RTPAs) and to be adopted by the California Transportation Commission (CTC). The entire CASP effort also includes and works in concert and is consistent with the following three items:

- Aviation elements of Regional Transportation Plans (RTP), which are prepared by the RTPAs.
- Interregional aviation system plans developed through partnerships that are coordinated by the Division of Aeronautics for regions outside of major metropolitan areas.
- California Transportation Plan, developed in collaboration with transportation policy and decision-makers, transportation providers, and the traveling public.

The primary purpose of the System Requirements Element is to identify and prioritize needed airport capacity and safety related infrastructure enhancements that impact the safety and effectiveness of the California Aviation Transportation System. The emphasis is enhancement projects at facilities the Division of Aeronautics is best suited to impact: General Aviation and Reliever Airports. On average, nearly 80% of all aircraft operations within California are conducted at these types of facilities. The State's Primary Commercial Service airports are discussed only briefly. While their role in serving the majority of air passengers in California's Transportation System is critically significant, the reality is these facilities operate on a scale that allows them to be independent of and seldom even apply for project funding from the Division's four funding programs. In consideration of this truth, the focus of this document is on areas the state's limited financial resources available for airport projects, which are derived solely from General Aviation fuel excise taxes, may best be applied to enhance the California Transportation System. The information used in this document was obtained from existing sources, such as RTP's, Airport Master Plans, FAA 5010 Inventory Master Record documents, Regional Aviation System Plans and other planning documents. The System

Requirements Element is intended to help identify where enhancement needs exist locally and in the overall aviation system-planning picture.

**Place of the System Requirements Element in the CASP**

The System Requirements Element is to be updated in parallel with the biennial ten year Capital Improvement Plan as logical follow-ups to the CASP's Inventory and Forecast elements. Starting with this edition, the System Requirements Element is to be updated every 2 years in order to more closely link it to the development of the Capital Improvement Plan. The matching of these two documents is important because, while the Capital Improvement Plan is a fiscally unconstrained plan of desired projects based on applications submitted by airports with RTPA concurrence, the System Requirements Element includes a list of potential projects needed to optimize the capacity and safety of California's system of airports, a consideration outside the responsibility of individual airports. Combined, these two elements will serve as a guide toward ensuring state airport project funding is directed toward projects needed at both the statewide system and local levels.

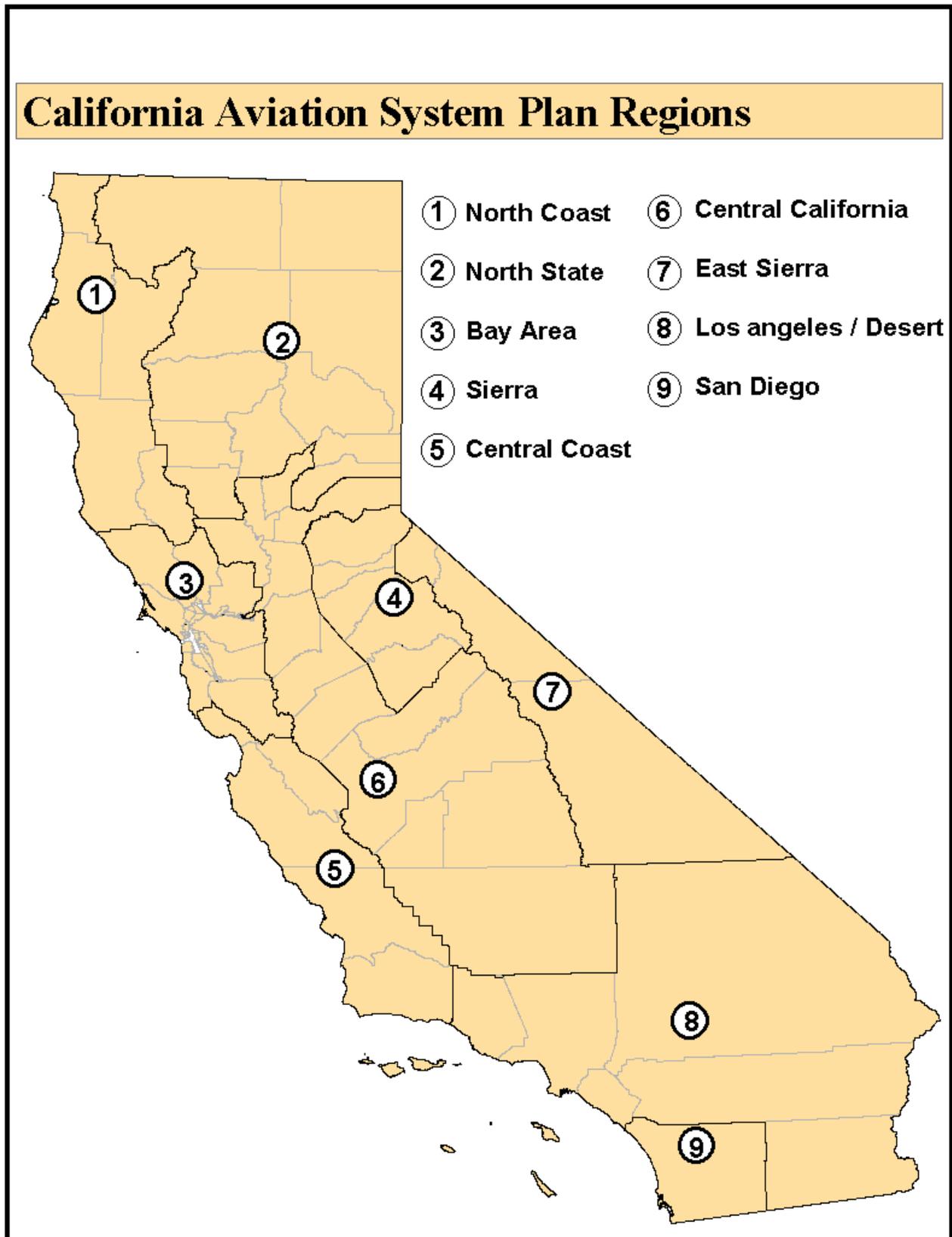
**System Requirements Element Format**

This element is broken into two sections: Section I: General Aviation & Reliever Airports and Section II: Primary Commercial Service Airports.

“Section I: General Aviation & Reliever Airports” reviews airport functional classifications within the California Aviation System Plan and compares that with the Federal Aviation Administration (FAA)'s National Plan of Integrated Airport Systems (NPIAS). Also presented are state airport permit categories and federal and state airport project funding eligibility. Minimum standards are set based on functional classification descriptions followed by a detailed need identification and analysis for all airports within each of the nine CASP planning regions (see map, page 3). A suggested prioritization schedule of airports with identified projects, based on Capital Improvement Plan criteria but in no particular order, is then provided, followed by a table of enhancements and related cost estimates of identified enhancements.

“Section II: Primary Commercial Service Airports” discusses the State's limited role in planning and programming airport projects for these facilities. Current trends, forecasts, and known and anticipated enhancement needs are portrayed with a focus on the impact of not addressing these needs at General Aviation and Reliever Airports.

MAP 1



**Airport Classification**

Airports are classified in different ways by different agencies for different purposes. The FAA, in its National Plan of Integrated Airport Systems (NPIAS), identifies airports as General Aviation, Reliever, Commercial Service-Primary Hubs (Large, Medium, or Small), and Other Commercial Service. Not included in the NPIAS for a variety of reasons are a significant number of other airports, any of which are thus solely dependent on state and/or private funding. NPIAS eligibility is described in detail in the glossary.

Another classification system, introduced in the 1998 Inventory Element of the CASP, is still used by the Department to relate how each airport functions in serving the community, region, state, and nation. Military Airports are exempt from the state permitting process and are not eligible for state funding. Therefore, they are not included for consideration in this element. However, it is important to note that these facilities do represent substantial sources of additional capacity should they ever be made available. Additionally, there are two Joint Use Military/Civil airports. While the use of these facilities by civil operators is limited to specific approved uses, the fact that they have been made available in even a limited fashion warrants their discussion in this document. The CASP identifies airports as Limited Use, Community, Regional, Metropolitan, and Commercial/Primary. This distinction between facilities is very useful in most of the Division's system planning activities. However, for this edition of the System Requirements Element it was necessary to establish a stronger link between these functional classes and airport infrastructure requirements, specifically that infrastructure for which the Division can provide project funding.

A matrix illustrating the relationship between NPIAS and CASP airport functional classifications is provided in Table 1 on the following page. Further discussion of airport functional classification is provided in Appendix 1 at the end of this report.

**Table 1  
Airport Functional Classification Categories and  
Subcategories**

FAA NPIAS GENERAL AVIATION-RELIEVER AIRPROTS	<p><b>LIMITED USE</b> Subcategories – added if LIMITED USE Airport provides a special service</p> <ul style="list-style-type: none"> <li>Agriculture</li> <li>Firefighting</li> <li>Recreational Access</li> <li>Medical Emergency</li> </ul> <hr/> <p><b>COMMUNITY</b> Subcategories – added if COMMUNITY Airport serves one activity</p> <ul style="list-style-type: none"> <li>Agriculture</li> <li>Firefighting</li> <li>Recreation</li> </ul> <p><b>REGIONAL METROPOLITAN</b> Subcategories – added if REGIONAL or METROPOLITAN Airport serves one activity</p> <ul style="list-style-type: none"> <li>Business/Corporate</li> <li>Recreation</li> <li>Cargo</li> </ul>
FAA NPIAS COMMERCIAL-PRIMARY AIRPROTS	<p><b>COMMERCIAL-REGIONAL</b> <b>COMMERCIAL-METROPOLITAN</b> <b>PRIMARY-(Hub Size)-REGIONAL</b> <b>PRIMARY-(Hub Size)-METROPOLITAN</b> Subcategories – added if one of the above category airports serves one activity</p> <ul style="list-style-type: none"> <li>Business/Corporate</li> <li>Recreation</li> <li>Cargo</li> </ul>

**Connecting Functional Classification and Funding Eligibility**

The NPIAS and its associated classifications are important considerations in this element because for an airport to be eligible to receive FAA Airport Improvement Program (AIP) funding, it must be listed in the NPIAS. A key factor necessary to be included in the NPIAS is a requirement that the airport be owned by a public entity. Eligibility for state funding of airport projects is established in the California Aid to Airports Program (CAAP) to be dependent on the issuance of a public use airport permit by the Division of Aeronautics to publicly owned airports. Because airports depend on multiple funding sources for which they are eligible, an important factor to consider in project prioritization at the state level is the funding sources for which each airport is eligible. There are numerous combinations of eligibility criteria that affect the resources available to a given airport. For example, Non-NPIAS public use permitted, public-owned airports are often at a great disadvantage since they are only eligible for state funding, a much smaller pool of funds than federal funding. For this reason, it may be warranted to grant these airports additional consideration for state funding depending on their functional classification and role in the state aviation system.

**Establishment and Assignment of Minimum Standards to Functional Classifications**

Having established the need for airport infrastructure standards, how best to identify minimum standards and assign them to functional classifications requires understanding the types of projects eligible for state funding and their potential benefits to the system. A research of similar efforts by aviation agencies in other states was initiated and proved quite useful. (Notably, the State of Oregon's Aviation Plan's System Element served as a model for this document.). Table 2A and 2B show the identified minimum standards used in the preparation of this document. Standards were selected with general safety and capacity enhancements in mind, along with airport design categories, with the goal of ensuring that the majority of general aviation aircraft in that category would be able to operate into and out of airports safely and effectively.

Table 2A

Project Description (in order of priority)	Minimum Standards by Functional Classification	
	Commercial/Primary Hub	Commercial/Primary Non-Hub or Commercial Service
Runway Length/ Extension	8,000 feet or as provided in Airport Master Plan	7,000' if below 3,000' MSL or 8,000' if above 3,000' MSL; or as provided in Airport Master Plan
Runway Width	150'	150'
Runway Weight Limit	60k/single wheel 200k/dual wheel 300k/dual tandem wheel	50k/single wheel 100k/dual wheel
Runway/Approach Lighting	MALS to runway with Precision IFR approach	MALS to runway with Precision IFR approach
24-Hour On-Field Automated Weather (AWOS/ASOS)	24 hour on-field weather observation	24 hour on-field weather observation
Landing Aids	VASI/PAPI to lighted runway if no approach lights; REIL for IFR runway w/o approach lights	VASI/PAPI to lighted runway if no approach lights; REIL for IFR runway w/o approach lights
Fuel Available	Jet A and Avgas	Jet A and Avgas

Table 2B

Project Description (in order of priority)	Minimum Standards by Functional Classification			
	Metropolitan	Regional	Community	Limited Use
Runway Length/ Extension	5,000' if below 3,000' MSL; 6,000' if above 3,000' MSL; or as provided in Airport Master Plan	Sufficient to accommodate <b>100%</b> of the aircraft fleet at <i>60% useful load</i> per FAA AC 150/5325-4A Fig. 2-4	Sufficient to accommodate <b>100%</b> of the aircraft fleet having <i>10 passenger seats or less</i> per FAA AC 150/5325- 4A Fig. 2-1	Sufficient to accommodate <b>75%</b> of the aircraft fleet having <i>10 passenger seats or less</i> per FAA AC 150/5325-4A Fig. 2-1
Runway Width	100'	75'	75'	60'
Runway Weight Limit	25000/ single wheel	12,500 single wheel	12,500 single wheel	12,500 single wheel
Runway/Appch Lighting	MALS to runway with Precision IFR approach	None	None	None
24-Hour On-Field Automated Weather (AWOS/ASOS)	24 hour on-field weather observation	24 hour on-field weather observation	24-hour on-field weather observation if IFR Approach or Part 135 or air ambulance operator on field.	None
Landing Aids	VASI/PAPI to lighted runway if no approach lights; REIL for IFR runway w/o approach lights	VASI/PAPI to lighted runway if no approach lights; REIL for IFR runway w/o approach lights	VASI/PAPI to lighted runway if no approach lights; REIL for IFR runway w/o approach lights	None
Fuel Available	Jet A and Avgas	100LL Avgas, & Jet A unless runway length is less than 3,000'	Avgas	None

The primary consideration in this effort to establish minimum standards was adequate runway length and width to accommodate the majority of representative aircraft likely to use the facility. Special effort was made to relate runway length and width to each facility's unique aircraft performance-limiting characteristics, primarily field elevation and average high temperature, central considerations when calculating a facility's density altitude. As a result, the minimum standard runway length is unique to each airport. At airports without paved runways, it is generally preferable to put pavement down before considering a runway extension. Figures 2-1 and 2-4 from FAA AC 150/5325-4A can be found in the appendices.

In cases where a runway would need to be extended by less than 100 feet to meet that airport's calculated minimum longest runway length, the runway was generally considered to meet minimum standards without an extension.

In many cases, the existing length of an airport's longest runway exceeds its minimum standard length. Though shown in the table as a reference, this comparison is not a recommendation to or justification for shortening a runway.

### **Enhancement Needs Assessment**

Once the standards were assigned, a comprehensive review of each minimum standard category for each airport was initiated. The primary source for this data was the Division's own database of airport data gathered by staff during state permit compliance inspections and FAA 5010-1 Inventory Master Record program inspections (5010-1 is the FAA form used to document airport information at non FAR Part 139 airports). Other data reviewed included airport master plans, airport layout plans, the 1998 CASP Inventory Element, the 1999 CASP Statewide Forecasts Element, and interviews and comments from staff and airport management. From this data, facility enhancement needs were identified. Tables and a brief narrative of the needs assessment are provided in the regional subchapters of Section I.

### **Enhancement Needs Prioritization**

Once identified, these standards needed to have assigned a ranking or weighting based on their net value to the goal of enhancing system capacity and safety. Recognizing an ideal opportunity to link this document to the Capital Improvement Plan (CIP), that document's proposed project prioritization schedule was applied to project types necessary to address identified needs. The 2003 CIP's project prioritization schedule, limited to project types for which airport data was readily available, is reflected in Tables 2A and 2B. As the 2003 CIP has already been adopted, the System Requirements Element is considered an important reference document for airports to consider when submitting projects for future CIP's.

The categories of standards shown on Tables 2A and 2B are the first identified set of project types for which minimums have been identified. It should be noted that the data necessary to thoroughly assess some desired but not included project categories (adjacent land use, clear FAA Part 77 imaginary surfaces, instrument approach procedures) is complex, continuously changing, and not readily available for every airport. Also, though desired, not all projects are eligible for state and/or federal funding. Certainly, there will be additional categories considered in future updates of this document.

### **Cost Estimates of Needed Enhancements**

An unconstrained cost estimate of identified projects is provided for each region except the State's Primary Commercial Service airports. It is necessary to recognize that accurate estimates are difficult to derive without any actual project scoping data that takes into account site-specific considerations. As an example, an estimate may be provided for the cost to extend and widen a runway without taking into account whether or not other infrastructure such as runway lights, taxiways, or hangars would need to be relocated to accommodate this enhancement. Thus it is expected that the total of the estimates provided here understate the actual costs of all projects necessary to accommodate those specified. For most enhancement projects eligible for state funding, an average cost of various potential mitigating projects was determined based on a review of similar projects previously submitted for inclusion in the CIP and consultation with manufacturers and airport managers familiar with the costs associated with recently completed projects. The total estimated cost of the identified enhancement projects comes to \$120.28 million.

### **Additional Considerations**

The majority of recent and projected growth in the general aviation aircraft marketplace has been in the business/personal turbine (turbojet and turboprops) class, with many small jets scheduled to enter service in the near future. Thus runway dimensions were a priority consideration in developing this document. While the current length of several airports' longest runways (35% in the state) already exceeds the minimum standard length, runway extensions are still needed at many General Aviation facilities. In most cases the extensions are possible should the airport sponsor and the community recognize the value air transportation provides. Perhaps even more significant is the impact of widening a runway, an enhancement need common to most California airports. Though an average of 20 feet wider doesn't sound like much, it would run the entire length of the existing runway, meaning that the square footage of most widening projects will exceed that of extensions, and so the cost for material will be higher. Additionally, widening a runway has significant implications for adjacent airport surfaces and equipment: taxiways in many cases would need to be moved in order to maintain minimum separation distances from the runway and runway lighting systems and signage would have to be relocated. None of these additional impacts have been quantified in this report, as they would require project specific study for each airport. Thus the estimated costs shown in the tables are just that: estimates. These estimates are based on current experience with rates for pavement projects, and include some allowance for variations in cost. Finally, there are some facilities where a runway extension or widening is unlikely due to practical considerations such as terrain (such as moving mountains or filling valleys), available land (such as encroachment by development that leaves no room for expansion), and environmental considerations (such as wetlands and/or habitat preservation). For these projects, cost has been categorized as "To Be Determined" (TBD-Terrain; TBD-Land; TBD-Enviro). Still, listing them in this document serves to illustrate this fact and as a basis for considering reclassifying these facilities and their roles in California's aviation system.

While adequate runway dimensions and support features including fuel, weather data, and instrument approach procedures were significant considerations in this process, many airports that do not, and may never, meet minimum classification standards are considered critical due to their location and likely role in the case of emergencies or natural disasters. FAA Advisory Circular 150/5325-4A was the primary resource used to estimate the required minimum runway length. Representative tables from this publication are included in appendices 3 and 4.

It is important to note that inclusion or omission of a particular airport project is not necessarily permanent and does not represent a commitment to complete or prevent said project. In fact, the determining factor on any airport project is the commitment of the airport's sponsor and stakeholders to support or oppose it. This document attempts to identify airports best suited to serve in significant roles at the statewide, regional, and local levels, and the enhancements needed to optimize their functionality within their classifications.

Finally, many apparent issues and conflicts arise out of the fact that many California airports have been in operation since before the current State and Federal standards were adopted. Though significant challenges exist, the goal of supporting projects that bring airports into compliance with modern standards whenever possible is a worthy one. However, while compromising capacity considerations in the interest of safety may be necessary, projects that compromise safety for any reason are unacceptable.

