California Aviation System Plan

Policy Element

State of California Department of Transportation - Division of Aeronautics

October 2011

CALIFORNIA AVIATION SYSTEM PLAN
2011 POLICY ELEMENT

Edmund G. Brown Jr., Governor
State of California

Traci Stevens, Acting Secretary
Business, Transportation & Housing Agency

Malcolm Dougherty, Acting Director
California Department of Transportation

Martin Tuttle, Deputy Director
Planning and Modal Programs

Report Issued by:

Gary Cathey, Chief
Division of Aeronautics

Terry L. Barrie, Chief
Office of Aviation Planning

California Department of Transportation
October 2011

Table of Contents

	Page
Executive Summary	E-1
Section I – Guiding Principles	
Introduction to the Policy Element	1-1
Update of the Policy Element	1-1
Regulatory and Policy Hierarchy	1-4
State of California	1-5
Federal Government	1-19
Division of Aeronautics	1-20
Section II – Policies, Goals, Implementation and Performance	
Introduction	2-1
Stewardship and Preservation	2-2
Safety	2-5
Mobility	2-8
Airport Integration in Land Use Planning	2-11
Economics	2-14
Environment	2-17
Education and Research	2-20
List of Tables	
Table 1-1: Aeronautics Account Funding Sample	1-24
Table 1-2: NPIAS and CASP Airport Functional Classification Categories and Subcategories	1-27
List of Figures	
Figure 1-1: 10-Year Summary of Federal and State Aviation Grant Investments	1-24
Figure 1-2: California Aviation Tax Revenue Sources and Distribution (FY 2007-08)	1-25
Appendices	
Appendix 1: Glossary	
Appendix 2: Acknowledgements and Credits	

Executive Summary

The Policy Element (PE) is the primary document that explains and guides the business of the Division of Aeronautics (Division) that is housed in the California Department of Transportation (Caltrans). The Division's primary duties and functions are defined by statute codified in the State Aeronautics Act (originally the State Aeronautics Commission Act of 1947) and published in the California Public Utilities Code, Section 21001 et seq. The PE is one of multiple elements that comprise the larger California Aviation System Plan (CASP), the means by which continuous aviation system planning is conducted by the State. CASP elements are revised on approximately a five-year cycle with the last Policy Element update published in 2006.

The Division considers promoting a safe aviation environment for pilots, passengers, and persons on the ground its most important obligation. It achieves this by applying one simple axiom, limit the number of people exposed to potentially hazardous conditions. Applying this concept to planning, designing, and flying positively influences a safe experience for all direct and indirect beneficiaries of aviation. The Division's most visible safety efforts are the airport and heliport inspections conducted by the Office of Airports. Our Aviation Safety Officers work with airport operators to keep their facilities consistent with State and Federal Aviation Administration (FAA) safety standards. Additionally, the Office of Aviation Planning is involved with land use compatibility planning around airports.

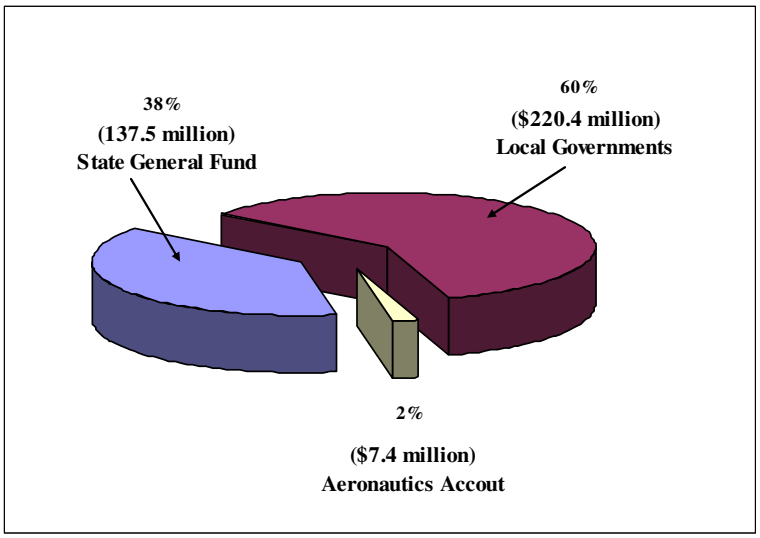
In addition to safety mandates outlined by the FAA and the State Aeronautics Act (Aeronautics Act), the Division conducts planning and engineering studies that help channel its aviation mission within Caltrans' multimodal transportation planning organization. How this is done depends on the nature of the transportation program. Some programs, such as Complete Streets, require little Division participation since this road-design concept has limitations in most airport access discussions. In such cases, the Division asks facility planners to consider not only traditional freight and passenger movements, but also the mobility needs of employees who work at the airport. Conversely, ensuring that airports are integrated in regional transportation solutions, such as those addressed in Regional Transportation Plans or the California Interregional Blueprint (CIB), require much more involvement. These key Caltrans transportation initiatives are highlighted in this document with a summation of the Divisions potential role and/or influence. Policies were then refocused to help steer the Division in a direction that not only advances aviation safety and capabilities, but also complements Caltrans' multimodal transportation planning efforts.

To separate planning and policy discussions, the PE is organized into two sections. Section 1: Guiding Principles, explains the Division's federal, State, and Caltrans priorities, introduces how Caltrans' programs may affect aviation in the State, and identifies appropriate support activities for the Division. It also provides clarification of some of the more common misperceptions about the Division and how it may interact with key partners. The last part of this section gives an overview of how the Division operates. Section 2: Policies, Goals, Implementation and Performance, outlines the seven major policy areas and their corresponding objectives that reflect the goals of the Division. These seven policies include: Stewardship and Preservation, Safety, Mobility, Airport Integration in Land Use Planning, Economics, Environment, and Education and Research.

Funding for the State's Aeronautics Program is comparatively small for a codified State program deriving its resources solely from taxes paid by General Aviation (GA) users, outlined in Revenue and Taxation Code §8352.3. The Division is not funded from the State's General Fund or Caltrans itself. Specifically, of all the various aviation taxes levied on GA users, only GA fuel excise tax, collected at the rate of 2¢ per gallon for non-commercial jet fuel and 18¢ per gallon for aviation gasoline (avgas) is deposited into the Aeronautics Account. From this account the Division pays its various expenses and supports its grant programs.

Viewed historically, all taxes levied on GA users can collectively exceed $365 million in a given year, depending on the volume of GA activity. Yet of this total amount, only the excise fuel tax collected on GA aircraft and non-commercial jet fuel sales is deposited into the Aeronautic Account. These fuel excise taxes typically represent about two percent of all taxes levied on GA users; 38 percent of total taxes levied are deposited into the State's General Fund and 60 percent are allocated to local governments that supported programs such as transit, public safety, schools and special districts. This lack of reinvestment into GA from aviation user taxes is illustrated in Figure E-1 using data from fiscal year 2007-08. The two percent reinvestment back into aviation falls well short of the costs to fund safety, capacity and capability needs identified in the 2010-2019 Capital Improvement Plan and the 2010 General Aviation System Needs Assessment.

Figure E-1
California Aviation Tax Revenue Sources and Distribution (FY 2007-08)



To explain the distribution of monies in the Aeronautics Account, a typical annual deposit of GA fuel excise tax into the Aeronautics Account is approximately $7 million per year, depending on total fuel sales volume. Of the approximate $7 million available for State use, about $3 million is used for Division operating expenses leaving only $4 million for California Aid to Airports Program (CAAP) Programs including State AIP matching grants, A&D grants, and annual credits grants. The Aeronautics Account may also receive minor revenue from other sources including interest earned on its cash balance and sale of documents such as the State aeronautical chart. This flow of revenue and expenditure is shown in priority order, as required under Revenue and Taxation Code §8352.3, in Table E-1.

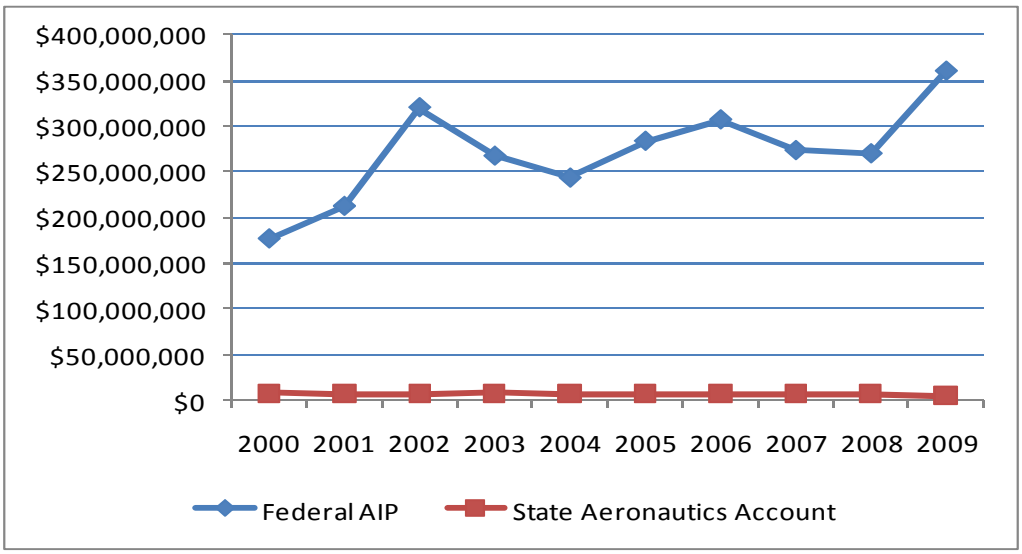
Table E-1
Aeronautics Account Funding Sample

$7m Revenue (Continuously Appropriated)
$3m Division Operations
$1.5m Annual Credit Grant
$1.5m AIP Matching Grants
$1.0m A&D Grants

With an average of only two percent of all aviation user taxes potentially reinvested back into aviation, the State's ability to adequately fund safety and critical infrastructure improvements will continue to go unmet without much needed legislative changes to the California Tax Code.

More important than the annual $2 million-$4 million potentially available from the State to airports is the funding provided by the FAA. The largest share of infrastructure funding is derived from the FAA, with the State largely leveraging these funds with matching grant monies. Figure E-2 shows the disparity in grant funding levels in California between the FAA and the State over the recent ten-year period. This summary shows how necessary FAA funds are to California airports. Equally important, the graph suggests why the State's Matching Grant program is critical to aviation. In the absence of State Matching Grants, many airports would not be able to leverage the billions of dollars of federal AID funds set aside for the State.

Figure E-2[1]
Ten-Year Summary of Federal and State Aviation Grant Investments



In summary, Caltrans has a strategy for integrating aviation into the State's larger multimodal transportation system, that being the CIB program. Although not all parts of the CIB are applicable to aviation, those that can be are intended to be included in statewide, regional and local transportation planning documents. The intent is to ensure a network of airports capable of

[1] Figures represent an average over the last ten years and fluctuate based on actual received aviation use taxes. The rate of use tax decline has been approximately 1.3 percent per year for the period 1999-2009.

maximizing the mobility and economic benefits that come from a healthy system of public use airports of all sizes and capabilities. Although limited State aviation funding compromises significant advancement opportunities, the goals, policies and efforts to improve our system of airports continues to reach for the greater benefits that come from a healthy aviation system.