**SECTION I:**

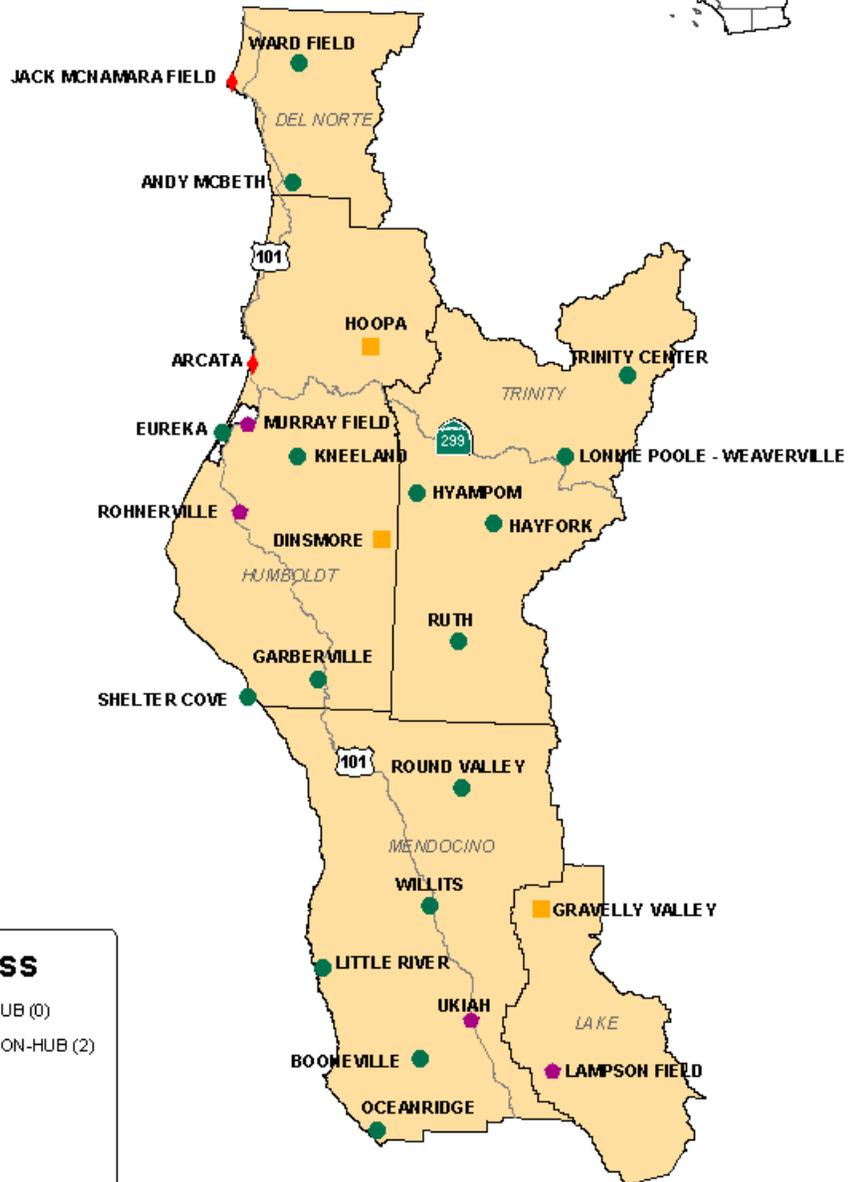
**GENERAL AVIATION**

**AND RELIEVER**

**AIRPORTS BY CASP REGION**

California Aviation System Plan:  
Region 1 Public Use Airports

**NORTH COAST**



## North Coast Region

The North Coast Region is located in the northwestern portion of California bounded by Oregon to the north and Sonoma/Napa Counties to the south. Each county contains its own Regional Transportation Planning Agency (RTPA). Counties in the North Coast CASP Region are:

Del Norte	Humboldt	Trinity
Mendocino	Lake	

### **Regional Overview**

In July 2000, the California Department of Finance estimated there were 315,500 residents in this region. By 2020, the population is estimated to increase by approximately 29%, to 406,200 people.

Of the 25 public-use airports in this CASP region, Jack McNamara Field (Del Norte County) and Arcata Airport (Humboldt County) are the only airports in the region with scheduled passenger service. The *1999 CASP Forecast Element* stated there were 603 based aircraft and 413,400 general aviation (GA) annual aircraft operations within the region. By 2015, these figures are estimated to increase by 27.3% (to 768 based aircraft) and 21.5% (502,446 annual GA operations) respectively.

The North Coast region is largely rural and characterized by a rugged geography of forest-covered mountains and winding river valleys. While many airports may not get a lot of use, they are valuable assets from an emergency-services perspective. For example, operators involved in fire-fighting and search and rescue activities are frequent users of these facilities to the benefit of the region and state. Transportation within the region is primarily dependent upon a few state highways and each county's road system. Extended disruption of any of these routes, due to frequent landslides or earthquakes, could have serious impacts on suddenly isolated communities. From the perspective of aircraft operators, these airports represent safe landing areas interspersed between vast tracts of difficult to traverse terrain, a welcome sight in cases of bad weather or mechanical difficulties. Thus, this region's numerous isolated small airports, even without addressing the needed enhancements identified in this analysis, are all considered valuable regional assets.

### **Airport Needs Analysis by Functional Classification**

#### **Primary Commercial Service Hub Airports**

There are no Primary Commercial Service Hub Airports in this region. The closest Primary Commercial Hub Airport to the region is Sacramento International, though Bay Area Airports may be more convenient to reach by land. Refer to Section II for a discussion of all California Primary Commercial Service Hub airports.

#### **Primary Commercial Non-Hub and Commercial Airports**

Jack McNamara and Arcata are the only Primary Commercial Service Non-Hub airports in the region. While Arcata handles the majority of the region's commercial traffic, both airports serve critical complementary roles in the region's air transport network, providing access to national and international air service. Together with a few Metropolitan General Aviation Airports, these facilities provide capacity redundancy to a region isolated by rugged geography, making surface transportation slow and vulnerable to interruption due to natural occurrences such as earthquakes and landslides. Both Arcata and McNamara would benefit from runway extensions. If geographically and environmentally feasible, extensions should be a high priority for each.

#### **Metropolitan General Aviation Airports**

There are no Metropolitan General Aviation Airports in the North Coast Region.

### **Regional General Aviation Airports**

There are four Regional General Aviation airports in the North Coast Region: Lampson Field (Lake Co.), Murray Field (Humboldt Co.), Rohnerville (Humboldt Co.), and Ukiah Municipal (Mendocino Co.) airports. All four facilities would benefit from runway extensions, and that is all Ukiah Municipal Airport would need to meet all minimum requirements of a Regional General Aviation airport. Additionally, Lampson Field's runway width is 15 feet too narrow and there is no jet fuel available, otherwise it would meet the minimum standards for this classification. However, in the case of Lampson Field's 3,600-foot runway and Murray Field's 3,000-foot runway, the immediate need for Jet A fuel is likely minimal as relatively few jet aircraft can safely operate on such runways. The needed extensions at these two facilities may be difficult to achieve due to terrain considerations. Rohnerville and Murray Field airports are both in Humboldt County, in relatively close proximity to Arcata Airport. A need shared by both is 24-hour on-field weather services, especially since both airports have instrument approaches. Murray Field also lacks fuel availability and is in need of a significant runway extension to meet its minimum standard length. Murray Field's existing runway is in need of rehabilitation. Rohnerville is also in need of a runway extension and does not have fuel service, though it has trucked it in on occasion by prior arrangement. However, as Rohnerville is further away from Arcata and meets more critical minimums than Murray Field, it, Ukiah, and Lampson Field are considered higher priority facilities than is Murray Field.

### **Community General Aviation Airports**

There are sixteen Community General Aviation airports in the region, none of which meet all minimum standards for Community General Aviation airports. No facility has 24-hour on-field weather services or an instrument approach procedure. Little River meets all minimum standards except those mentioned above, and, as it is scheduled to receive an FAA certified approach procedure, an AWOS is considered a high priority project. Nearly all of the remaining airports share the same additional enhancement needs: Wider and longer runways, visual approach slope indicator equipment, instrument approach procedures and fuel availability. Notably, while Andy McBeth, Kneeland, and Ocean Ridge airports would all benefit from runway extensions, the feasibility of them is questionable at Andy McBeth (river) and Kneeland (ridge top airport). Kneeland's runway pavement is also in need of rehabilitation. Five Community GA airports are not listed in the FAA NPIAS: Andy McBeth, Eureka, Hyampom, Ocean Ridge, and Ward Field. Thus, these facilities are more dependent upon state funding sources, except for Ocean Ridge that, as a privately owned airport, isn't even eligible for state funds. Also of note, all five airports in Trinity County fall into the Community GA classification. Of these, Lonnie Pool-Weaverville is most centrally located and nearest to Highway 299, the primary surface route traversing the county. Unfortunately, it has a one-way runway and does not meet current federal airport design standards. The county is conducting site selection and environmental studies leading to the relocation of the Lonnie Pool-Weaverville Airport. A preferred site has been identified which benefits from clear approaches providing a two-way runway, while being located both convenient to users and away from existing development. Acquisition and construction has been delayed due to the need to perform a more comprehensive environmental study. Replacement of the current airport with the planned new facility is deemed a high priority. Trinity Center Airport has thirty based aircraft, the most of any airport in the county.

### **Limited Use Airports**

There are three Limited Use airports in the North Coast Region. Dinsmore Airport's only enhancement needs are a runway widening (12 feet) and improved weight bearing capacity. Hoopa Airport's runway weight bearing capacity is 2,500 pounds shy of the desired minimum. Gravelly Valley meets all minimums but is a little used airport with a gravel runway that for all practical purposes is limited to one-way operations due to its location near the base of a mountain ridge. However, its location in a remote area does make it well suited for emergency access. It is also a non-NPIAS facility.

**Enhancement Prioritization**

The airports listed in no particular order below are considered the region's highest priority facilities in terms of desired system capacity and safety enhancement. Enhancements at them would improve the regional and state system capacity and safety, and perhaps make them worthy of reclassification:

- Arcata
- Jack McNamara Field
- Lampson Field
- Rohnerville
- Little River
- Lonnie-Poole – Weaverville
- Ukiah

Non-NPIAS airports are also worthy of extra consideration at the state level since they are not eligible for federal funding.

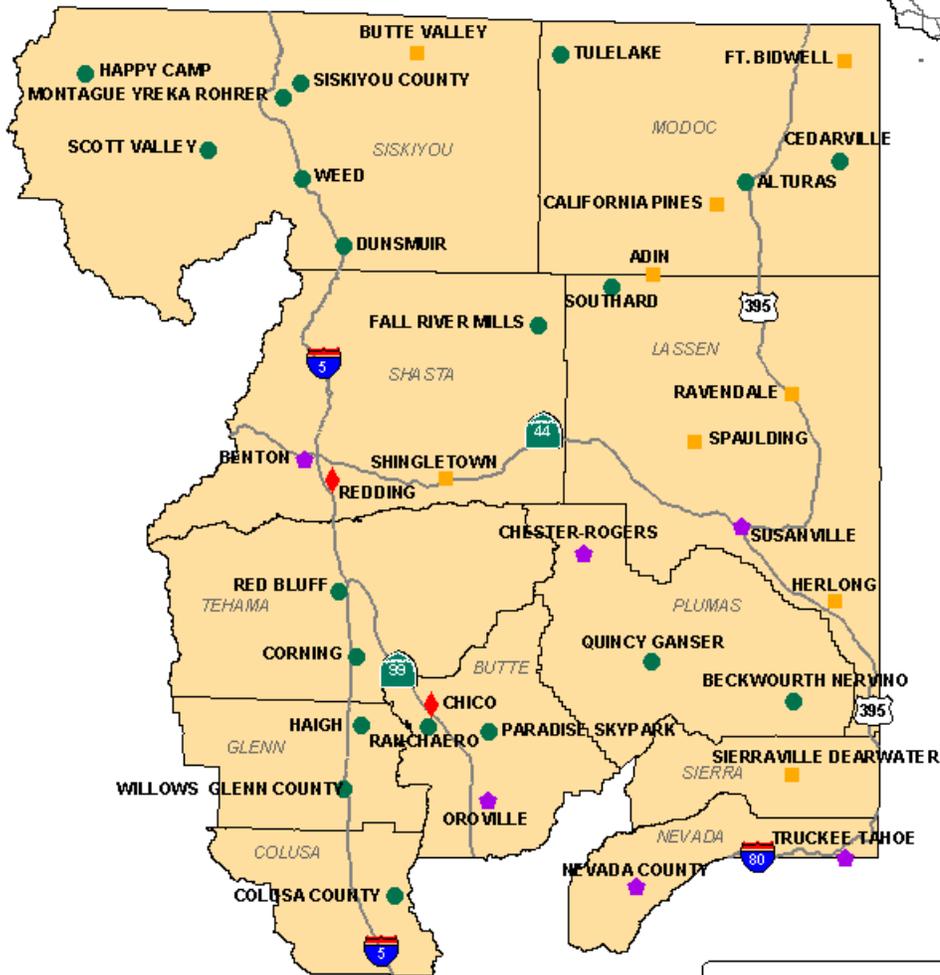
Table 3

REGION 1 NORTH COAST - Enhancement Needs and Estimated Costs														Total Estimated Costs For All Regional Projects: \$11.71 Million		
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILABLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE	
<b>PRIMARY COMMERCIAL SERVICE NON-HUB</b>				<b>GOOD</b>		<b>150</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>50K SW</b>	<b>YES</b>		<b>ILS</b>	
ARCATA	7000	5998	\$530,000	GOOD		150		VASI		100LLa		60000	YES		ILS	
JACK MCNAMARA FIELD	7000	5002	\$1,050,000	GOOD		150		VASI		100LLA		30000	YES		ILS	
<b>REGIONAL GENERAL AVIATION</b>				<b>GOOD</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>	
LAMPSON FIELD	5300	3600	\$450,000	GOOD		60	\$190,000	PAPI		100LL	\$50,000	30000	YES		GPS	
MURRAY FIELD	4900	3000	TBD - Enviro	FAIR	\$790,000	75		VASI		100LL	\$50,000	19000	NONE	\$100,000	GPS	
ROHNERVILLE	5000	4005	\$350,000	GOOD		100		VASI		NONE	\$150,000	30000	NONE	\$100,000	GPS	
UKIAH MUNICIPAL	5100	4415	\$360,000	GOOD		150		VASI		100LLA		28000	YES		LOC/LDA	
<b>COMMUNITY GENERAL AVIATION</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL or 80</b>		<b>12500</b>	<b>YES, with IAP or PT 135</b>		<b>GPS/VOR</b>	
<b>ANDY MCBETH</b>	3500	2400	\$290,000	GOOD		50	\$210,000	NONE	\$60,000	NONE	\$100,000	12000	NONE		NONE	
BOONVILLE	3500	3240	\$70,000	GOOD		50	\$280,000	NONE	\$60,000	NONE	\$100,000	30000	NONE		NONE	
<b>EUREKA MUNICIPAL</b>	3500	2700	\$210,000	FAIR		60	\$140,000	NONE	\$60,000	NONE	\$100,000	10000	NONE		NONE	
GARBERVILLE	3600	3050	\$140,000	FAIR		75		NONE	\$60,000	100LL		30000	NONE		NONE	
HAYFORK	4300	4115	\$50,000	GOOD		75		NONE	\$60,000	NONE	\$100,000	12500	NONE		NONE	
<b>HYAMPOM</b>	3900	2980	\$240,000	FAIR		60	\$160,000	NONE	\$60,000	NONE	\$100,000	12000	NONE		NONE	
KNEELAND	4500	2270	TBD - Terrain	POOR	\$400,000	50	\$200,000	NONE	\$60,000	NONE	\$100,000	13000	NONE		NONE	
LITTLE RIVER	3600	5249		FAIR		150		VASI		100LL		60000	NONE		On FAA List	
LONNIE POOLE FIELD-WEAVERVILLE	2350	2980		GOOD		50	\$260,000	PAPI		NONE	\$100,000	5000	NONE		NONE	
<b>OCEAN RIDGE</b>	3800	2500	\$340,000	FAIR		50	\$220,000	NONE	\$60,000	NONE	\$100,000	8000	NONE		NONE	
ROUND VALLEY	4000	3670	\$90,000	GOOD		55	\$260,000	NONE	\$60,000	NONE	\$100,000	30000	NONE		NONE	
RUTH	4500	3500	\$260,000	GOOD		50	\$310,000	NONE	\$60,000	NONE	\$100,000	12000	NONE		NONE	
SHELTER COVE	3500	3400	\$30,000	FAIR		75		NONE	\$60,000	NONE	\$100,000	20000	NONE		NONE	
TRINITY CENTER/ JAMES E. SWEET	4300	3215	\$280,000	GOOD		50	\$280,000	NONE	\$60,000	NONE	\$100,000	10000	NONE		NONE	
<b>WARD FIELD</b>	3500	2990	\$130,000	FAIR		50	\$260,000	NONE	\$60,000	NONE	\$100,000	12000	NONE		NONE	
WILLITS MUNICIPAL	4200	3000	\$320,000	GOOD		75		NONE	\$60,000	100LL		30000	NONE		NONE	
<b>LIMITED USE</b>				<b>FAIR</b>		<b>60</b>		<b>NONE</b>		<b>NONE</b>		<b>12500</b>	<b>NONE</b>		<b>NONE</b>	
DINSMORE	3150	2510	\$170,000	FAIR		48	\$110,000	NONE		NONE		Unknown	NONE		NONE	
<b>GRAVELLY VALLEY</b>	3000	4050		FAIR-grvl		200		NONE		NONE		12500	NONE		NONE	
HOOPA	2450	2325	\$30,000	FAIR		50	\$80,000	NONE		NONE		10000	NONE		NONE	
Estimated Regional Cost Totals (by project type )			\$5,390,000		\$1,190,000		\$2,960,000		\$420,000		\$1,550,000			\$200,000		

**LEGEND:** RED TEXT – DOES NOT MEET MINIMUM STANDARD      **BOLD ITALIC TEXT – NON-NPIAS FACILITY**      ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS  
SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS

California Aviation System Plan:  
Region 2 Public Use Airports

**NORTH STATE**



FUNCTIONAL CLASS	
★	PRIMARY COMMERCIAL HUB (0)
◆	PRIMARY COMMERCIAL NON-HUB (2)
▲	METROPOLITAN GA (0)
◆	REGIONAL GA (6)
●	COMMUNITY GA (20)
■	LIMITED USE GA (9)
⊛	JOINT USE (0)

## North State Region

The North State Region is located in the northeastern portion of California bounded by Oregon to the north and Nevada to the east. Each county within this region functions as its own Regional Transportation Planning Agency. The eleven counties in this region are:

Modoc	Sierra	Siskiyou
Nevada	Shasta	Lassen
Plumas	Tehama	Butte
Glenn	Colusa	

### **Regional Overview**

In 2000, the California Department of Finance estimated there were 680,500 residents in this region. By 2020, the population is estimated to increase by approximately 45% to 986,100 people.

Of the 36 public-use airports in this CASP region, Redding Municipal and Chico Municipal are the only airports in the region with scheduled passenger service. The *1999 CASP Forecast Element* stated there were 1,375 based aircraft and 696,369 general aviation (GA) annual aircraft operations within the region. By 2015, these figures are estimated to increase by 41.7% (to 1,947 based aircraft) and 39.8% (to 973,382 annual GA operations) respectively.

### **Airport Comparison by Functional Classification Category**

#### **Primary Commercial Service Hub Airports**

There are no Primary Commercial Hub Airports in this region. The closest Primary Commercial Hub airport to the region is Sacramento International. Refer to Section II for a discussion of all California Primary Commercial Service Hub Airports.

#### **Primary Commercial Service Non-Hub and Commercial Service Airports**

Redding Municipal and Chico Municipal are the North State Region's only Primary Commercial Service Non-Hub airports. As the region has no Primary Commercial Service Hub Airports, these two facilities play critical complementary roles in the region's air transportation network, providing the region its only direct access to national and international commercial air service. Redding Municipal meets all minimum standards while Chico's only enhancement need is for a runway extension of about 300 feet. In addition to commercial air service, both airports serve as forest fire air attack bases with significant numbers of based tanker aircraft.

#### **Metropolitan General Aviation Airports**

There are no Metropolitan General Aviation airports in the North Coast Region.

#### **Regional General Aviation Airports**

There are six Regional General Aviation Airports in the North State Region: Benton Field (Shasta Co.), Chester Rogers (Plumas Co.), Nevada County Airpark (Nevada Co.), Oroville Municipal (Butte Co.), Susanville Municipal (Lassen Co.), and Truckee-Tahoe (Nevada Co.). Most airports are in need of runway extensions, 24-hour weather services and instrument approach procedures. Thus, these types of projects are deemed to be of higher priority. The feasibility of extending Benton Field's runway is considered doubtful due to both terrain and encroaching development. Nevada County Airpark is due to have an AWOS installed

during 2004, and Truckee-Tahoe Airport is on track to have California's first Transponder Landing System in the next year or two, depending on delays in the process of installing and testing this new technology.

### **Community General Aviation Airports**

The majority of the region's airports, twenty, are Community General Aviation Airports. Red Bluff (Tehama Co.) is the only airport to meet all minimum standards. Most airports in this class need runway extensions, visual approach slope indicator equipment, 24-hour on-field weather services, and instrument approach procedures. The feasibility of extending runways at Dunsmuir, Happy Camp, and Paradise Skypark is considered doubtful due to space constraints. In several cases, airports are located in very close proximity to each other. To avoid redundancy and maximize system-wide utility and safety, priority is weighted in the following directions: Siskiyou County over Montague-Rorher, Alturas over Cedarville, Red Bluff over Corning, and Willows-Glenn County over Haigh. Priority is also considered Quincy-Ganser and Fall River Mills airports, the latter of which is in the process of extending its runway length to 5,000 feet. Also notable are the three non-NPIAS airports, Montague-Rohrer, Ranchoero, and Southard. Of these, Ranchoero and Southard share the need for runway extensions and widening and visual approach slope indicator systems. None of these three have instrument approach procedures. Fuel Service at Southard is also a needed enhancement.

### **Limited Use Airports**

The remaining nine airports are classified as Limited Use, and generally meet most minimum requirements except for runway length and width. California Pines is the only facility to meet all minimum requirements, though Butte Valley's only in need to do so is a slightly wider runway (10 feet). Of the remaining seven airports needing both longer and wider runways, the feasibility and demand for such significant enhancements as identified at Ravendale, Shingletown and Sierraville–Dearwater is questioned. Of potential significance, data research did not indicate a weight limit for Ravendale or Fort Bidwell (a gravel strip). All airports in this category except Butte Valley are Non-NPIAS facilities. On another important note, the state permit for Shingletown Airport in Shasta County is currently suspended. Should its permit be reactivated, its will be considered for priority status. Additionally, two Limited Use airports in the North State Region have recently been considered for closure, Fort Bidwell and California Pines. Obviously, investment should only be prioritized for facilities whose sponsors are committed to keeping them open and in compliance with the conditions required under their state permits.

**Enhancement Prioritization**

The airports below are considered the region's highest priority facilities in terms of system capacity and safety enhancement. Enhancements at these airports would improve regional and state system capacity and safety, and perhaps make them worthy of reclassification:

- Redding Municipal
- Chico Municipal
- Truckee-Tahoe
- Siskiyou County
- Alturas
- Red Bluff
- Willows – Glenn County
- Fall River Mills
- Quincy-Ganser
- Benton Field
- Alturas
- Spaulding
- Butte Valley

All Non-NPIAS airports are also worthy of extra consideration at the state level since they are not eligible for federal funding.

Table 4

REGION 2 NORTH STATE - Enhancement Needs and Estimated Costs														Total Estimated Costs For All Regional Projects: \$16.42 Million	
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI/PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILABLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE
<b>PRIMARY COMMERCIAL SERVICE NON-HUB</b>				<b>GOOD</b>		<b>150</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>50K SW</b>	<b>YES</b>		<b>ILS</b>
CHICO MUNICIPAL	7000	<b>6724</b>	\$140,000	GOOD		150		PAPI		100 100LLA		63000	YES		ILS
REDDING MUNICIPAL	7000	7003		GOOD		150		PAPI		100LLA		98000	YES		ILS
<b>REGIONAL GENERAL AVIATION</b>				<b>GOOD</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
BENTON	4800	<b>2420</b>	TBD- Terrain	GOOD		80		PAPI		100LLA		12500	NONE	\$100,000	NONE
CHESTER-ROGERS FIELD	6100	<b>5000</b>	\$390,000	GOOD		100		PAPI		100LLA		60000	NONE	\$100,000	NONE
NEVADA COUNTY AIRPARK	5600	<b>4350</b>	\$330,000	GOOD		75		VASI		100LLA MOGAS		30000	NONE	\$100,000	GPS
OROVILLE MUNICIPAL	4800	6000		GOOD		100		PAPI		100LL80 A		60000	YES		GPS
SUSANVILLE MUNICIPAL	6000	<b>4050</b>	\$510,000	GOOD		75		VASI		100LL80 A		15000	NONE	\$100,000	NONE
TRUCKEE-TAHOE	6500	7000		GOOD		100		NONE	\$60,000	100LL80 A1+		60000	YES		GPS
<b>COMMUNITY GENERAL AVIATION</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL or 80</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
ALTURAS MUNICIPAL	5600	<b>4301</b>	\$340,000	FAIR	\$540,000	50	\$380,000	VASI		100LLA		12000	YES		GPS
BECKWOURTH NERVINO	6000	<b>4660</b>	\$350,000	POOR	\$1,220,000	75		VASI		100LL		12000	NONE		NONE
CEDARVILLE	5800	<b>4415</b>	\$360,000	GOOD		50	\$390,000	NONE	\$60,000	100LL		12500	NONE		NONE
COLUSA COUNTY	3700	<b>3000</b>	\$180,000	GOOD		60	\$160,000	NONE	\$60,000	100LL		10000	NONE	\$100,000	GPS
CORNING MUNICIPAL	3800	<b>2700</b>	\$290,000	GOOD		50	\$240,000	NONE	\$60,000	100LL		12500	NONE		NONE
DUNSMUIR MUNI-MOTT	5000	<b>2700</b>	TBD - Terrain	GOOD		60	\$140,000	NONE	\$60,000	100LL		12500	NONE		NONE
FALL RIVER MILLS	5000	<b>3600</b>	\$370,000	GOOD		75		NONE	\$60,000	100LLA		Unknown	NONE		NONE
HAIGH FIELD	3800	4500		GOOD		60	\$240,000	PAPI		100LL80		30000	NONE	\$100,000	GPS
HAPPY CAMP	4100	<b>3000</b>	TBD - Terrain	GOOD		50	\$260,000	NONE	\$60,000	NONE	\$100,000	30000	NONE		NONE
MONTAGUE-YREKA-ROHRER FIELD	4500	<b>3360</b>	\$300,000	GOOD		50	\$290,000	VASI		100LL		12500	NONE		NONE
PARADISE SKYPARK	4100	<b>2700</b>	TBD - Terrain	GOOD		40	\$90,000	VASI		100LL80		Unknown	NONE		NONE
QUINCY GANSNER	5300	<b>4100</b>	\$320,000	GOOD		60	\$220,000	VASI		100LL		12500	NONE		NONE
RANCHAERO	3800	<b>2280</b>	\$400,000	FAIR	\$240,000	30	\$20,000	NONE	\$60,000	100LL		Unknown	NONE		NONE
RED BLUFF MUNICIPAL	3900	5684		GOOD		100		VASI		100LL80 A		30000	YES		GPS
SCOTT VALLEY	4700	<b>3700</b>	\$260,000	GOOD		50	\$320,000	NONE	\$60,000	100LL		12500	NONE		NONE
SISKIYOU COUNTY	4700	7484		GOOD		150		NONE	\$60,000	100LLA		60000	YES		GPS
SOUTHARD FIELD	5400	<b>2980</b>	\$640,000	FAIR		35	\$160,000	NONE	\$60,000	NONE	\$100,000	12500	NONE		NONE
TULELAKE	5400	<b>3577</b>	\$480,000	FAIR		44	\$80,000	NONE	\$60,000	100LL		12500	NONE		NONE
WEED	4800	5000		GOOD		60	\$260,000	VASI		100LL		12500	NONE		NONE
WILLOWS - GLENN COUNTY	3800	4506		GOOD		100		VASI		100LL		38000	NONE	\$100,000	GPS

LEGEND: RED TEXT – DOES NOT MEET MINIMUM STANDARD  
SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS

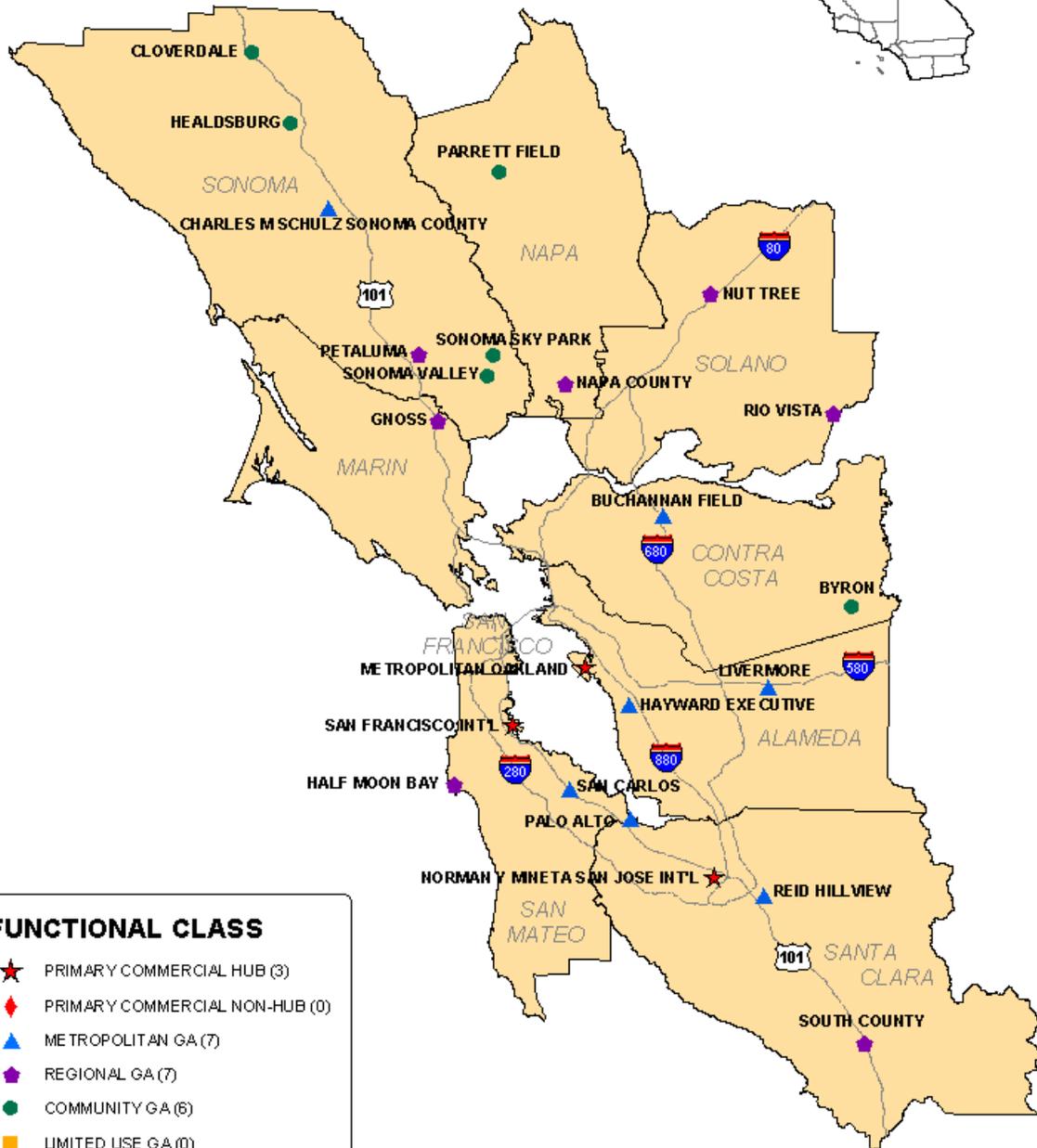
BOLD ITALIC TEXT – NON-NPIAS FACILITY

ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS



California Aviation System Plan:  
Region 3 Public Use Non-Hub Airports

**BAY AREA**



## Bay Area Region

The Bay Area Region is composed of nine counties:

Sonoma	San Mateo	Napa
Santa Clara	Solano	Alameda
Contra Costa	Marin	San Francisco

The Metropolitan Transportation Commission (MTC) functions as the Regional Transportation Planning Agency for the entire Bay Area Region.

### **Regional Overview**

In 2000, the California Department of Finance estimated there were 6,885,800 residents in this region. By 2020, the population is estimated to increase by approximately 21% to 8,338,100 people.

Of the 23 public-use airports in the Bay Area region, The *1999 CASP Forecast Element* stated there were 6,372 based aircraft and 2,405,327 general aviation (GA) annual aircraft operations within the region. By 2015, based aircraft were forecast to decline by 1.7% (to 6,265) while annual GA operations were forecast to increase by 3.5% (to 2,730,994).

### **Airport Comparison by Functional Classification Category**

#### **Primary Commercial Service Hub Airports**

There are three Primary Commercial Service Hub airports in the Bay Area region: San Francisco International, Metropolitan Oakland International, and Norman Y. Mineta San Jose International airports. Refer to Section II for a discussion of all California Primary Commercial Service Hub airports.

#### **Primary Commercial Service Non-Hub and Commercial Service Airports**

Charles M. Schulz Sonoma County Airport is the only airport classified as Primary Commercial Service Non-Hub or Commercial Service in the Bay Area region. However, the airport currently has no scheduled commercial service. It currently meets all minimum standards except for runway length. While an extension to meet its minimum standard length of 7,000 foot is desirable, the feasibility of such a project is questioned due to space and environmental limitations. Though still challenging, a more realistic goal would be an extension to 6,000 feet, as per the Airport Master Plan currently under development. This will enable the airport to better accommodate the 50-70 seat regional jets now favored by regional airlines. That this extension is key to restoring commercial service at this facility makes Sonoma County a priority airport.

#### **Metropolitan General Aviation Airports**

There are six Metropolitan General Aviation airports in the Bay Area Region. Buchanan Field, Hayward Executive, and Livermore Municipal Airports meet all of this classification's minimum standards. The remaining three airports, Palo Alto, Reid-Hillview, and San Carlos, have numerous enhancement needs, specifically inadequate runway lengths. Extensions at these facilities are not considered feasible due to significant geographical and/or environmental constraints and/or continuing encroachment of incompatible land uses such as residential and commercial development. However, as Palo Alto and San Carlos do have instrument approach procedures, AWOS installations are still considered priority projects. Reid-Hillview

would benefit from both AWOS and a new instrument approach procedure. Though identified as a need, Jet A fuel availability at Reid-Hillview is considered less an immediate priority due to the relative incompatibility of its runway lengths with the performance minimums for the majority of general aviation jet aircraft. In the coming years, as new light jets enter service, this enhancement may become a higher priority.

### **Regional General Aviation Airports**

There are also seven Regional General Aviation airports in the Bay Area Region. Only Nut Tree Airport meets all if this classification's minimum standards, though Gness Field (runway extension) and Napa County Airport (pavement rehabilitation) come close. Napa County has been slated to receive a FAA certified and funded ILS instrument approach procedure. Of the remaining four airports: Half Moon Bay, Petaluma, Rio Vista, and South County, the most common potential enhancement areas are runway extensions and 24-hour on-field weather services. As all airports have instrument approach procedures, projects to provide 24-hour on-field weather service are considered high priority.

### **Community General Aviation Airports**

There are six airports classified as Community General Aviation: Byron, Cloverdale, Healdsburg, Parrett Field, Sonoma SkyPark, and Sonoma Valley. None of these airports meet minimum standards, and the needed enhancements vary. Byron is the lone airport in this category to have an instrument approach procedure, and just recently had AWOS installed and certified by the FAA. The other five Community General Aviation Airports all need runway extensions. Cloverdale recently had an instrument approach procedure published by FAA, but has no AWOS.

### **Limited Use Airports**

There are no Limited Use airports in the Bay Area Region.

### **Enhancement Need Prioritization**

The airports below are considered the region's highest priority facilities in terms of system capacity and safety enhancement. Enhancements to the following airports could improve regional and state system capacity and safety, and perhaps make them worthy of reclassification:

- Sonoma County
- Napa County
- Half Moon Bay
- Byron
- Cloverdale
- Parrett Field
- Buchanan Field
- Hayward Executive
- Livermore Municipal
- Gness Field

All Non-NPIAS airports are also worthy of extra consideration at the state level since they are not eligible for federal funding.

Table 5

REGION 3 BAY AREA - Enhancement Needs and Estimated Costs														Total Estimated Costs For All Regional Projects: \$10.76 Million		
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI/PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILABLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE	
<b>PRIMARY COMMERCIAL SERVICE NON-HUB</b>				<b>GOOD</b>		<b>150</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>50K SW</b>	<b>YES</b>		<b>ILS</b>	
CHARLES M SCHULZ / SONOMA COUNTY	6000	5115		GOOD		150		VASI		100LLA		35000	AWOS		ILS	
<b>METROPOLITAN GENERAL AVIATION</b>				<b>GOOD</b>		<b>100</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>50K SW</b>	<b>YES</b>		<b>GPS/VOR</b>	
BUCHANAN FIELD	5000	5010		GOOD		150		VASI		100LLA		60000	AWOS		LOC/LDA	
HAYWARD EXECUTIVE	5000	5024		GOOD		150		VASI		100LLA		30000	AWOS		LOC/LDA	
LIVERMORE MUNICIPAL	5000	5255		GOOD		100		PAPI		100LLA		45000	AWOS		ILS	
PALO ALTO	5000	2443	TBD-Enviro	FAIR	\$420,000	68	\$270,000	NONE	\$60,000	100LLA		Unknown	NONE	\$100,000	GPS	
REID HILLVIEW	5000	3101	TBD-Land	GOOD		75	\$27,000	VASI		100LL80	\$50,000	17000	NONE	\$100,000	NONE	
SAN CARLOS	5000	2600	TBD-Enviro	GOOD		75	\$230,000	VASI		100LLA		12500	NONE	\$100,000	GPS	
SONOMA COUNTY	5000	5115		GOOD		150		VASI		100LLA		35000	AWOS		ILS	
<b>REGIONAL GENERAL AVIATION</b>				<b>GOOD</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>	
GNOSS FIELD	4600	3300	\$340,000	GOOD		75		VASI		100LLA		26000	AWOS		GPS	
HALF MOON BAY	4600	5000		FAIR	\$1,880,000	150		VASI		100LL	\$50,000	30000	NONE	\$100,000	GPS	
NAPA COUNTY	4600	5931		FAIR	\$2,220,000	150		PAPI		100LLA		30000	AWOS		LOC/LDA	
NUT TREE	4600	4700		GOOD		75		VASI		100LLA		30000	AWOS		GPS	
PETALUMA MUNICIPAL	4600	3600	\$260,000	FAIR	\$680,000	75		PAPI		100LLA MOGAS		12500	NONE	\$100,000	GPS	
RIO VISTA MUNICIPAL	4600	4200	\$110,000	GOOD		60	\$220,000	PAPI		100LL80	\$50,000	30000	NONE	\$100,000	GPS	
SOUTH COUNTY	4600	3100	\$390,000	GOOD		75		PAPI		100LL	\$50,000	12500	NONE	\$100,000	GPS	
<b>COMMUNITY GENERAL AVIATION</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL or 80</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>	
BYRON	3500	4500		GOOD		100		NONE	\$60,000	NONE	\$50,000	Unknown	AWOS		GPS	
CLOVERDALE MUNICIPAL	3500	3155	\$70,000	GOOD		60	\$170,000	VASI		NONE	\$50,000	12000	NONE	\$100,000	GPS	
HEALDSBURG MUNICIPAL	3500	2707	\$170,000	GOOD		60	\$140,000	NONE	\$60,000	100 80		12500	NONE		NONE	
PARRETT FIELD	4200	3217	\$210,000	FAIR		50	\$280,000	VASI		100LL		Unknown	NONE		NONE	
<b>SONOMA SKYPARK</b>	3500	2480	\$210,000	FAIR		40	\$260,000	NONE	\$60,000	100LLMOGAS		8000	NONE		NONE	
<b>SONOMA VALLEY</b>	3500	2700	\$170,000	GOOD		45	\$280,000	NONE	\$60,000	100LL		12500	NONE		NONE	
Estimated Regional Cost Totals (by project type)			\$2,140,000		\$5,200,000		\$2,120,000		\$300,000		\$300,000			\$700,000		

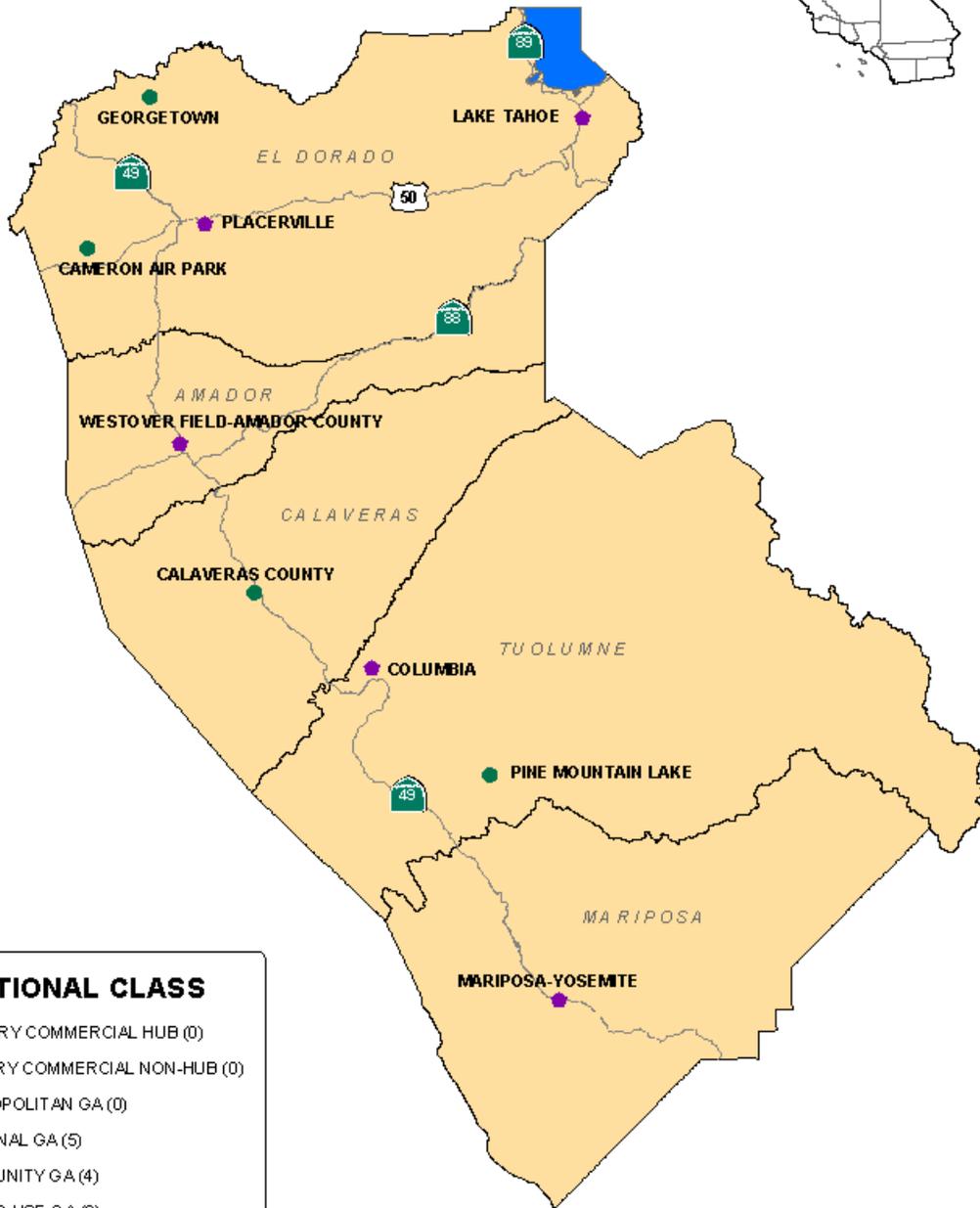
LEGEND: RED TEXT – DOES NOT MEET MINIMUM STANDARD  
SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS

**BOLD ITALIC TEXT – NON-NPIAS FACILITY**

ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS

California Aviation System Plan:  
Region 4 Public Use Airports

**SIERRA**



**FUNCTIONAL CLASS**

- ★ PRIMARY COMMERCIAL HUB (0)
- ◆ PRIMARY COMMERCIAL NON-HUB (0)
- ▲ METROPOLITAN GA (0)
- ◆ REGIONAL GA (5)
- COMMUNITY GA (4)
- LIMITED USE GA (0)
- ⊕ JOINT USE (0)

## Sierra Region

The Sierra Region is west of the Sierra Nevada Mountain Range and east of the Sacramento Valley. It includes the following counties:

El Dorado	Amador	Calaveras
Toulumne	Mariposa	

These counties individually serve as their own respective Regional Transportation Planning Agencies.