Section 1
Guiding Principles

Section 1
Guiding Principles

Introduction to the Policy Element

The CASP PE is the basis for implementing the Aeronautics Act and identifying the Division's role in Caltrans' mission, vision and goals for a multimodal, interregional, transportation system. The PE is updated on approximately a five-year cycle with the last update published in 2006.

As well as outlining the priorities and functions of the Division, the PE also explains the cooperative relationship between federal and State programs that affect aviation in California. To tie various federal and State initiatives together, the CASP groups its policies and objectives into different "elements." Similar to a city or county General Plan that is comprised of multiple elements, the CASP is also comprised of multiple elements. It is the intent of the PE to serve as a type of business plan or overview that outlines the Division's major priorities and charts a course to carry out those priorities.

Update of the Policy Element

This update of the PE revisited the manner in which the policies and objectives of the Division have been expressed to the public. After reviewing PE's of the last 22 years, it was determined that the new generation of aviation and transportation professionals could benefit from a reiteration of the Division's core responsibilities that are enumerated in Public Utilities Code (PUC) §21001 et seq., the Aeronautics Act. These core responsibilities form the foundation of the policies found in this document and guide the daily business of the Division.

In addition to these statutory obligations, the Division participates in Caltrans directives as required. Thus, a secondary objective of the PE update is to ensure that during the current period of fiscal challenge, limited resources are first guided towards fulfilling statutory requirements while concurrently addressing Caltrans objectives. Providing effective policies and programs that convey who the Division is, what we do (and in some cases what we do not do), and why we do it, are of equal importance in this update.

The PE is organized into two sections:

- Section 1: Guiding Principles
  This section explains the Division's federal, State, and Caltrans priorities. It also provides clarification of some of the more common misperceptions of what the Division and its key partners do or do not participate in. Such clarification is helpful as the Division integrates its core functions with contemporary planning paradigms aimed at delivering greater multimodal and sustainable transportation solutions for California communities.

- Section 2: Policies, Goals, Implementation and Performance
  This section outlines the seven major policy areas, corresponding objectives and implementing actions that reflect the goals of the Division.

The seven policy areas are:

- Stewardship and Preservation
- Safety
- Mobility
- Airport Integration in Land Use Planning
- Economics
- Environment
- Education and Research

These seven policy or topical areas have been linked to the PUC to ensure the Division is meeting its statutory obligations. This section also outlines the desired or current actions to be implemented by the Division to address these policy goals. It also explains performance measures from which to discern progress towards meeting the stated policies. This update focuses on the Division's intent to match implementation actions with PE objectives. To that end, if additional information is needed to clarify how the Division will carry out PUC or Caltrans mandates before the next full PE update; supplements to this PE may be added.

A Brief History of the Division of Aeronautics

1947 Advertisement for a Cessna 190

Aeronautics as a State-level program has a long history going back to the close of World War II. The original legislation first creating the program was the State Aeronautics Commission Act of 1947 and capitalized on the boom of the State's aviation industry that had gained global attention. Coming late into civil aviation, 42 States had established State aviation agencies before California, even though the California State Legislature (Legislature) had considered legislation to establish some form of State aviation agency every year for the previous 20 years.

From its inception through the mid 1950's, support for the program had fluctuated with dramatic changes in priorities, staffing and funding. During the 1955-56 fiscal year, the program reached its all-time low for both budget and staff. The number of authorized positions was reduced to four and budget was reduced to under $50,000. Not until the early 1960's did the value of aviation see a resurgence with the Legislature through a slow increase in responsibly and funding emphasizing safety and airport infrastructure improvements. Operational funding for the Division was eventually secured by the Legislature in 1965 through General Aviation (GA) fuel excise tax revenues removing the program from the General Fund and any State department's budget; this practice continues today. By 1992, staffing for the aeronautics program had peaked at 37 persons. During this period the Division enjoyed the greatest number of planners, engineers, and pilots working with local sponsors on airport and aviation system improvements.

With an effective date of July 1, 1973, Caltrans was created and mandated to include a modal division for aeronautics. The former variants of the aeronautics program, ranging from a four-person staff to Department-level status in the former Transportation Agency (1967), evolved into the Division we see today and which has maintained its basic form since 1972. Although staffing has been reduced to 26 persons, the programs it administers have been maintained and new missions have been added to meet today's aviation safety, infrastructure, and planning needs. Caltrans and the Division continue to work towards a more robust statewide aviation system that will meet the multimodal transportation needs of California through the 21st century.

Role of the Federal Aviation Administration

Management of the California aviation system is complex. First, the State does not own or operate any public use airports. The airport sponsor is generally a city or county government that owns and operates the airport facility and is required to satisfy State and federal regulations. They may or may not receive federal funding, and are permitted and inspected by the Division using FAA standards. The Division provides environmental California Environmental Quality Act (CEQA) review, intermodal and aviation system planning, provides engineering assistance, develops airport land use planning guidance, and monitors the State's aircraft noise program. The FAA is responsible for all flight safety, aircraft worthiness, pilot health, air operations, airspace capacity, in-flight rules, and an airport's aviation engineering standards. This over-simplification highlights the key difference which is that the FAA supports airplanes, aeronautical activities and airport facilities, while the Division advocates for the benefits of the statewide aviation system, promotes safe aviation, and what both can do for California.

Additionally, the FAA certifies and performs safety compliance inspections of public use airports along with the Division. The FAA also regulates airspace, airport security, aircraft, pilots, maintenance programs and sets nationwide airport land use guidance. They also manage the Airport Improvement Program (AIP) funding grants for airports in the National Plan of Integrated Aipprt System (NPIAS). The NPIAS is FAA's national airport plan submitted to Congress that identifies 3,380 public use airports that are significant to national air transportation; therefore, are eligible to receive federal grants under the AIP. In cooperation with the Division, the FAA attends the Technical Advisory Committee for Aviation (TACA), a subcommittee of the California Transportation Commission (CTC).

It is important to note that California aviation relies on and greatly benefits from the infusion of federal aid through the FAA AIP program that is used to maintain and improve airports in compliance with FAA regulations. In fact, over the past ten years the FAA has brought $3.71 billion into the State in support of aviation projects. In addition, California GA aviation fuel excise tax contributed approximately $72.8 million over the same period into the State Aeronautics Account.

California Transportation Commission

The CTC was established in 1978 by Assembly Bill 402 (Chapter 1106, Statutes of 1977) out of a growing concern for a single, unified California transportation policy. The CTC replaced and assumed the responsibilities of four independent bodies: The California Highway Commission, the State Transportation Board, the State Aeronautics Board, and the California Toll Bridge Authority. The enabling legislation that replaced the State Aeronautics Board with the CTC was codified in the PUC.

The CTC is responsible for programming and allocating funds based upon the recommendations from the Division for the Airport Capital Improvement Program, as well as grants paid from the Aeronautics Account. Additionally, the CTC advises and assists the

Secretary of Business, Transportation and Housing Agency and the Legislature in formulating and evaluating State policies and plans for California's multimodal transportation programs. This includes approving Caltrans' Policy Element of the CASP.

To assist the efforts of the CTC, Government Code § 14506.5 mandates the formation of the TACA. The purpose of TACA is to provide technical advice to the CTC "…on the full range of aviation issues to be considered by the Commission." To meet this directive, the Division attends the six annual TACA meetings to discuss current issues facing aviation in California and to hear and offer recommendations to address these issues.

In the 2010 Annual Report to the Legislature, TACA addressed several important issues facing California's aviation system in their role towards preserving and promoting airports as part of our overall transportation system. Some of these important issues included:

- Promoting aviation's critical role in helping California remain competitive in a global economy.
- Promoting the understanding of the economic role and value of aviation as a State and local community economic engine.
- Considering a fully integrated ground access system to move people and goods through airports from a multimodal transportation planning perspective.
- Identifying and recommending changes to legislation that negatively affect aviation opportunities and funding.
- Promoting access to stable federal and increased State funding sources.

All these issues, and others that will undoubtedly surface in the future, have a means for discussion in the various policy standards included in this version of the PE. Operating within the boundaries of Caltrans' mission, vision and goals, these issues and others have been incorporated into strategies to guide the activities of the Division.

Regulatory and Policy Hierarchy

The Division is first guided by federal statutes and directives, then State statues, then Caltrans directives. This uncompromising order stands in place for specific reasons. Once an aircraft enters flight it becomes subject to rules as directed exclusively by the FAA. Likewise, the engineering of an airport's airside assets, i.e. runways, taxiways, and safety areas are directed by FAA regulations. The Division enforces portions of these regulations and uses them as State standards. The Aeronautics Act further directs Caltrans in its responsibilities to provide "uniformity of the laws and regulations relating to aeronautics consistent with federal aeronautics laws and regulations". In addition to the powers granted to the Division by State statute, the Division is subject to departmental Directives including multimodal transportation programs.

STATE OF CALIFORNIA

Caltrans

Caltrans is composed of multiple programs ranging from Administration to Project Delivery. Each Program is composed of multiple divisions and those divisions are further specialized into offices that are responsible for producing a variety of products, plans, and services. All levels of Caltrans are guided by the same vision.

One Vision/One Mission

Caltrans improves mobility across California.

Strategic Goals

Safety–Provide the safest transportation system in the nation for users and workers.
Mobility–Maximize transportation system performance and accessibility.
Delivery–Efficiently deliver quality transportation projects and services.
Stewardship–Preserve and enhance California's resources and assets.
Service–Promote quality service through an excellent workforce.

Caltrans is responsible for more than the State Highway System (SHS). It helps coordinate the movement of pedestrians, bicycles, mass transit, the movement of freight or goods, access to airports, to name a few. Caltrans also is an advocate for sustainable land use planning that links land use decisions and transportation thus improving the efficiency of the statewide transportation system. As such, the Division's policies connect these programs by closing many of the gaps that exist between traditional airport system planning and statewide multimodal transportation system planning. By integrating aviation into the broader context of multimodal transportation planning, we greatly enhance the connectivity between people, communities, and a vast global market.

California has 249 public use airports, 30 of which offer scheduled passenger service. The State does not own any of these airports, and as such, Caltrans has no authority over their management. However, the State does have responsibility for ensuring compliance with federal and State regulations that govern these airports. Operating airports safely is essential to maintaining the value of aviation. In 2003, nearly nine percent of the State's Gross Domestic Product and jobs could be tied, directly or indirectly, to aviation.[1] With this value in mind, Caltrans acknowledges the critical function of promoting quality access into and out of airports. There is a common misconception that ground access is limited to moving passengers in and out of airports. The reality is that the value of goods flown around the world to and from California airports would not be possible without a capable ground access system complimented by appropriate land uses. The Division's participation in Caltrans' Planning and Modal Program activities provides an opportunity to support goods movement, land use and access solutions.

[1] Aviation in California: Benefits to Our Economy and Way of Life (2003), Division of Aeronautics.