### **Regional Overview**

The population of the region was 307,200 in 2000, and is estimated to increase 49% to 457,900 in 2020 according to the California Department of Finance.

There are nine public-use airports in the Sierra Region. No airport in the region has scheduled passenger service. Most of the air passengers in the region travel to Fresno-Yosemite International, Stockton Metropolitan, Sacramento International, or Reno-Tahoe International Airports. The *1999 CASP Forecast Element* stated that there were 964 based aircraft and 365,088 general aviation (GA) annual aircraft operations within the region. By 2015, these figures were forecasted to increase by 51.0% (to 1,456 based aircraft) and 48.3% (to 541,555 annual GA operations) respectively.

With the exception of fast growing portions of El Dorado County, this region is primarily rural with a recreational and diminishing lumber based economy.

### **Airport Comparison by Functional Classification Category**

#### **Primary Commercial Service Hub Airports**

There are no Commercial Primary Hub airports in this region. The closest Commercial Service Primary Hub airports to the region are Fresno Yosemite International, Sacramento International and Reno-Tahoe International. Refer to Section II for a discussion of all California Commercial Service Primary Hub airports.

#### **Primary Commercial Service Non-Hub and Commercial Airports**

Lake Tahoe Airports is the only Primary Commercial Service Non-Hub or Commercial Service airport in the Sierra Region, but does not currently have any commercial service. Lake Tahoe meets all desired minimums for a Primary Commercial Service Non-Hub airport except for a precision instrument approach procedure. Though it does not currently have any scheduled commercial passenger service, the capacity and convenience it provides the Lake Tahoe region, along with the Truckee-Tahoe Airport, make preservation and improvement of this facility a regional priority. The airport currently faces considerable environmental challenges which must first be addressed before additional infrastructure investment or restoration of commercial service can be considered. Stockton Metropolitan and Modesto City-County Airports are the closest alternatives in this category.

**Metropolitan General Aviation Airports**

There are no Metropolitan General Aviation airports in the Sierra Region.

**Regional General Aviation Airports**

Four of the nine public use airports are Regional General Aviation airports: Columbia, Mariposa-Yosemite, Placerville, and Westover Field. All four airports would benefit from runway extensions, the feasibility of extensions at Mariposa and Placerville is doubtful due to terrain considerations. A runway extension is all Columbia would need to meet all minimum standards for a Regional GA airport. It falls short of Metropolitan GA minimums only by a few hundred feet of runway length and 25 feet of runway width. It serves as a fire attack base for CDF fire fighting aircraft. With only a single Primary Commercial Service Non-hub airport, upgrading these airports as otherwise described is worthy of consideration. As Placerville has an instrument approach procedure, its need for 24-hour on-field weather service is a high priority item. Westover Field's primary enhancement needs are for a 15-foot runway widening and jet fuel availability as well. Mariposa-Yosemite is the only Regional GA airport in the region without an instrument approach procedure. It would benefit from jet fuel availability and 24-hour on-field weather services. Mariposa-Yosemite's proximity to Yosemite National Park and its role as a fire-fighting helicopter attack base also make it's upgrade to minimum standards desirable.

**Community General Aviation Airports**

There are four Community General Aviation airports in the region: Calaveras County, Cameron Air Park (El Dorado Co.), Georgetown (El Dorado Co.), and Pine Mountain Lake (Tuolumne Co.). With the exception of Cameron Air Park, the other three airports in this classification are shown as needing runway extensions, though the feasibility of extensions at Georgetown and Pine Mountain Lake are considered doubtful. However, all four airports in this classification would benefit from wider runways. Georgetown and Cameron Air Park lack any instrument approach procedures, though Cameron Air Park has applied to FAA for a GPS approach to be developed. Additionally Georgetown lacks visual approach slope indicator equipment while Cameron Air Park's runway weight limit is questioned.

**Limited Use Airports**

There are no Limited Use airports in the Sierra region.

**Enhancement Need Prioritization**

The airports below are considered the region's highest priority facilities in terms of capacity and safety enhancement. Enhancements to the following airports could improve regional and state system capacity and safety, and perhaps make them worthy of reclassification:

- Columbia
- Mariposa-Yosemite
- Placerville
- Westover-Field – Amador County
- Lake Tahoe
- Calaveras County

All airports in the Sierra Region are listed in the FAA NPIAS and are therefore eligible for federal funding of airport projects.

Table 6

REGION 4 SIERRA - Enhancement Needs and Estimated Costs										Total Estimated Costs For All Regional Projects: \$2.62 Million					
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILABLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE
<b>PRIMARY COMMERCIAL NON-HUB</b>				<b>GOOD</b>		<b>150</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>50k SW</b>	<b>YES</b>		<b>ILS</b>
LAKE TAHOE	7300	8544		GOOD		150		PAPI		100LLA		70000	YES		GPS
<b>REGIONAL GENERAL AVIATION</b>				<b>GOOD</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
COLUMBIA	5100	4670	\$110,000	GOOD		75		VASI		100LLA		30000	YES		GPS
MARIPOSA - YOSEMITE	5200	3310	TBD-Terrain	GOOD		50	\$290,000	VASI		100LL80	\$50,000	12500	NONE	\$100,000	NONE
PLACERVILLE	5300	4200	TBD-Terrain	GOOD		75		VASI		100LL80 A		26000	NONE	\$100,000	GPS
WESTOVER FIELD AMADOR CO. ARPT	5000	3411	\$420,000	GOOD		60	\$180,000	VASI		100LL	\$50,000	12500	YES		GPS
<b>COMMUNITY GENERAL AVIATION</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL or 80</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
CALAVERAS CO./MAURY RASMUSSEN	4100	3603	\$130,000	GOOD		60	\$190,000	VASI		100LL80		12500	YES		GPS
CAMERON AIR PARK	4060	4060		GOOD		50	\$360,000	PAPI		100LL		0	NONE		NONE
GEORGETOWN	4800	2980	TBD-Terrain	GOOD		60	\$160,000	NONE	\$60,000	100LL		22000	NONE		NONE
PINE MOUNTAIN LAKE	4900	3625	TBD-Terrain	GOOD		50	\$320,000	VASI		100LL80		12500	NONE	\$100,000	GPS
Estimated Regional Cost Totals (by project type )			\$660,000		\$0		\$1,500,000		\$60,000		\$100,000			\$300,000	
<b>LEGEND:</b> RED TEXT – DOES NOT MEET MINIMUM STANDARD <b>BOLD ITALIC TEXT – NON-NPIAS FACILITY</b> ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS															

California Aviation System Plan:  
Region 5 Public Use Airports

**CENTRAL COAST**



## Central Coast Region

The Central Coast Region of the California Aviation System Plan consists of five counties located on or near the central coast of California. The five counties in this region are:

Monterey	Santa Barbara	San Benito
Santa Cruz	San Luis Obispo	

### **Regional Overview**

In 2000, the California Department of Finance estimated there were 1,378,500 people in this region. By 2020, the population is estimated to increase by approximately 44% to 1,991,700 people.

Of the 14 public-use airports in the Central Coast region, Monterey Peninsula, San Luis Obispo, Santa Barbara Municipal, and Santa Maria all have scheduled passenger service. The *1999 CASP Forecast Element* stated there were 1,234 based aircraft and 424,663 general aviation (GA) annual aircraft operations within the region. By 2015, these figures are forecast to increase by 48.6% (to 1,834 based aircraft) and 44.5% (to 613,680 annual GA operation) respectively.

### **Airport Comparison by Functional Classification Category**

#### **Primary Commercial Service Hub Airports**

Santa Barbara Municipal is the region's only Primary Commercial Service Hub airport. Refer to Section II for a discussion of all California Primary Commercial Service Hub airports.

#### **Primary Commercial Non-Hub and Commercial Airports**

The region has three Primary Commercial Service Non-Hub and Commercial Service airports: Monterey Peninsula (Monterey Co.), San Luis Obispo (San Luis Obispo Co.), and Santa Maria (Santa Barbara Co.). Monterey is the only airport that meets all Primary Commercial Service Non-Hub minimum standards. The only needed enhancements at both San Luis Obispo and Santa Maria airports are runway extensions. While Santa Maria's longest runway is just a few hundred feet short of the desired standard, San Luis Obispo's runway needs an additional 2,301 feet, or nearly 50% of its current length. This extension will require overcoming significant environmental obstacles. While Santa Barbara Municipal is the region's only Primary Commercial Service Hub airport, competition is emerging between San Luis Obispo and Paso Robles airports to service the air transportation demand originating from northern San Luis Obispo County and southern and central Monterey County. San Luis Obispo is the county's only airport that currently has commercial service, but its previously discussed runway length (or feasibility of a runway extension) may make accommodating larger air carrier aircraft difficult. Paso Robles has a passenger terminal, and the idea of improving this facility to accommodate passenger service has attracted attention locally as it does have adequate runway length to accommodate regional jet aircraft. It previously had commercial service for a brief time.

#### **Metropolitan General Aviation Airports**

There are no Metropolitan General Aviation airports in the Central Coast Region.

**Regional General Aviation Airports**

There are four Regional General Aviation airports in the Central Coast Region: Hollister, Paso Robles, Salinas, and Watsonville. At Hollister, 24-hour on-field weather services is the only enhancement needed to meet Regional GA airport minimum standards, as the other three facilities currently do. In fact, all four would meet Metropolitan GA minimums with the above referenced enhancement and a 100-foot runway extension at Watsonville. Achieving Primary Commercial Service Hub airport minimums at Paso Robles would require a 1,000-foot runway length extension, runway pavement upgrade, and a precision instrument approach. It should be noted that Watsonville Airport is also on the FAA's list of airports to receive an Instrument Landing System, though no target date for installation has been assigned. Preserving the option to upgrade Paso Robles to Primary Commercial Service Non-Hub standards is desirable.

**Community General Aviation Airports**

There are four Community General Aviation airports in the region: Frazier Lake, Lompoc, Mesa Del Rey, and Santa Ynez. Lompoc is the only facility to meet all Community GA minimum standards. Mesa Del Rey needs only 24-hour on-field weather services to meet Community General Aviation minimum standards once the FAA establishes a new instrument approach procedure for Mesa Del Rey, now planned for sometime later than 2004. A nearly 1,000-foot runway extension is identified for Santa Ynez. Also significant is the need for 24-hour on-field weather services, especially since Santa Ynez does have a published instrument approach procedure.

The remaining Community General Aviation airport, Frazier Lake, has numerous enhancements necessary to meet Community General Aviation Airport minimum standards. As a privately owned, public use airport it is not included in the FAA's NPIAS and therefore not eligible for federal funding. Nor is it eligible for California Aid to Airports Program (CAAP) funding. With one turf runway and one water runway, upgrades there are not considered a high priority from a state system perspective. Significant owner and local support and user demand will drive upgrades at this facility.

**Limited Use Airports**

There are four Limited Use airports in the Central Coast Region: Marina, New Cuyama, Oceano, and Carmel Valley Vintage Airpark. Marina meets all of the minimum standards for a Limited Use airport. Marina will miss meeting Regional GA airport minimums by only 200 feet of runway length once its AWOS system is installed and operational, so reclassification is a consideration. Oceano County Airport would benefit from wider runway. New Cuyama's pavement is poor and the runway weight limit is insufficient. Important to consider also is that the state permit for Carmel Valley Vintage Airpark in Monterey County is currently suspended. Should its permit be reactivated, it will be considered for priority status. However, investment should only be prioritized for facilities whose sponsors are committed to keeping them open and in compliance with the conditions required under their state permits.

**Enhancement Need Prioritization**

The airports below are considered the region's highest priority facilities in terms of system capacity and safety enhancement. Enhancements at the following airports would improve regional and state system capacity and safety, and perhaps make them worthy of reclassification:

Hollister  
Watsonville  
Mesa Del Rey  
Santa Ynez  
Paso Robles  
Salinas  
Lompoc  
Marina

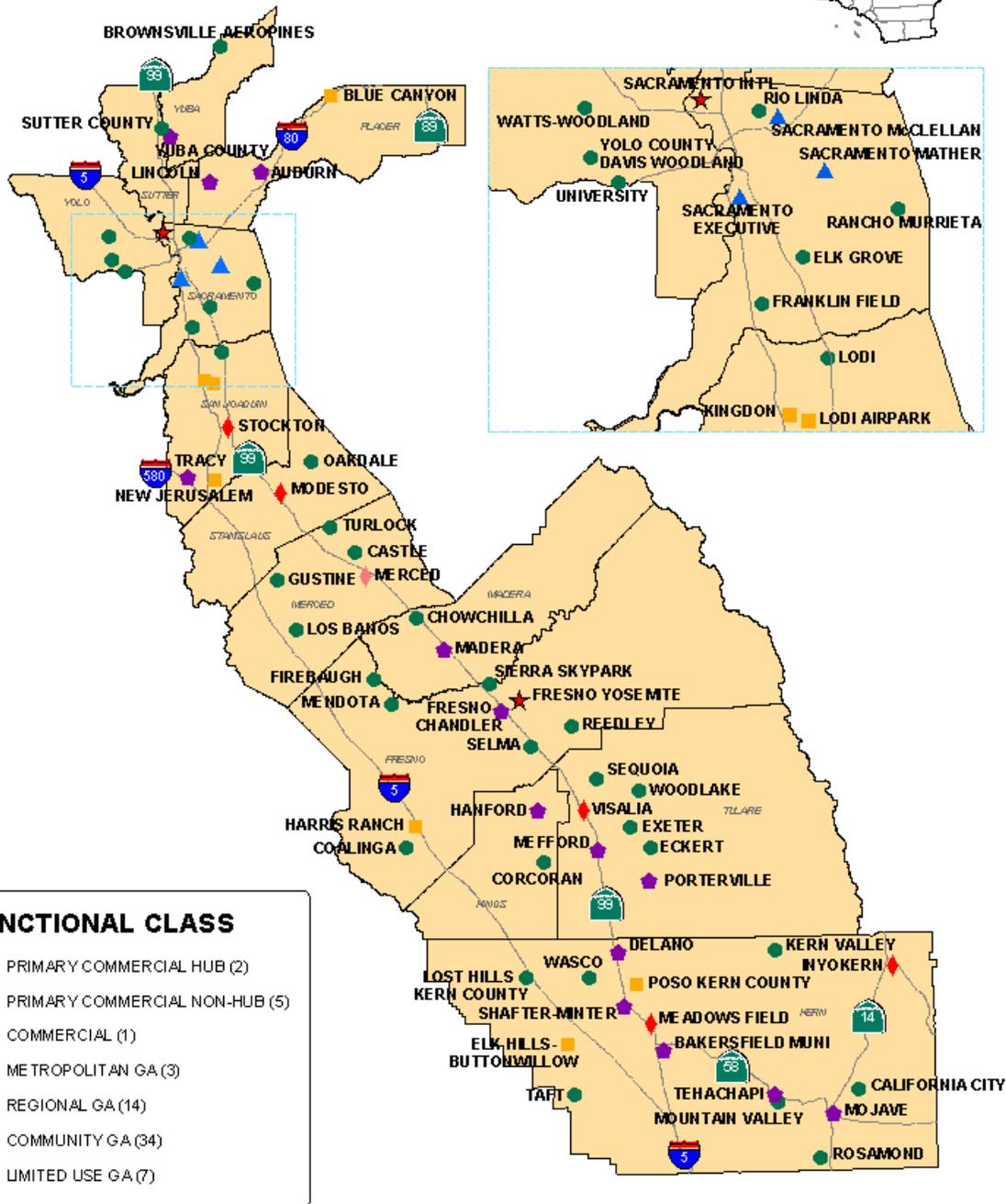
All Non-NPIAS airports are also worthy of extra consideration at the state level since they are not eligible for federal funding.

Table 7

REGION 5 CENTRAL COAST - Enhancement Needs and Estimated Costs										Total Estimated Costs For All Regional Projects: \$5.37 Million					
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI/PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILABLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE
<b>PRIMARY COMMERCIAL SERVICE NON-HUB</b>				<b>GOOD</b>		<b>150</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>50K SW</b>	<b>YES</b>		<b>ILS</b>
MONTEREY PENINSULA	7000	7598		GOOD		150		VASI		100 A		100000	YES		ILS
SAN LUIS OBISPO COUNTY	7000	4799	\$1,160,000	GOOD		150		VASI		100 100LLA		50000	YES		ILS
SANTA MARIA PUBLIC	7000	6300	\$370,000	GOOD		150		VASI		100LL80 A		75000	YES		ILS
<b>REGIONAL GENERAL AVIATION</b>				<b>GOOD</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
HOLLISTER MUNICIPAL	4600	6350		GOOD		100		PAPI		100LLA		30000	NONE	\$100,000	GPS
PASO ROBLES MUNICIPAL	4700	6009		FAIR	\$2,250,000	150		PAPI		100LLA		60000	YES		GPS
SALINAS MUNICIPAL	4600	6000		GOOD		150		VASI		100LLA		25000	YES		ILS
WATSONVILLE MUNICIPAL	4600	4501	\$50,000	GOOD		150		VASI		100LL80 A		81000	YES		LOC/LDA
<b>COMMUNITY GENERAL AVIATION</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL or 80</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
<b>FRAZIER LAKE AIRPARK</b>	3500	2500	\$70,000	GOOD-turf		100		NONE	\$60,000	NONE	\$150,000	Unknown	NONE	\$100,000	NONE
LOMPOC	3500	3600		FAIR		100		VASI		100LL		17000	YES		GPS
MESA DEL REY	3600	4485		GOOD		100		VASI		100LLA		12000	NONE	\$100,000	NONE
SANTA YNEZ	3800	2804	\$260,000	GOOD		75		VASI		100LLA		12500	NONE	\$100,000	GPS
<b>LIMITED USE</b>				<b>FAIR</b>		<b>60</b>		<b>NONE</b>		<b>100LL or 80</b>		<b>12500</b>	<b>NONE</b>		<b>NONE</b>
<b>CARMEL VALLEY VINTAGE AIRFIELD</b>	2500	1820	\$140,000	POOR	\$220,000	35	160000	NONE		NONE		Unknown	NONE		NONE
MARINA MUNICIPAL	2400	3000		FAIR		75		NONE		100LL		20000	NONE		GPS
<b>NEW CUYAMA</b>	3200	3940		GOOD		60		NONE		NONE		Unknown	NONE		NONE
OCEANO COUNTY	2325	2325		FAIR		50	\$80,000	NONE		100LL MOGAS		12500	NONE		NONE
Estimated Regional Cost Totals (by project type )			\$2,050,000		\$2,470,000		\$240,000		\$60,000		\$150,000			\$400,000	
<b>LEGEND:</b> RED TEXT – DOES NOT MEET MINIMUM STANDARD <b>BOLD ITALIC TEXT – NON-NPIAS FACILITY</b> ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS															

California Aviation System Plan:  
Region 6 Public Use Airports

**CENTRAL CALIFORNIA**



## Central California Region

The Central California Region stretches from the Tehachapi Mountains in the south to the Sacramento River in the north. The eastern boundary is the Sierra Nevada Range, and the western boundary is the Pacific Coast Range. The 13 counties, which make up this region, include:

Fresno	San Joaquin	Kern
Stanislaus	Kings	Sutter
Madera	Tulare	Merced
Yolo	Placer	Yuba
Sacramento		

The Sacramento Area Council of Governments is the Regional Transportation Planning Agency (RTPA) for Sacramento, Sutter, Yuba, and Yolo Counties. The other counties in the region maintain their own county-based RTPAs.

### **Regional Overview**

In 2000, the California Department of Finance estimated there were 5,180,500 residents in this region. By 2020, the population is estimated to increase 48.9% to 7,692,800 people.

There are a total of 64 public-use airports other than Primary Commercial Service Hubs in the Central California Region. The region has two Primary Commercial Service Hub airports: Sacramento International and Fresno Yosemite International. In addition to those facilities, the following six airports have scheduled passenger service: Meadows Field, Modesto City-County, Merced Municipal, Stockton, Visalia Municipal, and Inyokern. The *1999 CASP Forecast Element* stated there were 5,318 based aircraft and 2,117,717 general aviation (GA) annual aircraft operations within the region. By 2015, these figures are estimated to increase by 49.5% (to 7,950 based aircraft) and 48.0% (to 3,134,358 annual GA operations) respectively.

### **Airport Comparison by Functional Classification Category**

#### **Primary Commercial Service Hub Airports**

There are two Primary Commercial Hub airports in this region: Sacramento International and Fresno Yosemite International Airports. Refer to Section II for a discussion of all California Primary Commercial Service Hub airports.