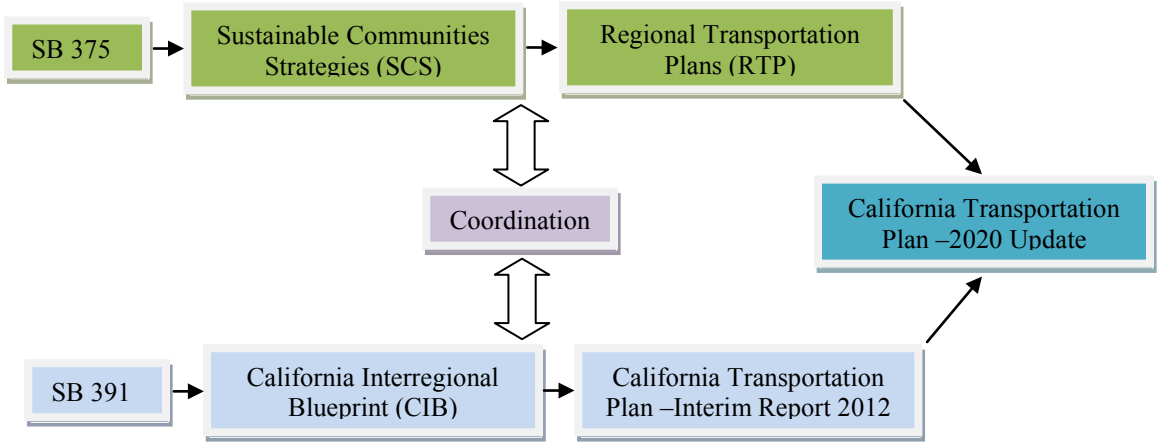
The CASP provides an opportunity for the Division to educate both internal and external users of this document on the following points that are related to transportation planning:

1. Airports are not a single trip attractor or generator by one mode of travel. Airport access is a complex issue that needs to be acknowledged in larger transportation system access studies.
2. Defining what constitutes compatible land uses around airports and incorporating them into land use and transportation system planning and modeling efforts is important.
3. Redefining airports as potential employment centers and air cargo as a specialized form of goods movement is necessary to dispel the misconception that airports are simply a place for commercial passenger arrivals and departures.
4. It is important to include airports and land uses in the vicinity of airports when proposed development and road improvement projects are reviewed and evaluated regarding their impacts on health, safety and the environment.
5. Aeronautics program staff's participation in the Planning and Modal Program initiatives described below could proactively avoid potential land use and transportation concerns related to airports.

Caltrans Other Offices and Programs

- Office of Regional and Interagency Planning, Climate Action and Adaptation Program

The Global Warming Solutions Act of 2006 (Assembly Bill 32) resulted in various legislation intended to steer the development of programs and guidelines that California will use to reduce greenhouse gases (GHG). Two particular programs that guide efforts within Caltrans are Senate Bills 375 and 391. SB 375[2], known as the Sustainable Communities and Climate Protection Act of 2008, addresses land use and transportation planning at the regional level. SB 375 requires Metropolitan Planning Organizations (MPO) to conduct integrated land use and transportation planning and to identify and include "Sustainable Communities Strategies" in their Regional Transportation Plans (RTP) to meet GHG reduction goals that the California Air Resources Board (ARB) is required to set for each MPO region. SB 391 coordinates these approaches to form the California Transportation Plan–CIB. The following flow diagram shows these relationships.



Aviation's role in the above process is complex at best. Land uses and multimodal transportation facilities and services related to airports may be addressed via SB 375. Emissions produced by

[2] Government Code section 65080(b)(2)

airport operations and ground transportation are calculated and reported differently than those produced by aircraft. Because aircraft have the potential to be flown intrastate, interstate, and internationally, the way that emissions are reported and mitigated for the industry is regularly addressed at local, regional, national, and global levels.

According to the ARB, aviation accounts for only 2.2 percent of global CO_2 emissions; 6 percent in California[3]. The ways that California will regulate aviation-generated emissions are still being evaluated.

On the global stage, the 2010 United Nations Framework Convention on Climate Change Conference of the Parties 16 talks in Cancun Mexico acknowledged that the International Civil Aviation Organization is the proper U.N. forum to discuss aviation's role and responsibility for CO_2 mitigation[4]. Concern was expressed that individual governments, particularly in Europe, were introducing unilateral measures to impose taxes or levies on air travel that were economically damaging and had no real environmental benefits. Aviation is championing GHG emission reductions, and on a stage larger than California.

Also to be considered, but beyond the scope of this PE, is sea level rise which is perhaps the best documented and most accepted impact of climate change. Low elevation coastal airports, such as San Diego's Lindberg Field and San Francisco International Airport, will need to address this issue from their operational perspective. Caltrans will need to consider airport access issues that are within the State's purview. Caltrans' Climate Change Workgroup, of which the Division participates, is addressing this issue from many angles. Regardless, climate change solutions and adaptation strategies, as they apply to aviation, are being monitored by Division staff and will be integrated into Caltrans climate change programs as appropriate.

- Office of State Planning, California Interregional Blueprint / California Transportation Plan

In response to SB 391(Lui 2009), Caltrans initiated the CIB, a State level transportation blueprint focused on the State's role in the interregional movement of people and goods. The CIB[5] will articulate the State's vision for an integrated, multimodal, interregional transportation system that complements regional transportation plans and land use visions. The CIB will integrate proposed interregional highway, transit, intercity passenger rail, high-speed rail, goods movement, aviation, and other transportation systems, strategic plans, and data into a common framework for analysis in the context of regional plans. These plans and data will be visually integrated through a new Geographic Information System (GIS) platform for Caltrans viewing and data sharing called CT Earth.

Because the CIB is a land use and multimodal transportation planning program, all the various modal programs will coordinate in the stakeholder outreach process. The benefit to this approach is that all the modal programs hear the same public concerns, allowing Caltrans to respond as a

[3] California Air Resources Board, *Climate Science Update: Highlights from the 2009 Haagen-Smit Symposium*.
[4] Air Cargo World, December 17, 2010.
[5] http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/

team and to avoid contradictions. The Division is participating in these various outreach efforts and will have a notable role as land use and transportation strategies are recommended near airports. The Division will be in a position to advocate for safe land use practices near airports and recommend alternatives to one of aviation's greatest threats - that of incompatible land uses. Active participation in the CIB outreach process by Division staff will do much to help District planners, local partners, Airport Land Use Commission (ALUC) staff, and regional planners consider land use impacts to airports before they occur. And, such participation can help identify optimal land uses and transportation improvements for airports and areas near them.

The CIB will assist policymakers at regional and State levels to fill identified gaps in interregional transportation systems and avoid duplicative efforts while producing a more efficient transportation infrastructure. An efficient transportation system will help the economy, improve air quality, protect the quality of the environment, and promote social equity by making multimodal transportation more widely available and affordable while providing attractive alternatives to conventional automobile trips.

Integrating Aviation into the CTP/CIB
The strength of the CIB is that it embraces various modes of transportation and the effect multiple modes may have on land use patterns and vice versa. All over the world, airports can have a positive influence on land use patterns once their value to a community is realized. Creating transportation solutions that are complimentary to the airport and community falls to transportation planning. For this reason it is critical that airports be redefined for CIB planning purposes.

The perception that airports are just places for airplanes to take-off and land has long been dismissed by aviation system planners. Instead, airports should more accurately be viewed as economic enterprise hubs, employment centers, mixed-use commercial business centers, bulk cargo transfer centers, transit hubs, and more. Airports continue to be vital economic engines supporting air transportation needs of their region. The emergence of "aerotropolis", as defined by Dr. John Kasarda in 2000[6], validates this new global urban form as a place for aviation-intensive businesses and related enterprises that enjoy a relationship with their airport that can extend up to 15.5 miles outward from major airports. Similarly, related concepts such as the Multi-Modal Hub promotes using airports to link all modes of transportation–freight rail, interstate highways, mass transit and seaports–with air transport to form a multi-dimensional development complex focused on office, industrial and distribution activities. What begins to emerge is an economically diverse business bases that not only supports passenger service, but also commercial, industrial, emergency operations, tourism and more. In short, airports have evolved into drivers of business location and urban form in the 21st century in the same way that highways did in the 20th century, railroads in the 19th century, and seaports in the 18th century, according to Dr. Kasarda. The concept of airports as hubs for multiple uses could be appropriately scaled and applied to smaller GA airports in California.

[6] Kasarda, John D. (2000). "Aerotropolis: Airport-Driven Urban Development". *ULI on the Future: Cities in the 21st Century*. Washington, D.C.: Urban Land Institute.

- Office of Community Planning, Smart Mobility[7]

Smart mobility is a transportation paradigm focused on moving people and freight while enhancing California's economic, environmental and human resources by emphasizing convenient and safe multimodal travel, speed suitability, accessibility, management of the circulation network, and efficient use of land. It's about changing the way the transportation system performs so that negative environmental and social impacts are reduced and options for people and businesses are increased.

Smart Mobility is an overarching basis for policy and action that coordinates many of Caltrans' existing activities as well as activities of other public and private organizations. To be successful in attaining a Smart Mobility future that offers meaningful benefits, the following principles must be introduced into a wide variety of activities:

Smart Mobility Principles:	***Smart Mobility Objectives:***
o Location Efficiency	o Increase Transportation Choices
o Reliable Mobility	o Enhance Community Quality
o Health and Safety	o Reduce Environmental Impacts
o Environmental Stewardship	o Support System Preservation
o Social Equity	o Increase System Efficiency.
o Robust Economy	

The Smart Mobility Framework introduces Smart Mobility Place Types within the concept of location efficiency. Location efficiency elements relate to both transportation system characteristics and development characteristics. Place types are a tool for a general classification of towns, cities, and larger areas to be used as a basis for making investment, planning, and management decisions that advance Smart Mobility. Each of seven place types described in the Caltrans report creates a distinct context for transportation investments and distinct opportunities to gain Smart Mobility benefits. The seven place types are:

1. Urban Centers
2. Close-in Compact Communities
3. Compact Communities
4. Suburban Communities
5. Rural and Agricultural Lands
6. Protected Lands
7. Special Use Areas

In this report, airports are categorized as a Special Use Area, as are other diverse uses such as military installations, ports, and large industrial zones. This category means that there is not a consistent Smart Mobility approach for this place type. The emphasis is on using the full set of principles, decision support tools, and performance measures to craft distinct approaches that are appropriate to each special use area.

[7] http://www.dot.ca.gov/hq/tpp/offices/ocp/smf.html

The Division's active support of Smart Mobility principles is primarily via the example of rethinking airports as employment centers that can attract workers from surrounding places. The "reliable mobility" principle is particularly relevant to this strategy. Yet beyond moving people in and out of airports, transportation planners are mindful that multimodal airport access needs to include provisions for freight movements from air, ground and rail companies. Outside of airports, these same freight forwarders use California seaport and trucking terminals in conjunction with airports to transfer and ship freight around the world. Linking California airports to the global goods movement industry is vital to the State's economy. In support of "reliable mobility" principles, Division staff, with the support of the various ALUCs and local planners, should actively:

- Request the delineation of airports on regional and local planning maps. (Note: The number of such maps that do not include public use airports is still quite high.)
- Request clear identification of airport access and connectivity, along with an explanation of how the airport(s) will be highly connected to the surface transportation system for both passengers and freight.
- Request and/or remind transportation modelers of the airport's influence in local, regional, and subregional trip generation of passenger trips and/or goods movement, particularly during peak hours.
- Request that issues regarding health, safety, and environmental impacts arising from particular use activities and mobility characteristics be considered when planning uses near airports (such as health concerns associated with diesel exhaust emissions from traffic generated by port facilities).
- Review the surrounding context and level of connectivity to other uses in the area or region.

The success of applying Smart Mobility strategies to aviation uses depends on strong relationships between Caltrans and other State agencies as well as regional and local organizations, including the private sector. However, Smart Mobility's effectiveness will be determined in part by its reach beyond Caltrans. Attaining Smart Mobility benefits will require public support and the committed and coordinated actions of all levels of government and private sector partnership.

- Office of Community Planning, Complete Streets

In Deputy Directive DD-64-R1 (effective October 2008), Caltrans defines Complete Streets [8]as a transportation facility that provides safe mobility for all users, including bicyclists, pedestrians, transit vehicles, trucks, and motorists, appropriate to the function and context of the road facility. These are spelled out in the California Complete Streets Act of 2008 (SB 1358). For many years throughout the country, multi-modal streets have been treated as "special projects" requiring extra planning, funding, and effort. The Complete Streets approach is different. Its intent is to view all transportation improvements as opportunities to create safer, more accessible streets for all users.

For airports, there is an opportunity to apply Complete Streets concepts to roads leading into and out of the airport. It is this network that carries employees, passengers and trade goods to and

[8] http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html

from global destinations. The Division supports the application of Complete Streets strategies into and out of airports with the following actions, not limited to:

- Require Caltrans districts to evaluate Complete Streets options for State-sponsored or State-supported airport access road projects pursuant to DD-64-R1 and State law.
- Encourage airport sponsors, local governments, and MPOs to address Complete Streets policies and law when reviewing access road improvements to and from airports.
- As appropriate, remind regional and local planning agencies of State law requiring the inclusion of bicycle, pedestrian, and transit elements in regional and local planning documents for road improvements–including those that lead into and out of airports.
- Encourage regional and local planning agencies to include airport access road improvements, inclusive of Complete Street concepts, in their RTP and Capital Improvement Program projects and funding requests.

- Office of State Planning, Regional Blueprint Plan/ Sustainable Communities Strategies (SCS)

The State's Sustainable Communities Strategy[9] (SCS) legislation is part of two larger directives, those being SB 375 and the federal government's Partnership for Sustainable Communities (PSC). PSC is a federal interagency partnership between the Environmental Protection Agency, Housing and Urban Development, and Department of Transportation. The PSC is aligning investments and policies to support communities that want to provide more housing choices, make transportation systems more efficient and reliable, and support economically vibrant neighborhoods that attract business. The PSC is guided by six "livability" principles:

- Provide more transportation choices.
- Promote equitable, affordable housing.
- Enhance economic competitiveness.
- Value sustainable communities.
- Coordinate and leverage investment.
- Support existing communities and neighborhoods.

SB 375 seeks to implement AB 32 by requiring MPOs to incorporate a SCS into their RTP. SB 375s SCS requirement provides a process for setting emissions-reducing goals for each region for integrated land use and transportation planning, programs, and projects. It has the potential to integrate previously disjointed land use and transportation planning activities, and provides incentives for local governments and developers to follow new growth patterns, such as urban infill and transit-oriented development patterns. The 18 MPOs in California are required to prepare a "sustainable communities strategy" to reduce the amount of vehicle miles traveled per capita in their respective regions, thus reducing the growth of greenhouse gases (GHGs).

California's 249 public use airports are in a unique position to help meet SB 375 objectives. They are existing public assets that already have a place in, and roads to, communities and global

[9] http://www.epa.gov/smartgrowth/partnership/

markets. In many cases, airports are poised to accommodate a mix of land use types that would further centralize airport-compatible activities. Division staff is integrated with Caltrans' SCS and SB 375 working groups to help call attention to land use alternatives that take better advantage of existing airport infrastructure that may help community's sustainability goals without jeopardizing public safety.

As a noteworthy sidebar, some have commented that SCS is a focused modernization of some key smart growth urban planning concepts. Simply, smart growth integrates urban, suburban and rural community development with housing and transportation choices near jobs (including those at airports), shops, and schools. Applied to aviation environments, many smart growth and SCS concepts are being incorporated into 'aerotropolis' discussions, introduced earlier on page 1-8. Further, individual airports and MPOs are also working towards the adoption of airport or aviation smart growth plans to better integrate the benefits of aviation into the fabric of California communities.

- Statewide Transit Planning Branch

Caltrans' Division of Mass Transportation (DMT) supports the development of a public transportation system that generates environmental, economic, and social benefits by providing mobility options to California's residents and visitors. Transit connectivity to airports is an important element in aviation system planning. Large commercial service airports typically enjoy a higher degree of connectivity, such as Bay Area Rapid Transit's train station located in the international terminal at San Francisco International Airport. This benefits not only passengers, but the hundreds of employees who work at the airport. GA airports can also enjoy some of the same benefits when their facilities are integrated into the local transit system. Division's staff works with DMT to better integrate public transit solutions to the State's numerous commercial and GA airports.

- Office of Community Planning, Local Development-Intergovernmental Review (LD-IGR)

The Caltrans Division of Transportation Planning, Office of Community Planning oversees Caltrans' Local Development-–Intergovernmental Review (LD-IGR) Program. The LD-IGR allows Caltrans the opportunity to provide timely and technically accurate information to our land use authority partners about potential consequences of their proposed actions, and how to mitigate impacts to the multi-modal transportation system. Timely and consistent consultation and collaboration is required with local, regional, State, federal agencies, and tribal governments, early and throughout their land use planning and decision-making processes consistent with the requirements of the CEQA, the National Environmental Policy Act, and State planning and zoning related laws.

Caltrans LD-IGR works to ensure that localized land use planning and development decisions provide adequate movement of people, goods, and services through project specific analysis and mitigation. Mitigation is considered when appropriate for motorized and non-motorized transportation choices, including State and local highways, transit, intercity rail passenger service, air service, walking, and biking. Caltrans advocates State infrastructure and community designs (e.g., urban infill, mixed use, transit oriented development) that promotes both healthy communities and a safe and efficient transportation system.

Although the Division is not directly involved in LD-IGR programs, it can and does support their review actions when aviation or airport issues emerge, and it often conducts concurrent reviews.

The divisions have all agreed to share with the others, copies of their comments on local proposals, before the developers receive any Caltrans Encroachment Permits or Airspace Leases.

- Office of Projects/Plans Coordination, Project Initiation Documents

The Office of Projects/Plans Coordination (OPPC) manages the resources for Project Initiation Documents (PIDs) for the 12 Caltrans Districts. A PID is required to be developed and approved before any project can be programmed (funded) and constructed on the SHS and is seen as the bridge between Transportation Planning and Project Delivery (construction). The OPPC places an emphasis on providing resources for PIDs that have been identified in a plan, such as an RTP, and linking them to a reasonable opportunity to be programmed through a funding cycle. This increased level of coordination between Planning and Programming, Traffic Operations, Maintenance and Project Delivery is essential to ensure that funding for PIDs results in projects that are properly scheduled.

The concern of the Division is to address transportation projects located within two miles of an airport for which PIDs may not have considered potential airport impacts. The Division's preference is that any sizable transportation or development project within two-miles of an airport be quickly reviewed by aeronautics staff to determine whether further review is necessary. Such proactive participation could help avoid many land use compatibility and transportation issues that surface later in the project approval stage.

- Office of Community Planning, Public Participation

Caltrans has been very proactive in raising its standards for public outreach regarding its own activities. Since the release of the "Public Participation Guide" in August 2002[10], and release of the "Best Practices Public Participation Reference" in June 2005[11], the Office of Community Planning and other headquarters divisions and Caltrans districts continue to take additional steps to increase the awareness and transparency of Caltrans programs.

One public participation example of particular relevance to the Division is the outreach efforts incorporated into the CTP/CIB program. Because the CIB is a true land use and multimodal transportation planning program, all the various modal programs need to coordinate together in this process. The benefit is that all the modal programs hear the same public concerns, allowing Caltrans to respond as a team and to avoid contradictions. This reinforces our commitment to employ context sensitive solutions in Caltrans planning efforts.

The Division is participating in these various outreach efforts and will have a notable role as land use and transportation strategies are recommended near airports. The Division will be in a position to advocate for safe land use practices near airports and recommend alternatives to one of aviation's greatest threats−that of incompatible land uses. Active participation in the CIB outreach process by Division staff will do much to help local partners, ALUC staff, and regional planners consider land use impacts to airports before they occur. And, such participation can help identify optimal land uses and transportation improvements for airports and areas near them.

[10] Caltrans, Division of Transportation Planning, Office of Community Planning, *Public Participation Guide*. August 2002.

[11] Caltrans, Division of Transportation Planning, State Planning and Research Program, *Best Practices Public Participation Reference*. June, 2005.

- Office of System and Freight Planning

The Office of System and Freight Planning (OSFP), (formerly Goods Movement) Branch strives to improve mobility through airports with a different role than the Division of Aeronautics. The Freight Planning Branch develops the strategies, policies, and methodologies to enhance the goods movement transportation system in California through consideration and integration of all freight modes. Both entities recognize that air cargo accessibility to, from, and through airports is vital to economic recovery, growth, and overall quality of life.

Of the various ways to transport cargo, aircraft, with their speed and distance, are especially efficient at transporting long-haul, low-weight, high value, time-sensitive goods. Air cargo is shipped aboard air-freighters or in the cargo holds of passenger aircraft (belly cargo). Air cargo, whether through integrated carriers (integrators) like FedEx, passenger carriers (belly cargo) like Southwest Airlines, or combination carriers (mixed fleet) like Lufthansa, make quick global trade possible. The Freight Branch is especially cognizant of and concerned with intermodal connections with surface transportation modes required for delivery after cargo departs or arrives by aircraft. As cargo shifts back and forth to truck operations, the highway network system plays an integral role in facilitating the air cargo and subsequent freight industries.

One unique aspect to the role of ensuring efficient transportation connections between producers and consumers (whether within the State, nationally, or internationally) from truck, rail, air, and seaport facilities is that, aside from the SHS much of the freight transportation network is privately owned and operated. This makes partnerships with the private sector and local and regional agencies critical to fostering and maintaining coordinated and efficient freight planning, programming, and implementation efforts. Through intergovernmental review and other processes, Caltrans' Transportation Planning and Aeronautics Divisions both work to influence private-and public-sector land use choices that expand the economic benefits of air cargo while supporting neighborhood values (e.g. reduced downtown truck traffic or noise sensitivities). One manner in which community values can be preserved while supporting air cargo is to encourage some cargo services to relocate out of downtown sites to a better suited location, such as a local airport. The adequate capacity and capability of many GA airports could serve cargo transfers from both small planes and trucks. Such efforts can further develop air cargo and other bulk-transfer markets, provide needed revenues to the airport, and reduce intra-city truck trips, thus relieving congestion and improving air quality.