#### **Primary Commercial Service Non-Hub and Commercial Service Airports**

The Central California region has five Primary Commercial Service Non-Hub airports: Inyokern, Meadows Field, Modesto City-County, Stockton Metropolitan, and Visalia Municipal and one Commercial Airport: Merced Municipal. Meadows Field is the only Primary Commercial Service Non-Hub airport that meets all minimum standards. Modesto, Merced and Visalia all would benefit from runway extensions. Stockton's only enhancement need is for adequate runway weight bearing capacity, especially when as air carrier operations return. Merced has two needed enhancements: a runway extension and weight bearing capacity improvement. Inyokern Airport has four needed enhancements: 24-hour on-field weather services, an instrument approach procedure (either precision nor non-precision), and runway widening (only 50% of minimum standard), and increased runway weight bearing capacity.

#### **Metropolitan General Aviation Airports**

The region has three Metropolitan General Aviation airports, all in Sacramento County: Sacramento Mather, McClellan Airfield, and Sacramento Executive. All three meet all Metropolitan General Aviation airport

minimum standards and both Mather and McClellan actually meet Primary Commercial Service Non-Hub airport minimums.

### **Regional General Aviation Airports**

There are 14 Regional General Aviation airports in the Central California Region. Lincoln Regional, Porterville Municipal, and Yuba County in Marysville are the only facilities that meet all Regional General Aviation Airport minimum standards (they all actually meet Metropolitan General Aviation airport minimums). Facilities with single enhancement needs include Hanford (jet fuel availability) and Madera (jet fuel availability). Shafter-Minter Field needs only a runway extension and 24-hour on-field weather services. Five facilities have three needed enhancements, including runway extensions at all, plus: Bakersfield Municipal (jet fuel availability and 24-hour on-field weather services), Fresno-Chandler Downtown (jet fuel availability and 24-hour on-field weather services), Mefford Field (jet fuel availability and 24-hour on-field weather services), Tracy Municipal (runway pavement upgrade and jet fuel availability), and Delano (visual approach slope indicator equipment and jet fuel availability). The feasibility of a runway extension at Fresno-Chandler is questioned due to land use constraints. Facilities with three or more needed enhancements include Mojave (runway pavement upgrade, jet fuel availability and 24-hour on-field weather services) and Tehachapi (runway extension and widening, runway pavement upgrade, instrument approach procedure, 24-hour on-field weather services, and jet fuel availability). Tehachapi is another airport where the feasibility of a runway extension is questioned, due primarily to terrain. While projects to address all identified enhancements are identified, those needed at Mojave and Tehachapi, if feasible, would add capacity within the region and the state in an area further removed from facilities of equal or greater capacity than some of the region's other Regional General Aviation airports. Also notable is the fact that five of the six airports that need 24-hour on-field weather services already have instrument approach procedures, making these enhancements priority items.

### **Community General Aviation Airports**

There are 34 Community General Aviation airports in the Central California Region and all of them need enhancements to meet all Community General Aviation airport minimum standards. Common needs for nearly all airports in this classification include longer and wider runways, 24-hour on-field weather services and instrument approach procedures. In a region noted for enduring fog, adding these enhancements would improve effectiveness, capacity and safety across the region and the state. About half of them need fuel service and/or approach slope indicator equipment. Mendota is scheduled to have its runway resurfaced and widened to 60 feet (the FAA minimum), would still need an additional 15 feet of runway width to meet minimum width for this classification. Seven of these airports are not listed in the FAA NPIAS and are therefore more dependent on state or local funding sources: Eckert Field, Elk Grove, Exeter, Mountain Valley, Rosamond Skypark, Selma, and Sierra Sky Park.

### **Limited Use Airports**

There are seven Limited Use airports in the Central California Region: Blue Canyon, Elk Hills-Buttonwillow, Harris Ranch, Kingdon Airpark, Lodi Airpark, New Jerusalem and Poso-Kern County airports. Only New Jerusalem meets all Limited Use airport minimum standards. Blue Canyon, Elk Hills-Buttonwillow, Harris Ranch, and Lodi Airpark all have inadequate runway widths. In the cases of Harris Ranch and Lodi Airpark, widening the runways as indicated is considered unlikely due to the significant cost and the fact that these are both privately owned, non-NPIAS facilities, making them ineligible for either state or federal funding. Kingdon Airpark's runway pavement weight limit is suspect, while Poso-Kern County's runway needs strengthening. No Limited Use airports in the region are listed in the FAA NPIAS, making them more dependent on alternative funding sources.

**Enhancement Need Prioritization**

The airports below are considered the region's highest priority facilities in terms of system capacity and safety enhancement. Enhancements to the following airports could improve regional and state system capacity and safety, and perhaps make them worthy of reclassification:

Stockton	Mojave	Yolo County	Taft
Visalia	Tehachapi	Castle	Mendota
Inyokern	Madera	Delano	Reedley
Auburn	Franklin	California City	Hanford
Yuba County	Porterville	Blue Canyon	Mather
Tracy	Coalinga	Kern Valley	Turlock
Meadows	McClellan	Elk Hills-Buttonwillow	

All Non-NPIAS airports are also worthy of extra consideration at the state level since they are not eligible for federal funding.

Table 8

REGION 6 CENTRAL CALIFORNIA- Enhancement Needs and Estimated Costs										Total Estimated Costs For All Regional Projects: \$31.09 Million					
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILABLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE
<b>PRIMARY COMMERCIAL SERVICE NON-HUB</b>				<b>GOOD</b>		<b>150</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>50K SW</b>	<b>YES</b>		<b>ILS</b>
INYOKERN	7000	7100		GOOD		75	\$1,860,000	PAPI		100LLA		24000	NONE	\$100,000	NONE
MEADOWS FIELD	7000	10857		GOOD		150		VASI		100 100LLA		110000	YES		ILS
MERCED MUNICIPAL MACREADY FIELD	7000	5903	\$580,000	GOOD		150			\$60,000	100LL80	\$50,000	30000	YES		ILS
MODESTO CITY - COUNTY	7000	5911	\$570,000	GOOD		150		VASI		100LL80A		60000	YES		ILS
STOCKTON METROPOLITAN	7000	8650		GOOD		150		PAPI		100 100LLA		40000	YES		ILS
VISALIA MUNICIPAL	7000	6559	\$230,000	GOOD		150		PAPI		100LLA		60000	YES		ILS
<b>METROPOLITAN GENERAL AVIATION</b>				<b>GOOD</b>		<b>100</b>		<b>VASI/PAPI</b>				<b>50K SW</b>	<b>YES</b>		<b>ILS</b>
<b>MCCLELLAN AIRFIELD</b>	5000	10600		Unknown		200		PAPI		100LLA		155000	NONE	\$100,000	ILS
SACRAMENTO EXECUTIVE	5000	5503		GOOD		150		VASI		100LLA		60000	YES		ILS
SACRAMENTO MATHER	5000	11301		Unknown		150		VASI		100LLA		160000	YES		ILS
<b>REGIONAL GENERAL AVIATION</b>				<b>GOOD</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
AUBURN MUNICIPAL	5000	3100	\$500,000	GOOD		60	\$160,000	PAPI		100LL 80 A		30000	YES		GPS
BAKERSFIELD MUNICIPAL	4800	4000	\$210,000	GOOD		75		PAPI		100LL	\$50,000	20000	NONE	\$100,000	GPS
DELANO MUNICIPAL	4800	3650	\$300,000	GOOD		50	\$320,000		\$60,000	100LL	\$50,000	Unknown	YES		GPS
FRESNO CHANDLER DOWNTOWN ARPT.	4800	3202	\$420,000	GOOD		75		VASI		100LL80	\$50,000	17000	NONE	\$100,000	GPS
HANFORD MUNICIPAL	4800	5180		GOOD		75		PAPI		100LL	\$50,000	15000	YES		GPS
LINCOLN REGIONAL	4800	6001		GOOD		100		VASI		100LLA		30000	YES		ILS
MADERA MUNICIPAL	4800	5544		GOOD		150		VASI		100LL80	\$50,000	30000	YES		GPS
MEFFORD FIELD	4800	3914	\$230,000	GOOD		75		VASI		100LL	\$50,000	12500	NONE	\$100,000	GPS
MOJAVE	5500	9600		FAIR	\$4,800,000	200			\$60,000	100LLA		120000	NONE	\$100,000	GPS
PORTERVILLE MUNICIPAL	4800	5908		GOOD		150		VASI		100LL80 A		30000	YES		GPS
SHAFTER - MINTER FIELD	4800	4520	\$70,000	GOOD		100		PAPI		100LLA		22000	NONE	\$100,000	GPS
TEHACHAPI MUNICIPAL	6300	4035	TBD-Terrain	POOR	\$710,000	50	\$350,000	PAPI		100LL80	\$50,000	Unknown	NONE	\$100,000	NONE
TRACY MUNICIPAL	4800	3680	\$290,000	FAIR	\$920,000	100		VASI		100LL80	\$50,000	50000	YES		GPS
YUBA COUNTY	4800	6006		GOOD		150		VASI		100LLA		75000	YES		ILS
<b>COMMUNITY GENERAL AVIATION</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL or 80</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
BROWNSVILLE AERO PINES	4600	2320	TBD-Land	FAIR-trtd		20	\$450,000		\$60,000		\$100,000	Unknown	NONE		NONE
CALIFORNIA CITY MUNI.	4600	6025		GOOD		60	\$320,000		\$60,000	100LL80 A		26000	NONE		NONE
CASTLE	3800	11802		Unknown		150		VASI			\$100,000	155000	NONE	\$100,000	ILS
CHOWCHILLA	3800	3250	\$140,000	GOOD		60	\$170,000	VASI			\$100,000	12500	NONE		NONE
COALINGA MUNICIPAL	4000	5000		GOOD		100		PAPI			\$100,000	30000	NONE		NONE
CORCORAN	3800	3800		GOOD		50	\$330,000		\$60,000	100LLA		8000	NONE		NONE
<b>ECKERT FIELD</b>	3900	2000	TBD-Land	POOR	\$350,000	50	\$180,000		\$60,000	100LL		Unknown	NONE		NONE
<b>ELK GROVE</b>	3700	2780	\$240,000	GOOD		35	\$390,000		\$60,000		\$100,000	12500	NONE		NONE
<b>EXETER (THUNDERHAWK FIELD)</b>	3900	2800	\$290,000	GOOD		40			\$60,000		\$100,000	Unknown	NONE		NONE
FIREBAUGH	3900	3102	\$210,000	GOOD		60	\$160,000	VASI			\$100,000	12500	NONE	\$100,000	GPS

LEGEND: RED TEXT - DOES NOT MEET MINIMUM STANDARD  
SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS

BOLD ITALIC TEXT - NON-NPIAS FACILITY

ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS

TABLE 8 Continued

**REGION 6 CENTRAL CALIFORNIA**

FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILABLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE
<b>COMMUNITY GENERAL AVIATION (cont.)</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL or 80</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
FRANKLIN FIELD	3700	3240	\$120,000	GOOD		60	\$170,000		\$60,000		\$100,000	30000	NONE		NONE
GUSTINE	3700	3200	\$130,000	FAIR		60	\$170,000	VASI		100LL		12500	NONE		NONE
KERN VALLEY	4900	3500	\$370,000	GOOD		50	\$310,000		\$60,000	100LL		Unknown	NONE		NONE
LODI	3700	3085	\$160,000	FAIR		42	\$360,000		\$60,000	100LL80		30000	NONE	\$100,000	GPS
LOS BANOS MUNICIPAL	3700	3005	\$180,000	FAIR		75		VASI		100LLA		23000	NONE	\$100,000	GPS
LOST HILLS - KERN COUNTY	3800	3020	\$200,000	FAIR		60	\$160,000		\$60,000		\$100,000	12500	NONE		NONE
MENDOTA	3800	3550	\$70,000	FAIR		50	\$310,000	VASI		100LL		12500	NONE		NONE
<b>MOUNTAIN VALLEY</b>	5800	5420	\$100,000	FAIR		60	\$280,000		\$60,000	80		Unknown	NONE		NONE
OAKDALE MUNICIPAL	3800	3020	\$200,000	GOOD		66	\$100,000		\$60,000	100LL		20000	NONE	\$100,000	GPS
RANCHO MURIETA	3800	3800		Unknown		75			\$60,000		\$100,000	Unknown	NONE		NONE
REEDLEY MUNICIPAL	3900	3300	\$160,000	FAIR		50	\$290,000	PAPI		100LLA		12500	NONE		NONE
RIO LINDA	3900	2620	TBD-Terrain	GOOD		42	\$300,000	TRIL-17		100LL		12500	NONE		NONE
<b>ROSAMOND SKYPARK</b>	4800	3600	\$320,000	GOOD		50	\$320,000		\$60,000	100LL		Unknown	NONE		NONE
<b>SELMA</b>	3900	2490	TBD-Land	FAIR		50	\$220,000		\$60,000	100LL80		12500	NONE		NONE
SEQUOIA FIELD	3900	3012	\$230,000	Unknown		60	\$160,000		\$60,000		\$100,000	Unknown	NONE		NONE
<b>SIERRA SKY PARK</b>	3900	2920	TBD-Terrain	FAIR		50	\$260,000		\$60,000		\$100,000	Unknown	NONE		NONE
SUTTER COUNTY	3700	3040	\$170,000	GOOD		75		TRIL-17		100LL		Unknown	NONE		NONE
TAFT	4000	3550	\$120,000	POOR	\$750,000	60	\$190,000	PAPI		100LL		4000	NONE		NONE
TURLOCK MUNICIPAL	3800	2985	\$210,000	GOOD		50	\$260,000		\$60,000	100LL		12500	NONE		NONE
UNIVERSITY	3700	3185	\$140,000	GOOD		50	\$280,000	S2L1V2L3		100LL		Unknown	NONE	\$100,000	GPS
WASCO	3900	3380	\$140,000	GOOD		60	\$180,000		\$60,000	100LL		6000	NONE		NONE
WATTS - WOODLAND	3800	3770	\$10,000	GOOD		60	\$200,000	TRII-18		100LLA		12500	NONE	\$100,000	GPS
WOODLAKE	3900	3320	\$150,000	POOR-grvl	\$580,000	50	\$290,000		\$60,000	100LL		Unknown	NONE		NONE
YOLO COUNTY DAVIS WOODLAND	3700	6000		GOOD		100			\$60,000		\$100,000	30000	NONE	\$100,000	GPS
<b>LIMITED USE</b>				<b>FAIR</b>		<b>60</b>		<b>NONE</b>		<b>100LL or 80</b>		<b>12500</b>	<b>NONE</b>		<b>NONE</b>
<b>BLUE CANYON</b>	4900	3300	TBD-Terrain	GOOD		50	\$120,000					12500	YES		NONE
<b>ELK HILLS-BUTTONWILLOW</b>	2700	3260		FAIR		50	\$110,000					10000	NONE		NONE
<b>HARRIS RANCH</b>	2700	2820		FAIR		30	\$300,000			100LL		30000	NONE		NONE
<b>KINGDON AIRPARK</b>	2600	4000		FAIR		60		TRIL -30		100LL		50000	NONE		NONE
<b>LODI AIRPARK</b>	2600	2705		FAIR-dirt		22	\$360,000					Unknown	NONE		NONE
<b>NEW JERUSALEM</b>	2600	3530		GOOD		60						12500	NONE		NONE
<b>POSO-KERN COUNTY</b>	2800	3000		FAIR		60						6000	NONE		NONE
Estimated Regional Cost Totals (by project type )			\$7,460,000		\$8,110,000		\$10,730,000		\$1,440,000		\$1,750,000			\$1,600,000	

**LEGEND:** RED TEXT – DOES NOT MEET MINIMUM STANDARD      **BOLD ITALIC TEXT – NON-NPIAS FACILITY**      ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS  
SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS

California Aviation System Plan:  
Region 7 Public Use Airports

**EAST SIERRA**



**FUNCTIONAL CLASS**

- ★ PRIMARY COMMERCIAL HUB (0)
- ◆ PRIMARY COMMERCIAL NON-HUB (0)
- ▲ METROPOLITAN GA (0)
- ◆ REGIONAL GA (2)
- COMMUNITY GA (5)
- LIMITED USE (4)
- ⊕ JOINT USE (0)

## East Sierra Region

The East Sierra Region is located in the eastern central portion of California east of the Sierra Nevada Mountain Range. Each county within this region functions as its own Regional Transportation Planning Agency. The three counties in this region are:

Alpine

Mono

Inyo

### **Regional Overview**

The 1999 *Forecast Element* of the California Aviation System Plan (CASP) estimated there were 32,500 residents within this region in 2000. By 2020, the population is estimated to increase by approximately 21.1% to 39,400 people. The East Sierra CASP Region is by far the least populated in the state, and also has the slowest projected rate of growth.

There are a total of 11 public-use airports in the region. There are currently no airports in this region with scheduled passenger service. The 1999 *CASP Forecast Element* stated there were 174 based aircraft and 70,925 general aviation (GA) annual aircraft operations within the region. By 2015, these figures are estimated to increase by 13.2% (to 197 based aircraft) and 11.5% (to 79,048 annual GA operations) respectively.

### **Airport Comparison by Functional Classification Category**

#### **Primary Commercial Service Hub Airports**

There are no Primary Commercial Service Hub airports in this region. The closest one is Fresno Yosemite, though Reno-Tahoe and Las Vegas-McCarran airports in Nevada are utilized by the region's residents to access the commercial air transportation system. Refer to Section II for a discussion of all California Primary Commercial Service Hub airports.

#### **Primary Commercial Service Non-Hub and Commercial service Airports**

There are no Primary Commercial Service Non-Hub or Commercial Service airports in the East Sierra Region.

#### **Metropolitan General Aviation Airports**

There are no Metropolitan General Aviation airports in the East Sierra Region.

#### **Regional General Aviation Airports**

Mammoth Lakes and Bishop are the only Regional General Aviation airports in the region. Both would need significant runway extensions to meet this classification's minimum standards. As there are no Primary Commercial Service (hub or non-hub), Commercial Service, or Metropolitan GA airports in this geographically rugged and isolated region, upgrading these facilities is considered a priority. To meet the minimum standards for a Primary Commercial Service Non-Hub Airport, both airports will require runway widening and precision instrument approach procedures in addition to the aforementioned runway extensions. As the airports are in such close proximity to each other, upgrading both would provide redundancy as well as adequate capacity. Mammoth Lakes has a runway extension planned, though that project is currently on hold. If the proposed extension leads to the development of commercial air service at that airport, the upgrades to Bishop will enable that airport to provide excess capacity and redundancy should weather or technical difficulties interrupt air service at Mammoth Lakes. Otherwise, upgrades to Bishop will provide the region and the state system improved access and mobility. As the identified runway extensions may not prove feasible, deferring to the planned runway lengths in each airport's Airport Master Plan is reasonable.

**Community General Aviation Airports**

There are five Community General Aviation airports in the East Sierra region: Bryant Field, Furnace Creek, Independence, Lone Pine, and Trona airports. In order to meet Community General Aviation airport standards, all airports in this classification need longer and wider runways, visual approach slope indicator equipment, and instrument approach procedures. All but Lone Pine are in need of 24-hour on-field weather services as well. Of these, Trona and Lone Pine are identified as being the closest to meeting this classification's minimum standards. Additionally, they are located in areas in the region lacking similar capabilities. For similar reasons, Bryant Airport is also a candidate for upgrading, but the identified runway extension may not be feasible owing to terrain or practical due to the proximity of Mammoth Yosemite and Minden (Nevada) airports. Upgrades to Independence and Furnace Creek airports are also desirable, though Furnace Creek, since it is owned by a federal agency, is not eligible for the state's CAAP funding.

**Limited Use Airports**

The remaining four airports are Limited Use airports: Alpine County, Lee Vining, Shoshone, and Stovepipe Wells. All but Stovepipe Wells need longer and wider runways to meet Limited Use airport minimum standards, and the pavement condition at Stovepipe Wells is questionable. Projects to bring Shoshone up to Limited Use airport minimum standards are desirable. Even wider runways along with Non-precision instrument approach procedures, visual approach slope indicator equipment, and fuel availability would bring both Alpine County and Lee Vining up to Community General Aviation airport standards. Add in longer runway extensions and 24-hour on-field weather services and both could meet Regional General Aviation airport minimums. Stovepipe Wells, a federally owned facility not listed in the FAA NPIAS, is not eligible for either FAA AIP or the state's CAAP funding.

**Enhancement Need Prioritization**

The airports below are considered the region's highest priority facilities in terms of system capacity and safety enhancement. Enhancement to the following airports would improve the regional and state system capacity and safety, and perhaps make them worthy of reclassification:

- Lone Pine
- Bryant
- Trona
- Mammoth Lakes
- Bishop
- Alpine County
- Lee Vining

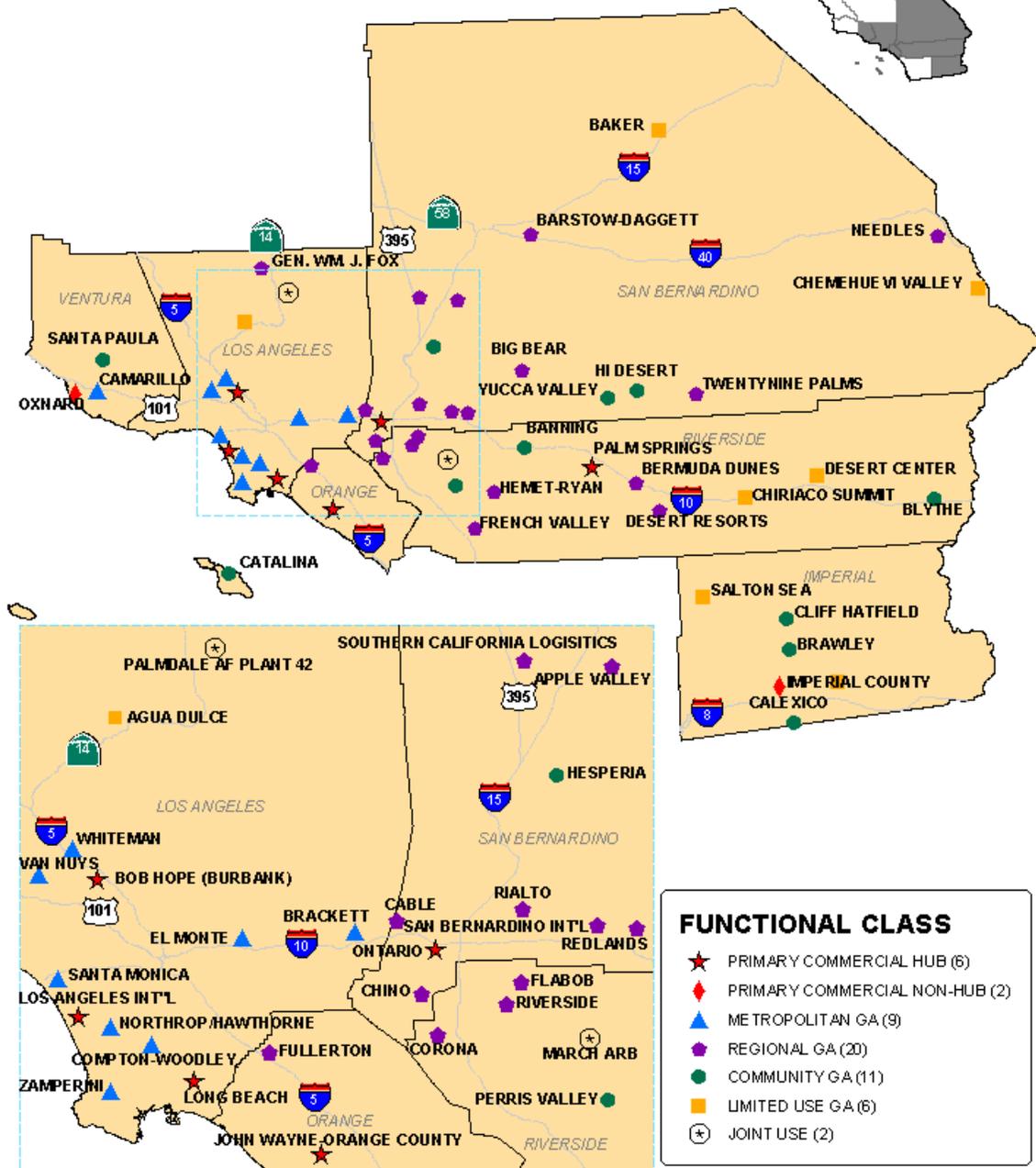
All Non-NPIAS airports are also worthy of extra consideration at the state level since they are not eligible for federal funding.

Table 9

REGION 7 EAST SIERRA - Enhancement Needs and Estimated Costs															Total Estimated Costs For All Regional Projects: \$7.03 Million	
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILABLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE	
<b>REGIONAL GENERAL AVIATION</b>				<b>GOOD</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>	
BISHOP	9000	7498	\$530,000	GOOD		100		VASI		100LLA		70000	YES		GPS	
MAMMOTH YOSEMITE	11000	7000	\$1,400,000	GOOD		100		PAPI		100LLA		30000	YES		GPS	
<b>COMMUNITY GENERAL AVIATION</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL or 80</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>	
BRYANT FIELD	8200	4239	TBD-Land	GOOD		60	\$220,000	NONE	60000	100LL80		30000	NONE	\$100,000	NONE	
FURNACE CREEK	3700	3065	\$170,000	FAIR		70	\$50,000	NONE	60000	100LL		4000	NONE	\$100,000	NONE	
INDEPENDENCE	5600	3722	\$49,000	GOOD		60	\$200,000	NONE	60000	NONE	100000	20000	NONE	\$100,000	NONE	
LONE PINE	5600	4000	\$420,000	GOOD		60	\$210,000	NONE	60000	100LLA		8000	YES		NONE	
TRONA	4400	4310	\$20,000	POOR	910000	60	\$230,000	NONE	60000	NONE	100000	Unknown	NONE	\$100,000	NONE	
<b>LIMITED USE</b>				<b>FAIR</b>		<b>60</b>		<b>NONE</b>		<b>100LL or 80</b>		<b>12500</b>	<b>NONE</b>		<b>NONE</b>	
<b>ALPINE COUNTY</b>																
ALPINE COUNTY	5300	4440	\$180,000	FAIR		50	\$160,000	NONE		NONE		12000	NONE		NONE	
LEE VINING	6000	4090	\$400,000	GOOD		50	\$140,000	NONE		NONE		30000	NONE		NONE	
<b>SHOSHONE</b>																
SHOSHONE	3100	2380	\$150,000	FAIR		30	\$250,000	NONE		NONE		Unknown	NONE		NONE	
<b>STOVEPIPE WELLS</b>																
STOVEPIPE WELLS	2500	3260		FAIR		65		NONE		NONE		Unknown	NONE		NONE	
Estimated Regional Cost Totals (by project type)			\$3,760,000		\$910,000		\$1,460,000		\$300,000		\$200,000			\$400,000		
<b>LEGEND:</b> RED TEXT – DOES NOT MEET MINIMUM STANDARD <b>BOLD ITALIC TEXT – NON-NPIAS FACILITY</b> ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS																

California Aviation System Plan:  
Region 8 Public Use Airports

**LOS ANGELES / DESERT**



## Los Angeles/Desert Region

The CASP's Los Angeles/Desert Region consists of the entire geographical area of the Southern California Association of Governments (SCAG) region. SCAG is the federally designated Metropolitan Planning Organization for the region. There are six counties within this region:

Ventura	Los Angeles	San Bernardino
Orange	Riverside	Imperial

### Regional Overview

This region is the most populated in the state. In 2000, the California Department of Finance estimated there were approximately 16.7 million residents in this region. By 2020, the population is forecast to increase approximately 30.3% to nearly 22 million people. SCAG estimates most of the region's population growth will occur in north Los Angeles, Riverside, and San Bernardino Counties; however, a large percentage of the jobs will remain in Los Angeles and Orange counties. This jobs/housing imbalance will have a severe impact on the region's transportation infrastructure, including airports.

The region supports the world's largest and most complex regional aviation system. Regional aviation capacity issues will reach the critical stage in this region before any other region in California.

There are 47 public-use non-hub airports and 2 joint use civil/military airfields (Palmdale-U.S. Air Force Plant 42 and March Air Reserve Base) in the Los Angeles/Desert Region. The *1999 CASP Forecast Element* stated there were 10,872 based aircraft and 4,266,744 general aviation (GA) annual aircraft operations within the region. By 2015, these figures are estimated to increase by 10.9% (to 12,059 based aircraft) and 8.9% (to 4,647,501 annual GA operations) respectively.

### Airport Comparison by Functional Classification Category

#### Primary Commercial Service Hub Airports

There are six Primary Commercial Hub airports in the Los Angeles Desert Region: Bob Hope (formerly Burbank-Glendale-Pasadena), John Wayne-Orange County, Long Beach Municipal, Los Angeles International, Ontario International and Palm Springs International. Refer to Section II for a discussion of all California Primary Commercial Service Hub airports.

#### Primary Commercial Service Non-Hub and Commercial Service Airports

Imperial County and Oxnard are the region's only Primary Commercial Service Non-Hub airports. Both facilities would benefit from runway extensions and widening. Imperial County's longest runway needs an additional 1,696 feet and Oxnard's an additional 1,050 feet, and both would need to be widened by 50 feet. However, airport enhancements such as a runway extension are not identified in the Oxnard Airport's currently adopted Airport Master Plan. In fact, the plan's mission statement makes the "search for a regional airport to serve the air carrier and commercial needs of the city of Oxnard and Ventura County" a priority. Following the logic of this statement, reclassification of Oxnard down to a Metropolitan General Aviation Airport would likely be reasonable, as it would meet those standards immediately. At the same time, the desirability of this eventuality from a system perspective is debatable. Additionally, the feasibility of such a runway extension at Oxnard is questioned due to local legal restriction and encroachment. However, a runway extension at Imperial County airport, already the longest in the county, will improve effectiveness, capacity, and safety in the region and the state aviation system. Imperial County also needs a precision instrument approach procedure.

**Metropolitan General Aviation Airports**

There are nine Metropolitan General Aviation airports in the region. Camarillo and Van Nuys are the only facilities to meet all minimum standards for Metropolitan General Aviation airports, with Van Nuys meeting Primary Commercial Service Non-Hub airport standards. Both Santa Monica and Jack Northrop/Hawthorne airports runways are within 50 feet of meeting Metropolitan General Aviation airport minimum standards. Considering that 50-foot extensions at both facilities would be essentially meaningless in terms of capacity or safety enhancements, and that additional extensions are impractical due to encroachment issues, these facilities are considered to meet the minimum standard. Brackett and Zamperini airports both have precision instrument approaches but do not have 24-hour on-field weather services. Additionally, Brackett's runway needs a 161 foot extension and to be widened by 25 feet. Zamperini's pavement condition is suspect and no jet fuel is available there. El Monte and Whiteman airports have more significant runway lengthening needs in the range of 1,000 feet to meet minimum standards. Additionally, 25 foot runway widening, provisions for 24-hour on-field weather services, and runway weight bearing capacity enhancements would benefit both airports. Compton-Woodley needs runway length (1,330 feet short), width (40 feet too narrow), and weight bearing capacity enhancements along with 24-hour on-field weather services, an instrument approach procedure, and jet fuel availability.

**Regional General Aviation Airports**

There are 20 Regional General Aviation airports in the region. Chino, General William J. Fox Field, and Southern California Logistics Airports meet all minimum standards for a Primary Commercial Non-Hub airport, rather than just a Regional General Aviation airport. Desert Resorts Regional and Riverside Municipal airports both meet all Metropolitan General Aviation airport standards rather than just those for Regional General Aviation airports. Big Bear City, Fullerton, and French Valley meet all Regional General Aviation airport minimum standards with the significant exception of runway length, with the feasibility of extensions at both Fullerton and French Valley in doubt due to encroaching development. Hemet-Ryan's longest runway needs an extension and, along with San Bernardino International airport, rehabilitation of its runway surface to meet all minimums for a Regional General Aviation airport. Several airports each need only a few specific enhancements to meet this classification's minimum standards. Bermuda Dunes needs a wider runway and 24-hour on-field weather services. Cable airport also needs a runway extension, 24-hour on-field weather services, and jet fuel availability. Corona Municipal needs a longer and wider runway and jet fuel availability. Needles Airport needs a runway pavement upgrade and a visual approach slope indicator system. Rialto needs a runway extension and 24-hour on-field weather services. With more numerous enhancements needed, Redlands needs a runway extension, visual approach slope indicator equipment, 24-hour on-field weather services, an increased runway weight bearing capacity, and jet fuel availability. Twentynine Palms needs 24-hour on-field weather services, visual approach slope indicator equipment, a runway pavement upgrade, a wider runway, and adequate runway weight bearing capacity. While Flabob has needs in all areas, most significant is a 1,700-foot runway extension that is not considered feasible due to encroachment.

**Community General Aviation Airports**

There are eleven Community General Aviation airports of which Blythe is the only one that meets all of this classification's minimum standards. Blythe actually meets the requirements for a Metropolitan General Aviation airport. Catalina Airport needs a runway extension, an upgrade to its runway pavement and fuel service, though environmental considerations make a runway extension doubtful and the logistics and costs associated with getting fuel to the facility make it impractical. Most effective would be a runway rebuild to provide a consistently level surface gradient for the entire length of the runway. Brawley needs a wider runway, 24-hour on-field weather services, and adequate runway weight bearing capacity. The remaining seven Community General Aviation airports all need instrument approach procedures and 24-hour on-field weather services. In the case of Banning, this is all that keeps it from meeting the minimum standards. Additionally, Calexico also needs adequate runway weight bearing capacity. Cliff Hatfield, Hesperia, and Yucca Valley airports need longer and wider runways, visual approach slope indicator equipment, 24-hour on-

field weather services, and instrument approach procedures. Hesperia also needs to have its runway pavement rehabilitated while Cliff Hatfield and Yucca Valley also lack fuel availability. Yucca Valley needs visual approach slope indicator equipment and fuel service availability as well. Hi Desert and Santa Paula Airports both need longer and wider runways and visual approach slope indicator equipment. Additionally, the runway weight bearing capacity at both is unknown. Perris Valley airport needs a wider runway and visual approach slope indicator equipment. Like Hi Desert and Santa Paula, its runway weight bearing capacity is unknown. Cliff Hatfield, Hi Desert, Perris Valley, and Yucca Valley airports are not listed in the FAA NPIAS, and are therefore more dependent on other than federal funding sources.

### **Limited Use Airports**

There are seven Limited Use airports in the region: Agua Dulce Airpark, Baker Airport, Chemehuevi Valley Airport, Chiriaco Summit, Desert Center, Holtville, and Salton Sea. Salton Sea is the only airport to meet all of the minimum standards for a Limited Use airport, though it is a gravel runway. Pavement is a desirable upgrade. Agua Dulce, Baker, Chiriaco Summit, and Desert Center airports all need wider runways. Of these four, only Desert Center's runway weight bearing capacity is known and meets minimum standards. Holtville, with a currently suspended state airport permit, needs new runway pavement that meets runway weight bearing capacity minimums. Should Holtville's permit be reactivated, its status will be re-evaluated. Obviously, investment should only be prioritized for facilities whose sponsors are committed to keeping them open and in compliance with the conditions required under their state permits. Only Agua Dulce Airpark and Chemehuevi Valley airports are listed in the FAA's NPIAS. The other five are dependent on funding from other than federal sources.

### **Military/Civil Joint Use Airports**

March Air Reserve Base and Palmdale Air Force Plant 42 are currently the only military/civil joint use airports in the state. They are included in the discussion of Primary Commercial Service Hub airports as their intended joint uses and infrastructure are best suited for that discussion.

### **Enhancement Need Prioritization**

The airports below are considered the region's highest priority facilities in terms of system capacity and safety enhancement. Enhancements at the following airports would improve regional and state system capacity and safety, and perhaps make them worthy of reclassification:

Oxnard	Santa Monica	Fullerton	Brawley
Imperial County	Zamperini	Catalina	Baker
Brackett	Hemet Ryan	Banning	Barstow-Daggett
Jack Northrop/Hawthorne	San Bernardino	Needles	Twentynine Palms
Calexico	Santa Paula	Apple Valley	Blythe
Camarillo	William J. Fox	Riverside	Chiriaco Summit
Van Nuys	So. Calif. Logistics	Big Bear	Chino
Desert Resorts	French Valley		

All Non-NPIAS airports are also worthy of extra consideration at the state level since they are not eligible for federal funding.

Table 10

REGION 8 LOS ANGELES / DESERT - Enhancement Needs and Estimated Costs															Total Estimated Costs For All Regional Projects: \$31.03 Million	
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILABLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE	
<b>PRIMARY COMMERCIAL SERVICE NON-HUB</b>				<b>GOOD</b>		<b>150</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>50k SW</b>	<b>YES</b>		<b>ILS</b>	
IMPERIAL COUNTY	7000	<b>5304</b>	\$890,000	GOOD		<b>100</b>	\$930,000	VASI		100LLA		60000	YES		<b>GPS</b>	
OXNARD	7000	<b>5950</b>	<b>TBD-land</b>	GOOD		<b>100</b>	\$1,040,000	VASI		100LLA		50000	YES		ILS	
<b>METROPOLITAN GENERAL AVIATION</b>				<b>GOOD</b>		<b>100</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>25k SW</b>	<b>YES</b>		<b>GPS/VOR</b>	
BRACKETT FIELD	5000	<b>4839</b>	\$60,000	GOOD		<b>75</b>	\$420,000	PAPI		100LLA		26000	<b>NONE</b>	\$100,000	ILS	
CAMARILLO	5000	6010		GOOD		150		PAPI		100LLA		48000	YES		GPS	
COMPTON/WOODLEY	5000	<b>3670</b>	\$470,000	GOOD		<b>60</b>	\$510,000	VASI		<b>100LL80</b>	\$50,000	<b>14500</b>	<b>NONE</b>	\$100,000	<b>NONE</b>	
EL MONTE	5000	<b>3995</b>	\$350,000	GOOD		<b>75</b>	\$350,000	VASI		100LLA		<b>12500</b>	<b>NONE</b>	\$100,000	GPS	
JACK NORTHROP FIELD/HAWTHORNE	4956	4956	\$20,000	GOOD		100		VASI		100LLA		30000	YES		LOC/LDA	
SANTA MONICA MUNICIPAL	4987	4987		GOOD		150		VASI		100LLA		40000	YES		GPS	
VAN NUYS	5000	8001		GOOD		150		VASI		100LLA		90000	YES		ILS	
WHITEMAN	5000	<b>4120</b>	\$310,000	GOOD		<b>75</b>	\$360,000	PAPI		<b>100LL80</b>	\$50,000	<b>12500</b>	<b>NONE</b>	\$100,000	GPS	
ZAMPERINI FIELD	5000	5000		<b>FAIR</b>	\$1,880,000	150		VASI		<b>100LL80</b>	\$50,000	30000	<b>NONE</b>	\$100,000	ILS	
<b>REGIONAL GENERAL AVIATION</b>				<b>GOOD</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>	
APPLE VALLEY	5700	6500		GOOD		150		VASI		100LL 80 A		70000	<b>NONE</b>	\$100,000	GPS	
BARSTOW-DAGGETT	5100	6400		GOOD		150		<b>NONE</b>	\$60,000	100LLA		30000	YES		GPS	
BERMUDA DUNES	4900	5002		GOOD		<b>70</b>	\$90,000	VASI		100LLA		Unknown	<b>NONE</b>	\$100,000	GPS	
BIG BEAR CITY	7900	<b>5850</b>	\$540,000	GOOD		75		PAPI		100LLA		12500	YES		GPS	
CABLE	5000	<b>3865</b>	\$300,000	GOOD		75		VASI		<b>100LL80</b>	\$50,000	20000	<b>NONE</b>	\$100,000	GPS	
CHINO	4900	7000		GOOD		150		PAPI		100LLA		75000	YES		ILS	
CORONA MUNICIPAL	4800	<b>3200</b>	\$420,000	GOOD		<b>60</b>	\$170,000	VASI		<b>100LL80</b>	\$50,000	12000	YES		GPS	
DESERT RESORTS REGIONAL	4700	8500		GOOD		150		VASI		100LLA		30000	YES		GPS	
<b>FLABOB</b>	4900	<b>3200</b>	\$450,000	<b>POOR</b>	\$560,000	<b>50</b>	\$280,000	<b>NONE</b>	\$60,000	<b>100LL80</b>	\$50,000	Unknown	<b>NONE</b>	\$100,000	<b>NONE</b>	
FRENCH VALLEY	5000	<b>4600</b>	<b>TBD-land</b>	GOOD		75		PAPI		100LLA		30000	YES		GPS	
FULLERTON MUNICIPAL	4800	<b>3121</b>	<b>TBD-terrain</b>	GOOD		75		VASI		100LLA		12500	YES		LOC/LDA	
GEN. WM. J. FOX	5000	7201		GOOD		150		PAPI		100LLA		50000	YES		GPS	
HEMET-RYAN	5000	<b>4314</b>	\$180,000	<b>FAIR</b>	\$1,080,000	100		VASI		100LLA		40000	YES		GPS	
NEEDLES	4800	5005		<b>FAIR</b>	\$1,880,000	150		<b>NONE</b>	\$60,000	100LLA		16000	YES		GPS	
REDLANDS MUNICIPAL	5000	<b>4505</b>	\$130,000	GOOD		75		<b>NONE</b>	\$60,000	<b>100LL</b>	\$50,000	<b>10000</b>	<b>NONE</b>	\$100,000	GPS	
RIALTO MUNI/ART SCHOLL MEMOR.	5000	<b>4500</b>	\$130,000	GOOD		100		PAPI		100LLA		12500	<b>NONE</b>	\$100,000	GPS	
RIVERSIDE MUNICIPAL	4900	5401		GOOD		100		VASI		100LLA		48000	YES		ILS	
SAN BERNARDINO INTERNATIONAL	4900	10001		<b>FAIR</b>	\$4,500,000	180		VASI		100LLA		97000	YES		ILS	
SOUTHERN CALIFORNIA LOGISTICS	5600	10050		GOOD		150		VASI		100LLA		60000	YES		ILS	
TWENTYNINE PALMS	5100	5531		<b>FAIR</b>	\$650,000	<b>47</b>	\$540,000	<b>NONE</b>	\$60,000	100LLA		Unknown	<b>NONE</b>	\$100,000	GPS	