The original document laying the framework for addressing statewide goods movement planning is the Goods Movement Action Plan (GMAP), developed in two phases from 2004−07. Using an inclusive process, the California Environmental Protection Agency, Business, Transportation and Housing Agency, and Caltrans created this plan that provided analysis, strategic thinking and recommendations to address California's current and projected goods movement needs for capacity expansion, improved efficiency, enhanced security, job creation, and the mitigation of public health, environmental, and community impacts. It concentrated on four "priority" regions−Los Angeles/Inland Empire, San Diego/Border, Bay Area, and Central Valley. Efforts are currently underway to develop the next iteration of the GMAP, to be renamed the Freight Mobility Plan.

In addition to partnership and advocacy roles, the Freight Planning Branch supports and helps develop studies and tools. Examples include the Freight Element of the State Rail Plan and a Statewide Freight Model, which will help measure CIB performance through a better understanding of freight movement in California and its impacts on highway infrastructure, transportation networks, highway safety, energy use and emissions. Administration of the Trade Corridors Improvement Fund a direct outcome of the GMAP developed to implement several freight mobility projects from the goods movement needs list, as well as document reviews to ensure access around production/shipping facilities and freight mobility issues of all modes are considered within California's transportation planning process, are also performed by OSFP.

Realizing the complexities of air cargo, the OSFP commissioned the Air Cargo Mode Choice and Demand Study[12]to provide a more comprehensive picture of air cargo in California including historical trends, dynamics of air cargo as a transportation mode choice, industry landside infrastructure capacities, and insight into future air cargo demand. Air cargo is an integral part of the California economy (in terms of tonnage and dollar value) and the national economy as well.

According to Airport Council International North America, four of the top eighteen cargo airports are in California with two international gateways (Los Angeles International and San Francisco International) and two regional integrator hubs (Metropolitan Oakland International for FedEx and Los Angeles Ontario International for United Parcel Service). Around 88 percent of the State's air cargo is shipped by these four airports[13].

Working alongside the Division, OSFP staff shares perspectives, provides feedback, collaborates on projects, mutually consults, and solicits advice. Both Divisions are in agreement that the economics that come from a robust and expanding air cargo industry are essential to the long-term financial health of the State.

- Caltrans, Public Private Partnership Program

Public-Private Partnerships (P3) is an innovative financing and project delivery structure where a public entity partners with the private sector to build and operate an infrastructure project. A P3

[12] Air Cargo Mode Choice and Demand Study, TranSystems, Caltrans, July 2, 2010.
[13] Ibid.

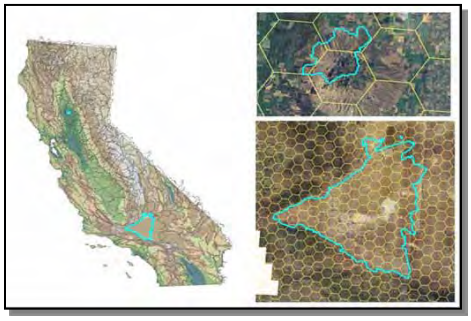
concession agreement is a long-term contractual arrangement with private sector partners to build and operate new facilities in return for annual "lease" payments that are paid to the private partner if the facility is available for use. The public agency retains ownership of all assets and retains oversight of policy items, including fares and design/operational standards. P3 projects go a step beyond traditional Design Build Operate and Maintain procurements by incorporating financing into the private sector role. P3's have been successfully used to deliver projects on time and on budget and are known for accelerating project delivery at reduced cost.

Although Caltrans is currently focusing its P3 attention on high-value surface transportation projects, it does recognize the opportunity P3 can have in aviation applications. To this extent, the Division supports the use of P3 as a means to increase the business diversity and efficiency of airports and encourages airport sponsors to consider this model where appropriate. An example where this tool is currently being used is in the installation and operation of solar energy panels at airports.

Department of Fish and Game, California Essential Habitat Connectivity Project

California along with other states and nations are becoming more aware of the importance of connected habitats to ensure the existence of wildlife and biodiversity. Conserving these connections in California requires an understanding of wildlife needs, a common way of evaluating these needs and a collective recognition of these plans by implementing and resource agencies.

The California Essential Habitat Connectivity Project is a highly-collaborative endeavor sponsored by Caltrans and the Department of and Fish and Game with three major goals:



- Develop a statewide wildlife habitat connectivity map using (GIS) analysis and modeling.
- Identify criteria and priorities for connectivity analyses.
- Develop a strategic plan that outlines the framework necessary to complete regional and local connectivity analyses.

The Division is supportive of this effort and recognizes its value to citizen's and visitors in the State. In working through similar environmental goals, aviation professionals are routinely challenged with the reality that wildlife and airplanes do not always coexist well. Specifically, significant ecological areas or even some open spaces next to airports (such as golf courses) can result in wildlife movements towards the runway environment placing pilots and passengers in life-threatening situations. Division staff will work with the California Essential Habitat Connectivity team to help identify when there might be a conflict between existing airports and proposed wildlife corridors. Staff can also help the team find solutions to corridor routing issues near airports. Integration of the issue into Wildlife Hazards Management Plans may be appropriate, for example, see section on "Synergistic Effects of Surrounding Land Uses in the FAA Advisory Circular, 150/5200-33B; 8/28/2007." Working with interested parties and agencies, to look for ways to avoid, minimize, mitigate, or restore habitat that works in conjunction with airport needs early in the process can help provide for an integrated approach to aviation and conservation planning.

California Energy Commission

As California continues to support and explore sustainable energy solutions, the potential negative effects of siting energy solutions in the wrong location can be extremely hazardous, if not fatal, to some aviation uses. For example, energy plants that emit exhaust plumes of hot gas, either visible or invisible, can severely disrupt airflow around an aircraft creating potentially disastrous consequences. Likewise, solar panels or arrays, placed in the wrong location near airports, can or may create glint, glare, or flash episodes temporarily blinding pilots. Wind turbines, some of which can penetrate high into approach or landing surfaces, also disrupt airflow and may emit electromagnetic fields that can interrupt ground-based radar (although the Energy Commission does not have jurisdiction over wind projects due to the lack of thermal energy involved). The Division is working with the Energy Commission to help site energy projects in the vicinity of airports in a manner that does not jeopardize flight or airport operational safety. The message both agencies are trying to get out is for project proponents to coordinate early and often with the Division and Energy Commission on energy projects within four miles of an airport. Ideally, power project sites should be at least three miles from an operating airport. Both agencies are committed to supporting alternative energy solutions and doing so in a manner that does not put life or property in jeopardy. For further information, the Energy Commission's Siting, Transmission and Environmental Protection Division can be reached at 916-654-5100.

Governor's Office of Planning and Research

The Governor's Office of Planning and Research (OPR)[14] publishes several documents, available on their website, that are of particular relevance to planners and airport land use commissioners as they consider projects and activities that may affect aviation. Some of the more notable documents include:

- CEQA Statues and Guidelines. Housed within OPR, the State Clearinghouse coordinates the State level review of environmental documents pursuant to CEQA and provides technical assistance on land use planning and CEQA matters. They also update the CEQA statutes and guidelines and post the latest version of each on their website. Because airports are mentioned in the statutes and guidelines, planners are advised to be aware of any changes that may affect the way aviation is evaluated.

- General Plan Guidelines. This is a guide for local planners in preparing general plans and also for other local government officials and community members who may have less familiarity with planning theory, practice, and land use law. This advisory guide is the State's only official document interpreting and explaining California's legal requirements for general plans. If airports are to be better incorporated into the fabric of California communities, and understanding of general plan practices is essential.

[14] http://www.opr.ca.gov/index.php

- Planning, Zoning and Development Laws 2011. This document is a nice companion to the General Plan Guidelines as it is a compilation of California statutes pertaining to city and county planning and zoning activities. Of particular value to ALUCs is the airport approach zoning discussion that can help create in the updating of Airport Land Use Compatibility Plans (ALUCP) and performing plan reviews.

- Community and Military Compatibility Planning. The purpose of this publication is to assist cities and counties in addressing military compatibility issues when developing, updating or significantly amending their general plans. More specific, this document provides good guidance for considering airspace protection around military facilities, especially those with airfields.

Department of Housing and Community Development

The California Department of Housing and Community Development's (HCD) mission is to "Provide leadership, policies and programs to preserve and expand safe and affordable housing opportunities and promote strong communities for all Californians". The Division has met with HCD on numerous occasions over the years to help them consider housing programs that are compatible with safe airport and aircraft operations. As communities become more compact and take advantage of multimodal transportation opportunities, the connection between communities and their local airports is vital to meeting sustainability goals. The Division will continue in this capacity to seek better integration of airports, particularly GA airports, with their surrounding community.

Regional Planning Organizations

- Metropolitan Planning Organization (MPO)
- Regional Transportation Planning Agency (RTPA)

The 18 federally designated MPOs, and some of the 26 State statutorily created RTPAs, prepare RTP in California. MPOs are now required to include SCS and other programs geared towards meeting the objectives of AB 32 in their RTP; SCS requirements specified in SB 375 do not pertain to RTPAs. Coordination between the RTP and the CIB together will roll up into the California Transportation Plan. While RTP are required to have an aviation section under certain conditions, the Division recommends all RTP include aviation elements given their importance to multimodal travel in the State.

In April 2010, the CTC released their updated 2010 Regional Transportation Plan Guidelines[15] (Guidelines). The Guidelines provide updated information on how aviation and airports are to be included in RTP (see Chapter 6.12, Modal Discussions). Specifically, federal statute Title 23 CFR 450.322(b) requires Metropolitan Transportation Plans (also known as RTP) to include short and long-range strategies for an integrated multimodal transportation system. California Government Code §65081.1(a) requires each RTPA with a Primary air-carrier airport (i.e. an airport with over 10,000 annual enplanements) to have an Airport Ground Access Improvement Program. The Guidelines goes on further to recommend that MPOs and RTPAs consider the needs of public use airports, special-use heliports and military airfields when planning

[15] California Transportation Commission, *2010 Regional Transportation Plan Guidelines*, April 7, 2010.

transportation and infrastructure projects (i.e. by consulting with the sponsors) to further sustainable and compatible land use and circulation patterns. Nine best practice tips are also provided to help MPOs and RTPAs further incorporate aviation concerns in their RTPs.

While RTPs look out over a 20-year plus period, they are updated every four or five years depending on air quality attainment status. Annually, Overall Work Programs (OWP) are received in Caltrans' twelve district offices listing the transportation work elements to be performed by the MPO, RTPA, or member agency for the upcoming fiscal year. It is during the review of draft OWPs that the Division gets involved in reminding the report preparers of aviation and airport inclusion to help maintain and improve the connectivity of pubic use airports to the larger multimodal transportation system. Division staff seeks to close transportation gaps in and around airports, and advocate for relevant projects in these transportation plans. The Caltrans Office of Regional and Interagency Planning (ORIP) takes the lead in working with the twelve District offices through the regional transportation planning process via the OWPs and RTP. ORIP collaborates with the 18 MPOs and 26 RTPAs with an emphasis on monitoring tens of millions in transportation planning funds through grants. Division staff will continue working with ORIP and the Districts to better integrate aviation into RTPs and OWPs.

FEDERAL GOVERNMENT

Department of Defense

California has always been strategically important to the U.S. military because of its Pacific Rim location. Rich in natural resources, the State's long coast, accessible harbors, diverse topography, expansive inland valleys and deserts, provide an unmatched combination of settings that meet the military's global logistics and training needs. Over half of California's 58 counties have some sort of military aviation facility located within their boundaries. Military spending is an important source of revenue to the State's economy. 2008 Department of Defense (DOD) spending in CA totaled $50,845,643,000. The largest portion of that spending was split almost equally between the Navy and Air Force at installations that include major military airfields and flying operations. In addition to its military bases, many defense contractors are also located in the State. Defense contracts exceeded $50 billion not including the indirect impact of both jobs and secondary spending by military and civilian support and related service industries.

In spite of major losses during various Base Realignment and Closure actions, the State is still home to 22 military airports, aerial training ranges, and test centers. California is also home to several major space facilities including the only civilian space port and civilian astronaut training school in the nation at Mojave Airport in the desert of southern California.

Unfortunately, California's population growth and demand for developable land often creates problems for the military. The military often faces severe political pressure from development under and around important aerial artillery ranges and training areas, airfields, and military installations creating irresolvable land use compatibility, safety, and noise problems for potential residents and the military alike. The federal government created a special land use plan to

address this issue. These military compatibility plans called Air Installation Compatible Use Zone (AICUZ) are similar to civilian public use airports land use plans. A county's ALUCP must be consistent with the ACUIZ, and is subject to ALUC development review processes

Flight training remains one of the most important DOD missions in California, and the State is home to some of the nation's most important military artillery flight training ranges. The county's only unmanned flight operations area is located in Yuba County. The State's largest special use air space area R-2508 is the largest area of restricted military airspace in the U.S. and is used extensively by all branches of the military. It encompasses 12 percent of California's total airspace and includes an area of more than twenty thousand square miles.

The military's relationship with their Regional Transportation Agencies and Metropolitan Planning Agencies is often minimal, and both agencies could benefit from more outreach to the other. An excellent starting place for that dialog is in Regional and Metropolitan Transportation Plans. By identifying the military's transportation and land use needs in their transportation plans the base and community can work together to resolve shared transportation infrastructure needs in a coordinated fashion and develop strong community ties. The Division works with military airports in a liaison capacity assisting as needed on specific problems.

The Energy Commission has also been working with military representatives for several years regarding power plant siting cases and potential impacts on military operations. Impacts such as turbulence from high velocity plumes generated by exhaust turbines and cooling towers, and glint/glare from solar thermal arrays could affect military airports or protected airspace. If staff identifies a proposed power project that could impact military operations, correspondence is initiated with military representatives and copies of applications for permits to build power plants are sent out for review and comment. If needed, meetings with military representatives are conducted to exchange information about any issues of concern, and staff encourages written correspondence that can be included in the power plant siting process. If appropriate, the Energy Commission requires mitigation to ensure that a power plant project would not significantly impact military operations.

DIVISION OF AERONAUTICS

The legislation that created the Division was the State Aeronautics Commission Act of 1947. The heading of the legislation was later amended by statute to read the State Aeronautics Act (Aeronautics Act) in 1961. As a result of the Aeronautics Act, the Division's first priorities are those mandated by the Aeronautics Act, then Caltrans guidance, then Division guidance as expressed through the PE. As directed by the Aeronautics Act, the Division is a steward and advocate of aviation in California. To that end, its efforts are focused on activities that "…protect the public interest in aeronautics and aeronautical progress…" (§21002). It is important to note that the Division is only staffed at the Headquarters building (Sacramento) and does not have aviation representatives in any of the 12 Caltrans district offices. The Division therefore advises that all airport matters that may involve Caltrans or Caltrans facilities be referred to Headquarters for support and technical expertise.

The Aeronautics Act itself is divided into six chapters, the first five of which have not received significant cleanup legislation since its enabling in 1947. The first chapter begins with general provisions and definitions and explains the Legislature's intent for a State aviation program. Chapter two explains Calrans' role in administering the Division, and explains the role of the

CTC. Chapter three includes many of the safety considerations from FAA regulations that help keep airports and the surrounding communities safe and compatible with flight operations. Chapter four deals with airport and heliport permitting, air navigation facilities, noise guidelines, funding, and importantly, the formation and authority of ALUCs. Chapter five covers the investigations and hearings on matters covered in the Aeronautics Act. Finally, Chapter six introduces airport planning and specifically introduces the intent of the CASP and how it can be used to support California aviation.

Of equal importance to what the Aeronautics Act does commit the Division to perform, it does not extend authority to Caltrans or Division to perform in the capacity of an airport manager, economic development director, business manager, or land use planning lead agency. The Division is not a single airport advocate, data collection, or repository program (outside of minor information), or preparer of airport master plans, airport layout plans, airport land use compatibility plans, economic development plans, or similar reports. In cooperation with, and in support of the FAA, the Division serves as advisors to Caltrans, ALUCs, and airport sponsors for ways to better include safe aviation into the fabric of California communities and multimodal transportation planning.

California Aviation System Plan

The CASP is the vehicle by which continuous aviation system planning is conducted being first developed by Caltrans in 1980. In 1987, Caltrans initiated a CASP update which resulted in amendments to Sections 21701-21705 of the Aeronautics Act in 1989. The Aeronautics Act was formally amended in 1989 to include Chapter six: Airport Planning, the chapter that requires the preparation of a CASP. While the contents of the various CASP elements can be and are updated regularly by the Division (with CTC review and approval), the Aeronautics Act itself can only be amended by the Legislature.

The CASP is similar to a city or county General Plan in that it is comprised of multiple elements that collectively make up what is referred to as the CASP. The CASP sets out to summarize and link aviation activity in California and establish goals and objectives for aviation improvements. The Division meets its CASP obligations by publishing elements that are inclusive of the topics spelled out in §21702. These topics have been included in four primary elements, the Policy Element, the General Aviation System Needs Assessment Element (GASNA), the Inventory Element, and the Airport Capital Improvement Plan (ACIP). Each of these elements is reviewed, considered in a public setting, and approved by the CTC. The elements are revised on approximately a five-year cycle, with the exception of the ACIP which is revised biennially. If deemed appropriate by the Division, additional elements may be included in the CASP.

Airport Land Use Commissions

It is often heard that ALUCs are an airports first line of defense in California. This is because the PUC requires every county that has an airport operating for the benefit of the public to form an ALUC (§21670(b) or its functional equivalent (§21670.1(a-c)). Their primary function is to "…ensure the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports…" (§21670(2)). They do this in two primary ways, by preparing ALUCPs pursuant to Section 21675(a) and by reviewing local agency general and specific plans for consistency with the ALUCP (§21676(a)). Despite this charge, ALUCs are only an advisory body to local planning jurisdictions. They can assist with the coordination of planning efforts, and can adopt rules and regulations consistent with the Aeronautics Act. Yet, ALUCs can have their opinions

on land use compatibility overruled by local governments who must go through specific procedures.

ALUCs have a vital role in protecting airports from incompatible land uses. Incompatible land uses around airports are considered the largest imminent and continuous threat to California aviation. Despite good intent, if an ALUC does not fully understand land use planning and development processes, approved projects today can halt any chance of the airport reaching its economic potential tomorrow. The Division provides guidance to ALUCs on how they may carry out their responsibilities in the California Airport Land Use Planning Handbook (Handbook). Additionally, the Division conducts periodic training to ALUCs as required in the Aeronautics Act (§21674.5). A detailed discussion on the roles and responsibilities of ALUCs can be found in the Handbook found on the Division's website.

In addition to the various CASP elements, the Division published the *California Airports Best Practices Guide* (CABPG) in July 2008[16]. The CAPBG was a cooperative effort between the Southwest Chapter of the American Association of Airport Executives (SWAAAE), the Association of California Airports (ACA), the FAA Western Pacific Region, and the Division. The purpose of the CABPG is to clarify roles, responsibilities, and expectations of all affected parties when conducting airport related business within California. Of equal importance is ensuring that addressed issues and programs are dealt with in a uniform manner. As such, the CABPG is intended as a guidance document on best practices between airport sponsors, FAA, Caltrans and Division, and consultants and does not supersede any federal, State or local laws or rules and regulations.

Operational Structure

The Division is organized into three offices, namely the Office of Aviation Planning, Office of Airports, and Office of Technical Services, and a team of aviation specialists supporting other critical functions. There is 26 staff currently in the Division, down from 37 in 1992.

The Office of Aviation Planning (OP) is comprised of eight planners, including the office chief. They are subdivided into four aviation system planners and three land use planners. The office develops the CASP to assess current and future aviation needs and resulting implementation actions. They coordinate within Caltrans programs on intermodal planning and regional aviation system planning projects, such as the CIB, and participate in development of federal planning and State aviation policies activities. They also review and comment on RTPs and OWPs and facilitate resolution of air quality issues affecting airports and airport users. They provide liaison duties with Caltrans' twelve districts, the Division of Research and Innovation and other agencies concerning aviation-related research, develop research concepts and sit on Airport Cooperative Research Program (ACRP) panels, participate on national symposiums, and are a limited resource for aviation statistics. Of particular importance, the three land use planners have

[16] Caltrans, Division of Aeronautics, *California Airports Best Practices Guide,* July 2008. Available on the Division's website at http://www.dot.ca.gov/hq/planning/aeronaut/document/CaBestPracticesGuideJuly2008_r1.pdf

the challenging responsibility of reviewing ALUCPs and assisting ALUCs with their roles and responsibilities.

The Office of Airports (OA) is comprised of seven Aviation Safety Officers (also known as Aviation Consultants) who are instrument rated, commercial certificated pilots, including the office chief, plus one aviation planner. Primary among their responsibilities are performing public use airport and hospital heliport safety and permit compliance inspections, the processing of airport and heliport permits, and the evaluation of proposed new school sites and State buildings near airports. Under contract with the FAA, they also inspect specified airports and update the Airport Master Records (5010 form) for GA airports on behalf of the FAA. Additionally, they approve heliport landing sites near schools, and assist airport management in complying with the State and federal aviation laws and regulations.

The Office of Technical Services (OTS) is comprised of four civil engineers, including the office chief, and develops the ACIP and provides airport sponsors with guidance on the ACIP process. They also maintain and update the Airport Pavement Management System that identifies needs and estimates capital outlay costs and provides airport sponsors with technical support related to airport engineering.

The Division also supports specialized aviation programs. Three key programs include: 1) aviation noise, 2) CEQA review, and 3) the administration of all State grant programs funded from the Aeronautics Account. The Division's support staff is included as part of this team. The California Aid to Airports Program (CAAP) funding program is part of this team. The grants program reviews or manages projects approved through the State GA Loans, Acquisition & Development (A&D) Grants and federal AIP matching grants program. As part of this activity they also develop and manage FAA grant contracts.