**LEGEND:** RED TEXT – DOES NOT MEET MINIMUM STANDARD  
SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS

**BOLD ITALIC TEXT – NON-NPIAS FACILITY**

ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS

Table 10 continued

REGION 8 LOS ANGELES / DESERT - Enhancement Needs and Estimated Costs (continued)															
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILBLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE
<b>COMMUNITY GENERAL AVIATION</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>
BANNING MUNICIPAL	4700	5200		FAIR		150		PAPI		100LL		12500	NONE	\$100,000	NONE
BLYTHE	3900	6562		FAIR		150		VASI		100LLA1+		80000	YES		GPS
BRAWLEY MUNICIPAL	3700	4447		GOOD		60	\$230,000	VASI		100LL		20000	NONE	\$100,000	GPS
CALEXICO INTERNATIONAL	3700	4507		GOOD		75		VASI		100LLA		30000	NONE	\$100,000	NONE
CATALINA	4400	<b>3000</b>	TBD-Enviro	<b>POOR</b>	\$790,000	75		PAPI		None	TBD-Demand	15000	YES		GPS
<b>CLIFF HATFIELD MUNICIPAL</b>	3700	<b>3440</b>	\$70,000	GOOD		50	\$300,000	NONE	\$60,000	None	\$100,000	12000	NONE	\$100,000	NONE
HESPERIA	5200	<b>3910</b>	\$340,000	<b>POOR</b>	\$680,000	50	\$340,000	NONE	\$60,000	100LL		12000	NONE	\$100,000	NONE
<b>HI DESERT</b>	4800	<b>2493</b>	\$610,000	FAIR		50	\$220,000	NONE	\$60,000	100LL		Unknown	NONE	\$100,000	NONE
<b>PERRIS VALLEY</b>	4300	5100		FAIR		50	\$450,000	NONE	\$60,000	100LLA		Unknown	NONE	\$100,000	NONE
SANTA PAULA	3800	<b>2650</b>	\$10,000	FAIR		40	\$90,000	NONE	\$60,000	100LL80		Unknown	NONE	\$100,000	NONE
<b>YUCCA VALLEY</b>	5200	<b>4363</b>	\$220,000	GOOD		60	\$230,000	NONE	\$60,000	None	\$100,000	12500	NONE	\$100,000	NONE
<b>LIMITED USE</b>				<b>FAIR</b>		<b>60</b>		<b>NONE</b>		<b>NONE</b>		<b>12500</b>	<b>NONE</b>		<b>NONE</b>
AGUA DULCE AIRPARK	3500	4600		GOOD		50	\$160,000	NONE		NONE		Unknown	NONE		NO IFR APCH
<b>BAKER</b>	2900	3157		GOOD		50	\$110,000	NONE		NONE		Unknown	NONE		NO IFR APCH
CHEMEHUEVI VALLEY	2800	5000		GOOD		75		NONE		NONE		12000	NONE		NO IFR APCH
<b>CHIRIACO SUMMIT</b>	3200	4600		GOOD		55	\$80,000	NONE		NONE		Unknown	NONE		NO IFR APCH
<b>DESERT CENTER</b>	2800	4200		GOOD		50	\$150,000	NONE		NONE		45000	NONE		NO IFR APCH
<b>HOLTVILLE</b>	2700	6000		<b>POOR</b>	\$3,150,000	150		NONE		NONE		3000	NONE		NO IFR APCH
<b>SALTON SEA</b>	2500	5000		FAIR-grvel		75		NONE		NONE		28000	NONE		NO IFR APCH
<b>CATEGORY 7 MILITARY/CIVIL JOINT USE</b>				<b>GOOD</b>		<b>150</b>		<b>VASI/PAPI</b>		<b>A</b>		<b>50k SW</b>			<b>ILS</b>
MARCH ARB	8000	13300		GOOD		300		PAPI		A		65000	NONE		NO IFR APCH
PALMDALE PLANT 42	8000	12002		GOOD		150		NONE		A		83000	YES		ILS
Estimated Regional Cost Totals (by project type)			\$5,500,000		\$15,170,000		\$7,050,000		\$660,000		\$550,000			\$2,100,000	
<b>LEGEND: RED TEXT – DOES NOT MEET MINIMUM STANDARD BOLD ITALIC TEXT – NON-NPIAS FACILITY</b> SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS															

California Aviation System Plan:  
Region 9 Public Use Airports

**SAN DIEGO**



**FUNCTIONAL CLASS**

- ★ PRIMARY COMMERCIAL HUB (1)
- ◆ PRIMARY COMMERCIAL NON-HUB(1)
- ▲ METROPOLITAN GA (1)
- ◆ REGIONAL GA (4)
- COMMUNITY GA (2)
- LIMITED USE GA (3)
- ⊕ JOINT USE (0)

## San Diego Region

The San Diego Region is composed of only San Diego County. The San Diego Association of Governments (SANDAG) is the responsible Metropolitan Planning Organization for this region, but the San Diego Regional Airport Authority has the authority for all airport planning in the region. The San Diego Region is the only CASP region in the state composed of a single county.

### Regional Overview

In 2000, the California Department of Finance estimated there were 2,856,300 residents in the county. By 2020, the population is estimated to increase by approximately 35% to 3,863,500 people.

There are a total of 11 non-hub public-use airports in this CASP region. San Diego International is the region's only Primary Commercial Service Hub airport. It and McClellan-Palomar are the only two airports in the region that have scheduled passenger service. The *1999 CASP Forecast Element* stated there were 2,367 based aircraft and 1,024,738 general aviation (GA) annual aircraft operations within the region. By 2015, these figures are estimated to increase by 28.9% (to 3,050 based aircraft) and 28.6% (to 1,318,036 annual GA operations) respectively.

### Airport Comparison by Functional Classification Category

#### Primary Commercial Service Hub Airports

San Diego International is the region's only Primary Commercial Service Hub airport. Refer to Section II for a discussion of all California Primary Commercial Service Hub airports.

#### Primary Commercial Non-Hub and Commercial Airports

McClellan-Palomar is the region's only Primary Commercial Service Non-Hub airport. Its only needed enhancement is significant: a 2,000-foot extension to its longest runway in order to meet the minimum standard for Primary Commercial Service Non-Hub airports.

#### Metropolitan General Aviation Airports

Montgomery Field is the San Diego region's only Metropolitan General Aviation airport. Its sole needed enhancement is a 423-foot runway extension of its longest runway.

#### Regional General Aviation Airports

Four airports in the San Diego region are Regional General Aviation airports: Brown Field, Gillespie Field, Oceanside Municipal, and Ramona. Gillespie Field, Brown Field, and Ramona would meet not only Regional General Aviation airport minimum standards, but could be brought up to Metropolitan General Aviation airport minimum standards with some upgrades. These include runway pavement rehabilitation (Ramona), visual approach slope indicator equipment (Brown Field), and jet fuel availability and 24-hour on-field weather services (Gillespie). Oceanside needs two enhancements to meet Metropolitan General Aviation Airport minimum standards: visual approach slope indicator equipment, and, more significantly, a 500-foot runway extension. The feasibility of the runway extension is doubtful owing to terrain and encroaching development.

#### Community General Aviation Airports

The two Community General Aviation airports in the San Diego Region are Borrego Valley Airport and Fallbrook Community Airpark. Borrego Valley meets all Community General Aviation Airports minimum standards except 24-hour on-field weather services. With this upgrade and a 25-foot wider runway, Borrego

Valley would meet Regional General Aviation airport minimums. Fallbrook Community Airpark's runway is 540 feet below Community General Aviation Airport minimum standard length and 15 feet too narrow. It also lacks visual approach slope indicator equipment and 24-hour on-field weather services. However, a runway extension at Fallbrook is considered doubtful due to terrain and encroaching development considerations.

### **Limited Use Airports**

Agua Caliente Springs, Jacumba, and Ocotillo airports are the region's three Limited Use airports. All three airports meet Limited Use minimum standards, though the weight limit of Ocotillo Airport's dirt runway is uncertain. All three facilities are not listed in the FAA's NPIAS and thus are not eligible to receive federal funding for airport improvements.

### **Enhancement Need Prioritization**

The airports below are considered the region's highest priority facilities in terms of system capacity and safety enhancement:

- McClellan – Palomar
- Montgomery
- Gillespie
- Brown
- Ramona
- Borrego Valley
- Fallbrook

Enhancements at the three Non-NPIAS airports are worthy of extra consideration since they are not eligible for federal funding.

Table 11

REGION 9 SAN DIEGO - Enhancement Needs and Estimated Costs														Total Estimated Costs For All Regional Projects: \$4.25 Million		
FACILITY AND MINIMUM STANDARDS MINIMUM STANDARD FOR CLASSIFICATION SHOWN IN SECTION HEADER (EXCEPT RUNWAY LENGTH)	MINIMUM STANDARD RUNWAY LENGTH	LONGEST RUNWAY LENGTH	RUNWAY EXTENSION ESTIMATED COST	RUNWAY PAVEMENT CONDITION	RUNWAY PAVEMENT REHAB ESTIMATED COST	LONGEST RUNWAY WIDTH	RUNWAY WIDENING ESTIMATED COST	VASI PAPI INSTALLED	ESTIMATED COST TO ACQUIRE & INSTALL VASI/PAPI	AVAILBLE FUEL GRADES	ESTIMATED COST TO ADD DESIRED FUELING CAPABILITIES	LONGEST RUNWAY WEIGHT RATING	AWOS/ASOS (AUTOMATED WEATHER SERVICE)	COST TO ACQUIRE & INSTALL DESIRED AWOS/ASOS	MOST PRECISE INSTRUMENT APPROACH PROCEDURE	
<b>PRIMARY COMMERCIAL SERVICE NON-HUB</b>				<b>GOOD</b>		<b>150</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>50k SW</b>	<b>YES</b>		<b>ILS</b>	
MC CLELLAN - PALOMAR	7000	4900	\$1,100,000	GOOD		150		PAPI		100LLA		60000	YES		ILS	
<b>METROPOLITAN GENERAL AVIATION</b>				<b>GOOD</b>		<b>100</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>25k SW</b>	<b>YES</b>		<b>GPS/VOR</b>	
MONTGOMERY FIELD	5000	4577	\$220,000	GOOD		150		VASI		100LLA		12000	YES		ILS	
<b>REGIONAL GENERAL AVIATION</b>				<b>GOOD</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LLA</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>	
BROWN FIELD	4700	7999		GOOD		150		NONE	\$60,000	100LLA		80000	YES		GPS	
GILLESPIE FIELD	4700	5341		GOOD		100		PAPI		100LL80	\$50,000	90000	NONE	\$100,000	GPS	
OCEANSIDE MUNICIPAL	4700	2712	TBD-Terrain	GOOD		75		NONE	\$60,000	100LL		12000	YES		GPS	
RAMONA	4900	5000		FAIR	\$1,880,000	150		PAPI		100LLA		75000	YES		GPS	
<b>COMMUNITY GENERAL AVIATION</b>				<b>FAIR</b>		<b>75</b>		<b>VASI/PAPI</b>		<b>100LL</b>		<b>12500</b>	<b>YES</b>		<b>GPS/VOR</b>	
BORREGO VALLEY	3800	5000		GOOD		75		PAPI		100LL		30000	NONE	\$100,000	GPS	
FALLBROOK COMMUNITY AIRPARK	3900	2160	TBD-Terrain	FAIR		60	\$110,000	NONE	\$60,000	100LL80		12000	NONE	\$100,000	GPS	
<b>LIMITED USE</b>				<b>FAIR</b>		<b>60</b>		<b>NONE</b>		<b>NONE</b>		<b>12500</b>	<b>NONE</b>		<b>NONE</b>	
<b>AGUA CALIENTE SPRINGS</b>	2800	2500	\$60,000	GOOD		60		NONE		NONE		12000	NONE		NONE	
<b>JACUMBA</b>	3500	2510	\$350,000	GOOD-grvl		100		NONE		NONE		12000	NONE		NONE	
<b>OCOTILLO</b>	2500	4210		GOOD-dirt		150		NONE		NONE		Unknown	NONE		NONE	
Estimated Regional Cost Totals (by project type)			\$1,730,000		\$1,880,000		\$110,000		\$180,000		\$50,000			\$300,000		
<b>LEGEND:</b> RED TEXT – DOES NOT MEET MINIMUM STANDARD <b>BOLD ITALIC TEXT – NON-NPIAS FACILITY</b> ALL LENGTHS ARE IN FEET, WEIGHT REFERENCES IN POUNDS SEE GLOSSARY FOR ACRONYM AND TERM DEFINITIONS																

**SECTION II:**

**CALIFORNIA PRIMARY  
COMMERCIAL SERVICE  
HUB AIRPORTS**

# California's Primary Commercial Service Hub Airports

## State System Overview

There are thirteen Primary Commercial Service Hub airports in the State of California, out of 422 in the U.S. Nine of these thirteen facilities are located in either the Bay Region (3) or the Los Angeles / Desert region (6). The remaining four facilities service other large population centers of Fresno, Sacramento, San Diego, and Santa Barbara. Though relatively few in number, there is no doubt regarding the critical role they play in California's and the Nation's Air Transportation System. These thirteen facilities are listed below with their 2001 enplanements, the percent of the U.S. total enplanements, and national ranking in terms of enplanements:

Airport	2001 Enplanements	Pct. U.S. Total.	U.S. Rank
Los Angeles International Airport	29,365,436	4.44	3
San Francisco International Airport	16,475,611	2.49	8
San Diego International Airport	7,506,320	1.14	30
Norman Y. Mineta San Jose International Airport	5,981,440	0.90	34
Metropolitan Oakland International Airport	5,566,100	0.84	37
Sacramento International Airport	4,021,102	0.61	44
John Wayne – Orange County Airport	3,688,304	0.56	45
Ontario International Airport	3,168,975	0.48	52
Bob Hope (Burbank – Glendale – Pasadena) Airport	2,250,685	0.34	62
Palm Springs International Airport	586,028	0.09	100
Fresno Yosemite International Airport	457,570	0.07	111
Santa Barbara Municipal Airport	363,581	0.05	128
Long Beach Airport/Daugherty Field	297,130	0.04	143
<b>TOTALS</b>	<b>79,728,282</b>	<b>12.05</b>	

Source: FAA ACAIS Reports (CY 1999-2001)

California's Primary Hub airports served approximately 12% of all passengers enplaned at the nations airports, with Los Angeles International and San Francisco International serving nearly 7% combined.

## Industry Overview

The commercial aviation industry worldwide, and the airports on which the industry depend, are facing economic challenges unprecedented in the history of commercial aviation. Industry analysts have postulated that airlines have lost more money collectively in the last five to ten years than was lost in all the preceding 70 plus years combined! This has already impacted airports in several ways: reduced revenues from landing fees, vehicle parking, terminal leases; worsening bond ratings, delayed and or cancelled capital improvement projects. These impacts are coming as facilities are reaching their limits in terms of terminal, airfield, and airspace capacity and their ability to safely and effectively accommodate the needs of travelers and cargo shippers that depend on them. Easing capacity constraints resulting from post 9/11 industry impacts, economic recession, and industry impacts arising from the war in Iraq are only temporary effects that cannot begin to offset the more significant negative impacts. Even while many airports specializing in domestic travel have already rebounded to exceed pre-2001 passenger volumes, many specializing in international travel and freight have and continue to see serious drops in traffic. Are these changes temporary effects or do they represent

serious and permanent shifts in the commercial aviation marketplace? While it is too soon to say with any certainty, there is one unmistakable growth trend that was firmly entrenched prior to 2001: The demand for low fare air carrier service and the apparent inability of traditional major carriers to counter them profitably. In addition to providing service eliminated by other major airlines, carriers such as Southwest Airlines and Jet Blue have been able to actually provide new service to accommodate latent demand in markets either long dominated by major airlines or in areas where no previous service existed. Built on low labor and operations costs, fleet uniformity, and avoiding direct competition with major carriers in their primary markets, these carriers may be uniquely suited to weather turbulent economic periods. However, even these carriers have experienced temporary decreases in load factors and profitability. Their success in a recovered economy may depend in large part on the ability of traditional major carriers to survive until economic prosperity returns and the degree to which major carriers can compete in the areas low fare carriers excel.

Air cargo is also of critical importance to the state's and the nation's economy. Over 8 million tons of landed air cargo passed through California airports in 2001, nearly 12% of all U.S. air cargo. As passenger numbers again rise, air cargo operators based at primary commercial service hub airports may increasingly seek out other options such as former military bases with long runways, available land, and multi-modal surface access. The availability of these facilities (included in Section I discussion) to such operators presents a valuable opportunity to expand passenger capacity at primary commercial service hub airports and optimize overall state system capacity.

The outcome of these challenges will have a great deal to do with the immediate and future capacity needs of the state's Primary Commercial Service Hub airports. This in turn will directly relate to the nature and number of infrastructure improvements required at those 13 California facilities listed above.

With so much uncertainty in the industry, it is still important to analyze the various capacity enhancing infrastructure needs of Primary Commercial Hub airports in California. An interesting point supporting this is that in spite of the overall decrease in passenger traffic, California's share of overall passenger traffic has remained very steady, at around 12% of total U.S. passengers. A review of airport master plans provides some insight as to how the airports plan to address the constraints on their facilities. However these plans do not take into account the needs of the system of California airports. Therefore, the focus of this section is to identify need areas that impact the system and to suggest some alternative means of addressing them by utilizing excess capacity where it's available. As in the other sections, each region with a Primary Commercial hub airport will be reviewed with a focus in system infrastructure needs.

### **Airport Enhancement Needs by Functional Classification**

#### **Primary Large Hub Metropolitan Airports**

There are three Primary Large Hub Metropolitan Airports in the state: Los Angeles International, San Diego International, and San Francisco International. All meet minimum standards except for Los Angeles International, which has a longest runway fifty feet too narrow. However the current Master plan calls for runway, taxiway, and terminal enhancements in order to accommodate future large aircraft. Thus rendering this current need insignificant. In 2001, the FAA completed the Airport Capacity Benchmark Report that targeted the relationship between airline demand and airport runway capacity at 31 of the nation's busiest airports, including Los Angeles International, San Diego International, and San Francisco International. References to the report's findings on these three airports are made in the discussion on each individual airport.

#### **Primary Medium Hub Metropolitan Airports**

There are six Primary Medium Hub Metropolitan Airports in the state: Bob Hope Airport (formerly Burbank-Glendale-Pasadena Airport), John Wayne-Orange County Airport, Metropolitan Oakland International Airport, Norman Y. Mineta San Jose International Airport, Ontario International Airport, and Sacramento International Airport. Both Burbank and John Wayne airports' longest runways are bounded by development to the extent that extensions to meet minimum standards are not feasible. Even if they were, community opposition to any such enhancement that could lead to increases in aircraft operations, size, noise and/or air quality impacts noise would be vehemently opposed. While these enhancements are desirable from a capacity point of view, they are even more critical from a safety standpoint. Previous accidents have illustrated the impact factors such as insufficient runway length, poor separation between runways, taxiways and terminal gate areas, and lack of appropriate associated protection zones can have on the degree of adverse outcomes arising from an accident or incident. Rated weight limits of the longest runways at both Burbank and Ontario airports are questioned.

#### **Primary Small Hub Metropolitan Airports**

There are four Primary Small Hub Metropolitan Airports in the state: Fresno-Yosemite International Airport, Long Beach Airport, Palm Springs International Airport, and Santa Barbara Municipal Airport. Of note, Palm Springs' need to have another instrument approach procedure should be nullified once the FAA installs an ILS approach as anticipated sometime in the next few years. To a degree, the criticality of this need is mitigated by the fact that Palm Springs Airport only experiences instrument meteorological weather conditions about 5% of the year. Still, operations during that 5% of the time will be enhanced once a second instrument approach procedure is in place.

Table 12

## COMMERCIAL-PRIMARY HUB AIRPORTS

FACILITY AND MINIMUM STANDARDS MET/UNMET	LONGEST RUNWAY LENGTH	RUNWAY PAVEMENT CONDITION	LONGEST RUNWAY WIDTH	VASI PAPI INSTALLED	AVAILABLE FUEL GRADES	LONGEST RUNWAY WEIGHT RATING	ON FIELD WEATHER SERVICES	INSTRUMENT APPROACH PROCEDURE	NUMBER OF INSTRUMENT APPROACHES
<b>COMMERCIAL PRIMARY LARGE HUB</b>									
LOS ANGELES INTERNAT'L	12091	CONC-G	150	VASI	100LLA	175000	YES	ILS	15
SAN DIEGO INTERNATIONAL	12091	CONC-G	200	PAPI	100 100LLA	100000	YES	ILS	4
SAN FRANCISCO INT'L.	11870	ASPH-G	200	PAPI	100LLA	60000	YES	ILS	11
<b>COMMERCIAL PRIMARY MEDIUM HUB</b>									
BOB HOPE AIRPORT (BURBANK- GLENDALE-PASADENA AIRPORT)	6885	ASPH-G	150	PAPI	100LLA MOGAS	30000	YES	ILS	7
JOHN WAYNE - ORANGE CO.	5700	ASPH-G	150	VASI	100LLA	70000	YES	ILS	8
METRO. OAKLAND INT'L.	10000	ASPH-G	150	VASI	100LLA	200000	YES	ILS	11
NORMAN Y. MINETA SAN JOSE INT'L	11000	CONC	150	PAPI	100LLA	60000	YES	ILS	9
ONTARIO INTERNATIONAL	12198	CONC-G	150	PAPI	100LLA	30000	YES	ILS	12
SACRAMENTO INTERNATIONAL	8600	ASPHCO NC	150	PAPI	100LLA	100000	YES	ILS	8
<b>COMMERCIAL PRIMARY SMALL HUB</b>									
FRESNO YOSEMITE INTERNATIONAL	9222	ASPH-G	150	VASI	100 A	70000	YES	ILS	9
LONG BEACH (DAUGHERTY FIELD)	10000	ASPH-G	200	PAPI	100LLA	30000	YES	ILS	4
PALM SPRINGS INTERNATIONAL	9375	ASPH-G	150	VASI	100LLA	105000	YES	GPS	1
SANTA BARBARA MUNI.	6052	ASPH-G	150	VASI	100LLA	110000	YES	ILS	2
LEGEND: BLACK TEXT Meets Minimum Standard    RED TEXT – Enhancement Need Area GRAY CELL – Unknown/Unverified data									

## **Bay Area Region Primary Commercial Hub Airports**

### **Regional Overview**

Of the three Primary Commercial Hub Airports in the region, San Francisco International (SFO) is the dominant facility and serves as a vital link between domestic and international operations. San Jose and Oakland have picked up an increasing share of international operations as SFO's operations capacity has approached maximum, but both remain primarily domestic hubs.