Funding

GA airports in California typically use federal, State and local funding to support their maintenance and development projects. In support of these projects are the various local funding mechanisms derived from county and city budgets. The State grant programs for airports, plus the Divisions' operating expenses, are funded from the Aeronautics Account and not Caltrans. The Aeronautics Account is funded from excise tax revenues that are collected on GA fuel at the rate of 2¢ per gallon for non-commercial jet fuel and 18¢ per gallon for aviation gasoline. Of the revenue collected, Division operating expenses are first paid out of the Aeronautics Account, then the CAAP including annual credit grants, State AIP matching grants, and then A&D grants.

GA fuel excise tax funds the Division and its programs. Taxes typically generate about $7 million per year for the Aeronautics Account, depending on total fuel sales volume. About $3 million is used for Division operating expenses leaving only $4 million for annual credit grants, State AIP matching grants, and then A&D grants. The Aeronautics Account also receives minor revenue from other sources including interest earned on its cash balance and sale of documents such as the State aeronautical chart. This flow of revenue and expenditure is shown in priority order, as required under Revenue and Taxation Code §8352.3, shown in Table 1-1. This illustrates how small the investment in California's public aviation system is.

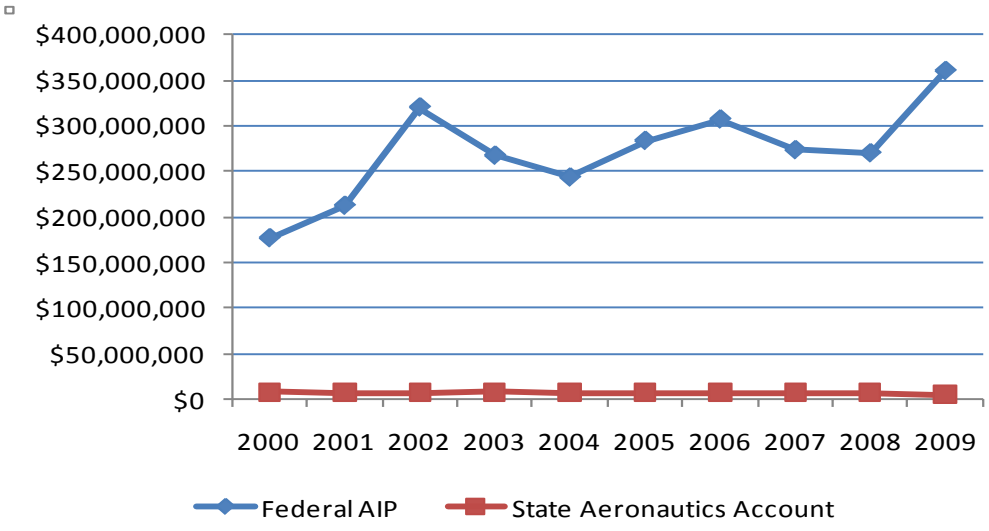
Table 1-1
Aeronautics Account Funding Sample

$7 million Revenue[17] (Continuously Appropriated)
$3 million Division Operations
$1.5million Annual Credit Grant
$1.5 million AIP Matching Grants
$1.0m A&D Grants

On the federal side, the majority of GA airports (192)[18] meet the NPIAS eligibility requirements for funded grants under the FAA AIP. Airports not included in the NPIAS are ineligible for FAA AIP funds.

On the State side, California has four general funding programs and includes Annual Credit Grants, State AIP matching grants, A&D grants, and the airport loan program. The Division's Annual Credit Grant provides $10,000 per year to eligible public use airports, while the AIP Matching Grant Program provides 2.5 percent of the 95 percent federal grant, while the remaining balance is made up by a local match. Non-NPIAS airports are ineligible for federal AIP grants. Figure 1-1 shows the disparity in grant funding levels between the FAA and the State over the recent ten-year period. This brief funding summary shows how necessary FAA funds are to California airports. Equally important to note is that the State's Matching Grant program is perceived as very important by California airport operators. In the absence of State Matching Grants, many airports would not be able to leverage the billions of dollars of federal AID funds set aside for the State.

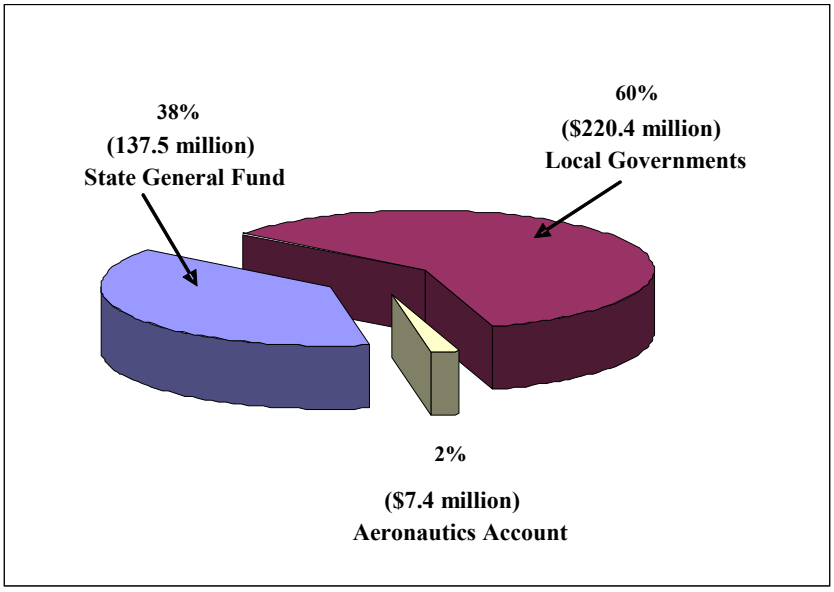
Figure 1-1
10-Year Summary of Federal and State Aviation Grant Investments



[17] Figures represent an average over the last ten years and fluctuate based on actual received aviation use taxes. The rate of use tax decline has been approximately 1.3 percent per year for the period 1999-2009.
[18] Federal Aviation Administration. *Report to Congress: National Plan of Integrated Airport Systems (NPIAS), 2009-2013.*

Considered from a broader perspective, in 2007 aviation's annual contribution to State and local governments exceeded $365 million. Approximately $138 million of aviation user taxes was directed to the State General Fund while approximately $220 million augmented local government revenues through aviation Sales and Use Taxes, Property Taxes and Possessory Interests that supported transit, public safety, schools and special districts. However, only a small percentage of the aviation revenues, typically around two percent per year, were reinvested in GA statewide. The lack of reinvestment into GA from aviation user taxes is illustrated in Figure 1-2. The two percent allocation back into aviation falls well short of the cost to fund safety, capacity and capability needs identified in the Division's 2010-2019 Capital Improvement Plan or the 2010 GASNA.

Figure 1-2
California Aviation Tax Revenue Sources and Distribution (FY 2007−08)



To help the FAA understand the types of projects that might best serve the entire State aviation system, the Division prepared a comprehensive GASNA Element in 2010 to focus this message, and updated its core project data in the Division's 2011 CIP. Given the importance of the project needs identified in the GASNA, core project/needs data is now updated semi-annually and posted on the Office of Aviation Planning's website, and is included biannually in the CIP. Simply stated, if airports are to be the job and economic growth centers they can be, then it is incumbent on the Division to recommend projects that would first improve airport infrastructure to safely accommodate local and regional markets. Appendix 4 of the GASNA provides core project needs, by airport, focusing on the type of projects that an airport may need to increase its capabilities to meet safety and infrastructure needs, along with capability upgrades. This information can thereby be used by others to forecast needs from the Division's perspective. The FAA can view the tables to see what the State considers important as they evaluate individual airport grant requests. This partnership helps remove doubt about what projects may be important to the State, and helps in the consideration of prioritizing limited funds towards system-wide improvements.

The State's Airport Loan Program can also be used to fund facility improvements at eligible publicly-owned, public-use airports. Loans are available for revenue generating projects such as

hangars and fueling facilities. Loans can also be made for airport development projects. Finally, loans can be made to assist the eligible airport sponsor with the local match for an AIP project. Eligibility for State funds, including AIP Matching Grants and A&D Grants, are subject to programming and allocation by the CTC. Information regarding these grants and loans can be found in the California Code of Regulations as Title 21, Division 2.5, Chapter 4, CAAP, which is available on the Division of Aeronautics web site[19]. Additional information on the funding program managed by the Division can also be found in the *California Airports Best Practices Guide* referenced earlier on page 1-20.

Airport Functional Classifications

Public use airports are classified in varying ways by different agencies. The FAA identifies airports as Primary, Nonprimary, GA, Reliever, or other based on the airport's reported annual enplanements) for differentiation in the NPIAS. California expands on this concept giving greater clarity to the types of GA airports around the State. Table 1-2 shows a comparison of categories used in California versus the FAA, and is explained in greater detail following the table. As a point of clarification, the reason the FAA designates some GA airports as 'Reliever' is that these facilities are eligible to receive special funding consideration under the FAA's AIP Entitlement Program. Relievers receive this consideration because they are designated by the FAA as a nearby GA airport intended to help 'relieve' commercial airport's runway pressure.

There are four general categories used by the FAA to classify airports in the 2011-2015 NPIAS, Primary, Nonprimary, GA or Reliever. The NPIAS defines GA airports as those that do not receive scheduled passenger service, usually have at least ten based aircraft and are at least 20 miles from the nearest NPIAS airport. In practice, GA airports do exist closer than 20 miles from the nearest NPIAS airport. Because of their relative proximity to Primary airports, a few GA airports have been designated by the FAA as Reliever Airports based on the role they play to alleviate congestion at Primary airports. Depending on the population base served, these Reliever airports are identified as either Metropolitan or Regional by the Division and must be public use facilities. In addition, if an airport enplanes more than 10,000 passengers, the FAA considers them Primary and further breaks them down by hub size–small, medium, or large. Airports having more than 2,500 but less than 10,001 enplanements are considered Nonprimary.

To better distinguish airports for State planning purposes, in 1997 the Division, through an involved collaborative process with our partners, created functional classifications to help distinguish GA airport types. Categories and sub-categories used to classify airports in California are based on unique factors including: access the airport provides, population size or geographic location of region the airport serves, type of flying activities that occur, aircraft accommodated, and services provided. Services provided are important when defining an airport's function as well as its role in the broader statewide aviation system. The Division, via the CASP, identifies GA airports as Limited Use, Community, Regional, Metropolitan, as well as the FAA's categories such as Primary or Nonprimary, and then uses subcategories to further delineate major operational activities.