### **Facility Overview**

#### **San Francisco International (SFO)**

SFO is owned and operated by the county and city of San Francisco, yet is located on 5,270 acres in San Mateo County. The airfield system occupies approximately 1,700 acres. Due to the proximity of parallel runways to one another, the airport faces recurring periods of reduced operations capacity during times when operations must be conducted under instrument meteorological conditions, a frequent occurrence. During such times, operations are constrained to 30 per hour instead of 60 per hour conducted during conditions of good weather. The FAA's 2001 Capacity Benchmark Report ranked SFO fourth worst in terms of the number of flights delayed more than 15 minutes, and second worst in total arrival delay. Additionally, the report stated demand was expected to grow faster than capacity, resulting in even more frequent and longer delays. The study also identified airline aircraft fleet mix as a critical determinant of capacity at SFO. Capacity concerns led the airport to undertake a runway reconfiguration study in 1998 that proposed a number of alternatives to maximize operations capacity during times of inclement weather. Most of the preferred alternatives would cause significant environmental impacts on habitats near the airport, and thus were challenged. The study has been placed on indefinite hold due to these issues and political and post 9/11 economic realities. Addressing this still-anticipated capacity shortfall remains a top future priority for this facility.

#### **Metropolitan Oakland International Airport (OAK)**

OAK is located on 2,445 acres operated by the Port of Oakland. The airfield is unique in its layout and operation. The airport operates almost as two separate airports with their respective air traffic control towers. The south airfield consists of a single air carrier runway for air carrier aircraft. The north airfield has three runways for GA use. On a smaller scale, Oakland faces many of the same capacity constraints facing San Francisco. Proposals for a second air carrier runway regularly suggest the option of filling in areas of the bay to accommodate a second air carrier runway. Naturally, the same environmental concerns that instilled resistance to SFO's reconfiguration study are likely to impede the ability of Oakland to win support for such an alternative.

#### **Norman Y. Mineta San Jose International Airport (SJC)**

Operated by the City of San Jose, SJC is located on approximately 1,000 acres. The lack of additional land is a constraint on the airport's future expansion. To accommodate the commercial aviation growth as specified within its Master Plan, SJC will eliminate some of the existing GA facilities, convert existing non-aviation land uses to aviation purposes, and construct multi-level parking garages in place of surface parking. A recently completed extension to one runway's overrun areas at each end provides additional capacity by enabling large air carrier aircraft to operate at their maximum fuel and passenger loads on international flights to and from the airport.

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## **Central California Region Primary Commercial Hub Airports**

### **Regional Overview**

The region has two Primary Commercial Hub airports: Sacramento International and Fresno Yosemite International. In addition to those facilities, the following six airports provide regularly scheduled passenger service: Meadows Field, Modesto City-County, Merced Municipal, Stockton Metropolitan, Visalia Municipal, and Inyokern.

### **Facility Overview**

#### **Sacramento International Airport (SMF)**

Sacramento International Airport is the primary air carrier airport in the Central California Region. Sacramento International Airport completed construction of a new passenger terminal in 1998. This terminal has the capacity to provide up to 22 new passenger gates. With the new terminal, the airport has a service capacity of some 8,420,000 annual enplanements, or 16.8 MAP. The airport has a \$70 million parking garage under construction to be completed in 2004.

#### **Fresno Yosemite International Airport (FAT)**

Fresno Yosemite International Airport is the second busiest airport in the Central California Region. The growing presence of regional jet airliners throughout the industry has meshed with Fresno's growth process quite well and the airport has become an ever more important commercial transportation node in the central California Region. At the same time, the airport's well-rounded facilities and central location continue to appeal to a wide range of general aviation operators. The airport also hosts a fighter wing from the California Air National Guard and a major Army National Guard helicopter maintenance facility.

## **Central Coast Region Primary Commercial Hub Airports**

### **Regional Overview**

Of the 14 public-use airports in the Central Coast region, Santa Barbara Municipal is the only Primary Commercial Service Hub airport. Additionally, Monterey Peninsula, San Luis Obispo, and Santa Maria all have regularly scheduled passenger service.

### **Facility Overview**

#### **Santa Barbara Municipal Airport**

Santa Barbara Municipal Airport has recently completed airfield improvements and has planned a terminal expansion. With both, the facilities' capacity is expected to be adequate for future growth.

## **Los Angeles / Desert Region Primary Commercial Hub Airports**

### **Regional Overview**

This region is the most populated in the state and supports the world's largest and most complex regional aviation system. Regional aviation capacity issues will reach the critical stage in this region before any other region in California. The Southern California Association of Government's 2001 Regional Transportation Plan's Aviation Element identified capacity expansion at Los Angeles International and new capacity available through the anticipated conversion of El Toro from military to commercial use as the primary means to address the rapidly growing regional demand for commercial air service, estimated to be 167.9 million annual passengers by 2025. Since then, local ballot measures passed specifying that El Toro be converted to a regional park rather than a commercial service airport. Additionally, as a result of security concerns the proposed preferred alternative in Los Angeles International Airport's Master Plan was amended to provide enhancements to security and safety without growing the airport. Capacity expansion is capped at 78 MAP under this alternative. Together, these changes reduced the passenger capacity SCAG was projecting for the region by approximately 50 MAP (29.7%). Obviously, making up this capacity gap presents a great challenge. With so many commercial service facilities in the region, the opportunity exists to implement an effective regional approach to meeting regional commercial air service demand. However, contrasting public opinion's and goals of various airport sponsors make obtaining regional consensus difficult. Even with a regional consensus, necessary cooperation from airlines may be difficult if not impossible to obtain.

### **Facility Overview**

There are six Primary Commercial Hub airports in the Los Angeles Desert Region: Burbank-Glendale-Pasadena, John Wayne-Orange County, Long Beach, Los Angeles International, Ontario International and Palm Springs International.

#### **Los Angeles International Airport (LAX)**

The FAA's 2001 Capacity Benchmark Report indicated that current capacity was generally adequate except during adverse weather conditions. However, projected growth of demand at LAX was expected to significantly increase delays. As previously mentioned, the 2003 preferred master plan alternative would improve safety and security but limit growth of the airport to 78 MAP. The airport currently operates at around 68 MAP. The improvements related to capacity expansion (and safety) have mainly to do with adding aircraft gates and increasing runway, taxiway, and gate dimensions to accommodate very large commercial jetliners, including the 500-800 seat Airbus A380 scheduled to enter service in 2005. Airfield efficiencies to be gained from improved ground handling are also seen as enhancing capacity.

#### **Ontario International Airport (ONT)**

The airport opened a \$269 million 26-gate terminal complex in September 1998. The new terminal doubles the existing capacity of the airport and can handle up to 10 million passengers per year. The old terminal built in 1961 was designed to serve three million passengers per year. Ontario is currently in the process of determining the future of the old terminal complex, whether it will be remodeled or torn down. The airport is currently under a restriction imposed by the California Air Resources Board to limit the number of passengers to 12 MAP, or 125,000 aircraft operations per year. This is not necessarily permanent, as long as an acceptable air quality mitigation plan is submitted for a new air quality permit. Ontario is expected to carry an increasing share of passengers from the growing Riverside and San Bernardino Counties, especially since El Toro is not to be developed as an airport.

Bob Hope Airport (formerly Burbank-Glendale-Pasadena Airport) (BUR)

The airport's plan to relocate to a new larger passenger terminal further from the runways has been put on hold. These enhancements have little to do with improving capacity, though they are critical to improving safety. The airport operates under a voluntary curfew, and noise issues have been the source of much debate and litigation.

John Wayne Airport, Orange County (SNA)

The airport has not completed any capacity enhancement projects within the last two years, nor are there any future projects. The current passenger cap agreement sunsets in 2005 and is to be extended and include an expansion of passenger capacity to 10.3 million annual passengers (MAP) until 2011 when it would be increased to 10.8 MAP.

Long Beach Airport/Daugherty Field (LGB)

Long Beach has seen its passenger traffic grow steadily, though it is constrained by a cap on aircraft slots (41/day). This limitation is rooted in noise concerns. For a time many slots went unused. Recently however, Jet Blue, Alaska/Horizon, and American Airlines have been granted use of several of these slots, opening new markets at the facility. A new terminal is considered a high priority. Capacity expansion may depend on an interpretation of noise ordinances that might allow more flights as long as the aggregate noise level is not increased.

Palm Springs International Airport (PSP)

The airport recently completed remodeling the passenger terminal. This project added eight new gates along with 640,000 square feet of additional space to the present terminal layout. As part of this expansion, one of the runways was extended an additional 1,500 feet.

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## **San Diego Region Primary Commercial Hub Airports**

### **Regional Overview**

San Diego International is the region's only primary commercial hub airport. It and McClellan-Palomar are the only two airports in the region that receive regularly scheduled passenger service. San Diego County faces a commercial airport capacity shortfall in the next 20 years. The newly formed San Diego County Regional Airport Authority is the lead agency on the Air Transportation Action Plan. Its purpose is to identify and put to a public vote the best strategy for servicing regional demand for air transportation, by expanding San Diego International, other existing airports, building a new airport, or any combination thereof.

### **Facility Overview**

#### **San Diego International Airport (SAN)**

San Diego International Airport is the region's only Primary Commercial Hub Airport. According to the 12/2/98 San Diego International Airport *Draft Master Plan Working Paper No. 1 (Inventory)*, the airport is the busiest one-runway commercial service airfield in the country in terms of runway utilization. Located on approximately 600 acres, the airport is severely constrained in terms of increasing capacity and also by surrounding incompatible land uses. Its downtown location is convenient for the majority of travelers passing through it, but means that it is surrounded by developed land and its operations inevitably impact local residents. In fact, a night curfew resulting from these noise impacts presents a further capacity constraint. The airport's sponsor, the newly created San Diego County Regional Airport Authority has continued the process of identifying and selecting the best alternative approaches to meeting regional commercial air service demand through 2030 through the Air Transportation Action Plan. The date for the release of the final draft report has not been released as of yet. In the interim, the master plan has specified terminal and gate expansions, including new facilities on the north side of the airport, to increase capacity. The FAA's 2001 Capacity Benchmark Report identified SAN as generally doing well to meet demand, though future growth in demand may increase delays somewhat.

# APPENDICES

## APPENDIX 1

**Functional Classification of Airports**

Public use airports are classified different ways by different agencies for different purposes. The following definitions will describe the details and illustrate the differences between the classification systems utilized by the FAA and the Department.

**DEPARTMENT**

**Limited Use Airports** – Airports that provide limited access; usually located in non-urban areas; may be used for a single purpose; have few or no based aircraft; and provide no services.

**Community Airports** – Airports that provide access to other regions and states; located near small communities or in remote locations, serve, but are not limited to, recreational flying, training, and local emergencies; accommodate predominately single engine aircraft under 12,500 pounds, provide basic or limited services for pilots or aircraft.

**Regional Airports** – Airports that provide the same access as Community airports, may provide international access; located in an area with a larger population base than Community airports with a higher concentration of business and corporate flying; accommodate most business, multi-engine, and jet aircraft, provide most services for pilots and aircraft including aviation fuel; has a published instrument approach, may have a control tower.

**Metropolitan Airports** – Airports that serve the same activity as regional airports; are located in urbanized areas; provide for the same flying activities as Regional airports with an emphasis on business, charter, and corporate flying, accommodate all business jet and turboprop aircraft with a higher level of activity than Regional airports; provide full services for pilots and aircraft, including jet fuel; has a published instrument approach and a control tower; provides flight planning facilities

**FAA**

**Commercial Service** – Airports having scheduled passenger service and more than 2,500 annual enplanements.

**Primary** – Airports having more than 10,000 annual enplanements

**Primary Large Hub** – Airports having more than 1% of total national annual enplanements.

**Primary Medium Hub** – Airports having between 0.25% and 0.99% of total national annual enplanements.

**Primary Small Hub Airports** – Airports having between 0.05% and 0.25% of total national annual enplanements.

**Primary Non-hub Airports** – Airports having less than 0.05% total national annual enplanements.

**Other Commercial Service Airports** – Airports enplaning between 2,500 and 10,000 passengers annually

**Relievers** – High capacity general aviation airports in metropolitan areas.

**General Aviation** – Airports with no commercial service and located at least 20 miles from the nearest NPIAS airport that account for sufficient activity (usually 10 based aircraft).

**Non-NPIAS** – Public owned, public use airports that do not meet any of the above criteria or are located at inadequate sites and cannot be expanded and improved to provide safe and efficient airport facilities and private use. Also Non-NPIAS are privately owned, public use airports that are not included because they are located at inadequate sites, are redundant to publicly owned airports, or have too little activity to qualify for inclusion. In addition, almost 14,000 civil landing areas that are not open to the general public are not included in the NPIAS.

## Appendix 2

**Glossary of Terms from Enhancement Need-Cost Tables**

Longest Runway Length – Length in feet of longest currently used runway at the specific airport.

Runway Extension Cost Estimate

TBD – To Be Determined (used where extension requires such significant investment that its feasibility is doubtful. Reasons for such a determination include:

Terrain – Would require removing/adding significant material such as earth and rocks

Land – Required land not available due to encroachment of development

Enviro. – Unavoidable and difficult or impossible to mitigate environmental impacts

Runway Pavement Condition – General descriptive category of runway surface type and condition:

TRTD – Treated, as in a non-paved serviced treated with oil to provide smoother stronger surface with less likelihood of foreign object related aircraft damage.

ASPH – Asphalt paved runway

CONC – Concrete runway surface

GRVL – Gravel runway surface

TURF- Grass runway surface

DIRT – Dirt runway surface

G – Good condition

F – Fair Condition

P - Poor Condition

Longest Runway Width – Current width of the longest runway at a given airport

VASI – Visual Approach Slope Indicator

PAPI – Precision Approach Path Indicator

AWOS- Automated Weather Observing System

ASOS- Automated Surface Observing System

ILS – Instrument Landing System – precision (vertical and horizontal position) instrument approach utilizing on airport radio navigation aids and in aircraft navigation displays to assist pilots in making landings during periods of very low visibility and cloud ceilings.

VOR- Very High Frequency Omni Directional Range Station – Radio navigation aid used for enroute and instrument approach/departure navigation. Non-precision in that no vertical navigation is provided.

GPS – Global Positioning System – Satellite based navigation aid and instrument approach

Providing non-precision (for now) guidance to runway.

LOC – Localizer – Horizontal navigation portion of ILS. When operated alone, the localizer provides non-precision navigation guidance to runway

LDA – Localizer type Directional Aid – Localizer equipment set up so that guidance is provided to runway along final approach course that is not aligned with the centerline of the runway.

TLS – Transponder Landing System – New technology approach navigation system designed to provide horizontal and vertical guidance in locations not suitable for ILS.

Appendix 3

FAA AC 150-5325-4A Figure 2-1

AC 150/5325-4A

1/29/90

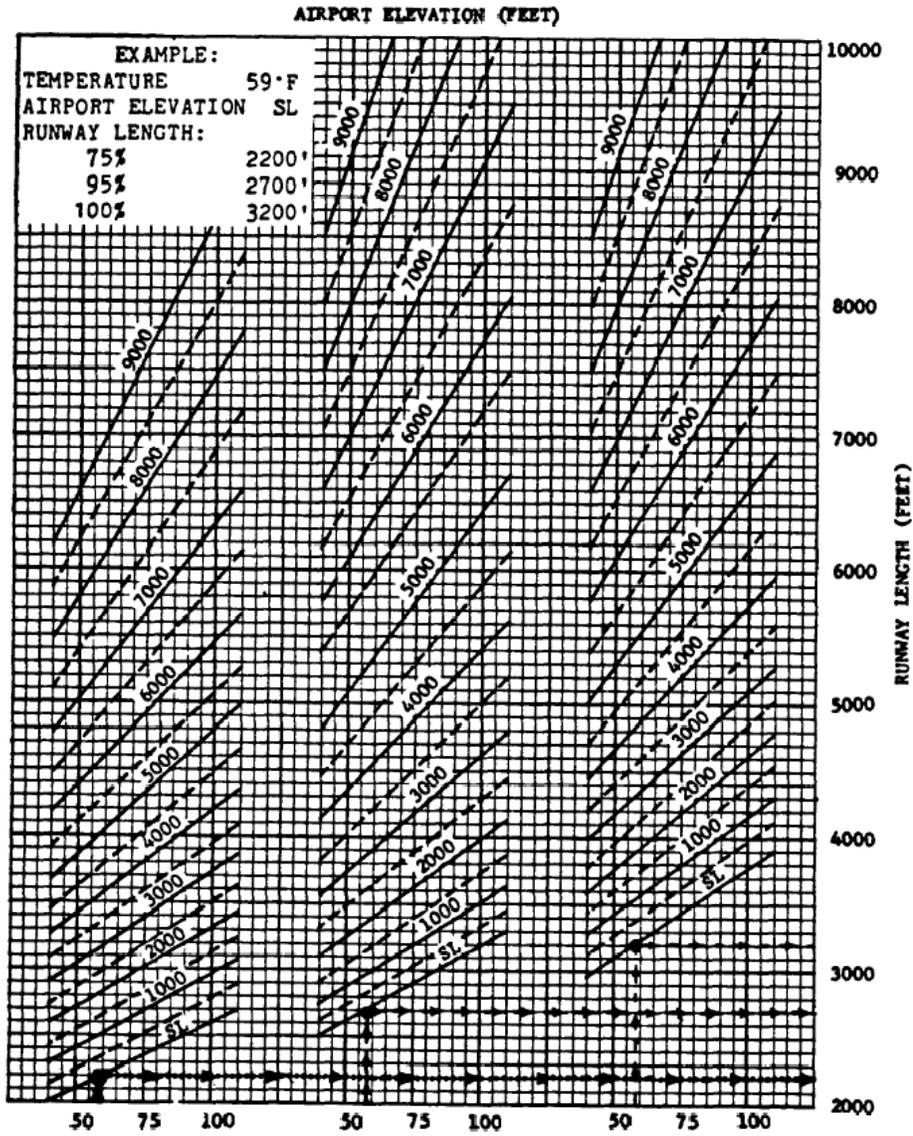


Figure 2-1. Runway length to serve small airplanes having less than 10 passenger seats

Appendix 4

FAA AC 150/5325-4A Figure 2-4

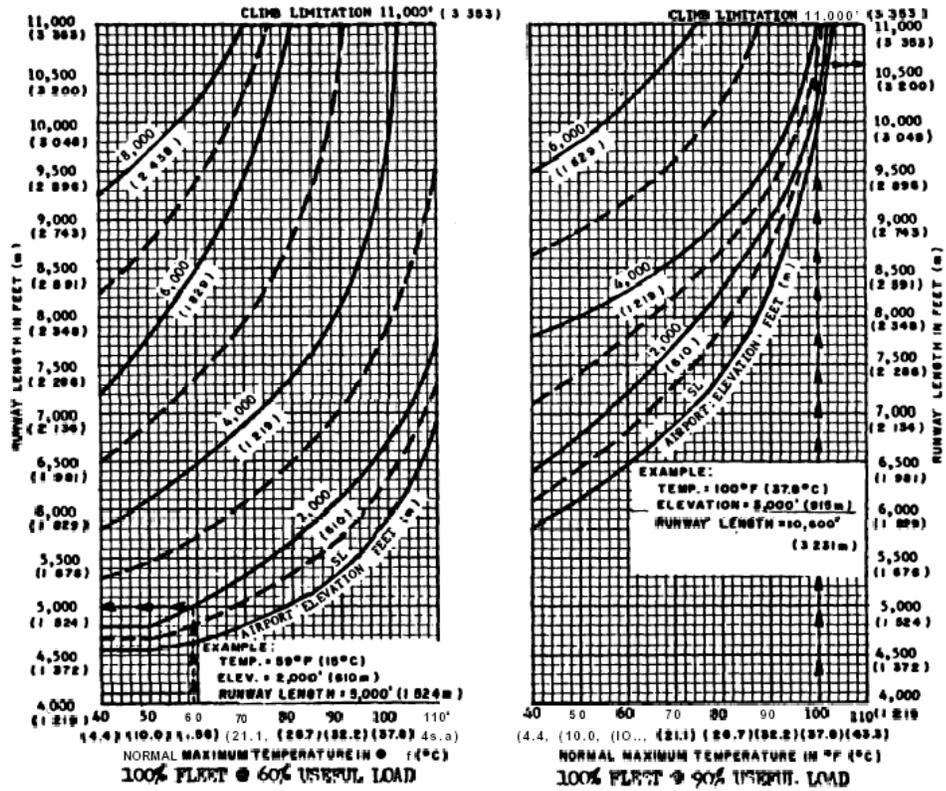


Figure 2-4. Runway length to serve 100% of large airplanes of 60,000 pounds (27,200 kg) or less

1/29/

AC 150/5325-4A

Appendix 5

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