[19] www.dot.ca.gov/hq/planning/aeronaut/documents/Regs_Fiscal.pdf

Table 1-2
NPIAS and CASP Airport Functional Classification Categories and Subcategories

FAA NPIAS[20] Classifications	CASP Functional Classifications
GA & RELEIVER	**Limited Use** Subcategory is added if the Limited Use Airport supports a special service. Agriculture Firefighting Recreational Access Medical Emergency
	Community Subcategory is added if the Community Airport supports a special service. Agriculture Firefighting Recreational
	Regional **Metropolitan** Subcategory is added if the Metropolitan Airport supports a special service. Business/Corporate Recreation Cargo
COMMERCIAL-PRIMARY & NONPRIMARY	**Nonprimary–Regional** **Nonprimary–Metropolitan** **Primary−(Hub-Size)–Regional** **Primary−(Hub-Size)–Metropolitan** Subcategory is added if one of the above category airports support a special service. Regularly scheduled passenger service Business/Corporate Recreation Cargo

[20] NPIAS = National Plan of Integrated Airport Systems. Airports included in the NPIAS can be found on the FAA's website at: http://www.faa.gov/airports_airtraffic/airports/planning_capacity/npias/

In California, the two FAA GA classifications are more clearly defined by function. Below, the GA airports are classified in one of the following four (4) categories:

Limited Use Airports–Airports that provide limited access, usually located in non-urban areas, may be used for a single purpose, have a 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 predominantly single engine aircraft under 12,500 pounds gross vehicle weight, provide basic or limited services for pilots or aircraft.

Regional Airports–Airports that provide the same access as Community airports but may provide international access, located in an area with a larger population base than Community airports, while serving a number of cities or counties, serve the same activities as 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 and may have a tower.

Metropolitan Airports–Airports that serve the same activities 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 services for pilots and aircraft, including jet fuel, has a published instrument approach and a control tower, provides flight planning facilities.

Subcategories used for Primary airports are intended to classify the GA activity that occurs there. The following subcategories are intended to emphasize prominent operational activities occurring at airports in a particular category further associating airports by function:

Agriculture–The use of an airport by aircraft for fertilizer application, seed dispersal, pest control and crop-dusting. *Used as a subcategory to designate: (1) a service provided at a Limited Use Airport, or (2) a prevalent activity at a Community Airport.*

Firefighting–The use of an airport by aircraft for aerial firefighting operations. *Used as a subcategory to designate: (1) a service provided at a Limited Use Airport, or (2) a prevalent activity at a Community Airport.*

Recreational Access–The use of an airport by pilots for recreational destination access. *Used as a subcategory to designate a service provided at a Limited Use Airport.*

Medical Emergency–The use of an airport by fixed-wing air ambulance aircraft to transport medical patients, accident victims, transplant organs and vital supplies to hospitals; serves remote regions not practical to be served by helicopters. *Used as a subcategory to designate a service provided at a Limited Use Airport.*

Recreational–The use of an airport by pilots not engaged in corporate or business flying or formal instruction; includes recreational and tourist destination access. *Used as a subcategory to designate the prevalent service provided at a Community, Regional or Metropolitan Airport.*

Business/Corporate–The use of an airport by an individual for transportation required by a business in which the individual is engaged (the pilot is not compensated); or the use of an airport by aircraft owned or leased by a company to transport its employees and/or property (professional pilot is compensated). *Used to designate the prevalent service provided at a Regional or Metropolitan Airport.*

Cargo–The use of an airport for transporting freight, mail and/or packages over a specified route by air. *Used as a category to designate the prevalent service provided at a Regional or Metropolitan airport.*

Special Use and Private Use airports (privately-owned, private-use) are not publicly funded. Military airports are also excluded due to limited State involvement. However, March Air Force Reserve Base and Palmdale Plant 42 have the potential to increase capacity in the future as Joint Use facilities, providing limited, nonmilitary air carrier operations.

Beyond the aviation planning applications of the functional classifications, the highway side of Caltrans, as well as MPOs and RTPAs, can use these classifications to help integrate their community's airport type into regional planning documents and access road transportation plans. It is recommended that community and transportation planning documents use these more descriptive airport classifications to help guide and integrate future projects in the greater airport environment.

Section 2
Policies, Goals, Implementation, and Performance

Section 2
Policies, Goals, Implementation, and Performance

Introduction

Over the past 20 years, various editions of the PE have seen the number of policy topics grow and contract. In 1995, there were 17 topical areas, while in 2006 there were only five. This version incorporated the most substantive and consistent issues of the past 20 years, while thinking of the needs of tomorrow, and incorporated them in a fresh manner.

This section outlines the Division's seven major policy topics and the objectives for each. These policy or topical areas have been linked to the Aeronautics Act (where possible) to ensure the Division is first meeting its statutory obligations. Beyond meeting required statutes, these policy areas summarize the core functions of the Division as updated since its enactment by the Legislature in 1947. They have been adjusted over the years to keep pace with the changes in aviation without losing sight of safety and sustainability issues. Goals and objectives should remain fairly constant with substantive changes coming only in how they are implemented.

The layout of this section has been redesigned to allow readers to quickly view the major policies and corresponding objectives with a short discussion of why they are important. Some discussion is also provided as to where the Division would like to go with the topic. If pending actions are temporarily constrained, those reasons will be explained.

A discussion of the seven policy topics can be found on the following pages:

- Stewardship and Preservation Page 2-2
- Safety Page 2-5
- Mobility Page 2-8
- Airport Integration in Land Use Planning Page 2-11
- Economics Page 2-14
- Environment Page 2-17
- Education and Research Page 2-20

STEWARDSHIP AND PRESERVATION (SP)

Policies

SP-1: Encourage the development of private flying and the general use of air transportation. PUC §21002(a)

SP-2: Assist in the development of a statewide system of airports. PUC §21002(d)

SP-3: Encourage, foster, and assist in the development of aeronautics in this State and encourage the establishment of airports. PUC §21241

SP-4: Draft and recommend necessary legislation to advance the interest of the State in aeronautics. PUC §21242(a)

Objectives

SPo-1: Support and participate in regional events that promote continuing flight safety and education.

SPo-2: Participate in regional forums that seek to develop and promote passenger, cargo, and other air transportation activities at commercial and GA facilities.

SPo-3: Encourage planning activities that would foster the development of a statewide system of airports working towards meeting safety, capacity, and economic self-sufficiency objectives.

SPo-4: Promote the development of new airports, and modification of existing airports that would benefit statewide air transportation and economic sustainability.

SPo-5: Promote the efficient use of existing airport facilities by demonstrating their use as mixed use business centers that are compatible with airport environments.

SPo-6: Prepare clean-up legislation or new legislation that would support current aviation standards and practices or realign government activities to be more cost and labor efficient.

SPo-7: Compile statistical data first in support of the GASNA and ACIP. Secondary data collection shall support FAAs 5010 airport database, air cargo functions, Caltrans requests, legislative and Agency requests, and commercial airport requests as resources allow.

SPo-8: Compile funding data that summarizes the State's investment in aviation.

Implementation

- All Offices
  - SPi-1: Support and attend events that promote safe and sustainable aviation.
  - SPi-2: Prepare articles, media materials, or other related communications to advance aviation or the understanding of issues affecting and benefiting aviation.
  - SPi-3: Expand communications to advance the value of aviation to a community's business and tourist economies.
- Office of Airports
  - SPi-4: Expand outreach to pilot and other airport user groups to facilitate aviation safety and community, focusing on GA.

- Office of Aviation Planning
  - SPi-5: Advance aviation planning within professional associations and local governments as possible. Focus to be on integrating airports in community plans and design frameworks.
  - SPi-6: Prepare recommended clean-up legislation or new legislation supporting current aviation standards and practices or realign government activities to be more cost and labor efficient.
  - SPi-7: Prepare an annual State aviation funding summary to TACA for their use in compiling their annual report to the CTC.
- Office of Technical Services
  - SPi-8: Promote ACIP projects that protect past federal and State aviation investments equitably.
- Specialized Aviation Programs
  - SPi-9: Advocate for ACIP projects and A&D grant applications that support a stronger system of airports rather than individual airport projects.

Performance

- All Offices
  - SPp-1: Submit annual report to Deputy Director, Planning and Modal Programs, and TACA documenting activities participated in to advance aviation and address issues affecting aviation.

Discussion

Protecting and advancing the State's aviation system has been a long-standing policy objective. Regular endeavors have included preserving previous investments on federally obligated lands, maintaining conditions in FAA and State grant programs, and keeping up with routine maintenance at public use airports. Similarly, supporting airport sponsor requests for airside safety and capacity enhancements remains a key priority in this policy area.

The real challenge in California has been to respond in unison to the larger question of why local governments should continue to invest, or increase their investment, in their nearby or regional airport(s). Digging deeper into this issue, one usually finds questions wrapped around an institutional misunderstanding of what an airport can do or be for its community. While some regions aggressively pursue and enjoy the economic benefits of their airport, others view the facility as just a civic asset separated from the greater community. Adding to this problem, some contemporary urban design paradigms have failed to adequately integrate airports into their design framework thus perpetuating the isolation of these valuable public resources. Yet today's global market relies on time sensitive delivery of goods and services giving credibility to the expression that planes fly to markets, not airports. Aviation has made it possible for even rural communities to be connected to larger global markets and services with relative minimal infrastructure investments thus explaining the expression build a mile of road and you drive a mile. Build a mile of runway and you have access to the world. Linked and developed with compatible services, airports can be substantial job centers and economic hubs, particularly for industries that may not fit in compact, pedestrian-focused, mixed use urban cores.

The Division has the desire and ability to help advance the wise use and conservation of our aviation system. Yet opportunities to do so will have to be creatively crafted in these times of economic challenge. The ER policies discussed later will address the education and outreach

efforts that help meet this goal. Beyond this, the Division may need to involve itself in federal, State, and local programs that may seem at first blush to have little to do with airside investments. If community planners have not included airports adequately in their General and Specific Plans, RTPs, goods movement/freight plans, access plans, or emergency response and recovery plans, to name a few, the rationale for continuing to preserve a given airport can become weak. Division support to advance aviation in these types of documents will go far to preserve public use airports around the State.

Beyond individual airports, some areas of the State have regional aviation system plans that seek to link airports within their geographic area of oversight. Some examples include the San Diego County Regional Airport Authority, Southern California Association of Governments and the Metropolitan Transportation Commission in the San Francisco Bay Area. In addition to these types of groups, associations not limited to the Association of California Airports, California Pilots Association, California Airports Council, Aircraft Owners and Pilots Association, and the National Business Aviation Association all advocate for improvements in California aviation to various degrees. Linking the objectives of these regional and aviation interest organizations and that of the State has not been crafted at a comprehensive level into a single document. Some have questioned if that's possible given the number of public use airports (249) in the State, none of which are owned or operated by the State. Yet the Division is advancing the concept of creating a type of system plan that could work in California. Such a plan is envisioned to need to include:

- A new framework for identifying priority airports by county.
- Identification of priority preservation projects at airports.
- Stronger integration of aviation into regional and local planning documents.
- Better goods movement/freight integration at the regional level.
- Better access for passengers and commerce in and out of airports.
- Better use of airports as cargo nodes for ground and air distribution.
- Better accommodations for disaster/emergency response and recovery.
- Better integration of airports in regional and State economic development programs.
- Better land use compatibility planning around airports.
- Support TACA in their annual summarization of statewide aviation funding shortfalls and recommendations.

Action items and performance measures in this policy area overlap with some activities in the Education and Research policy. Explaining to a local government or professional organization why the State's aviation system and their local airport are important to their community is as much a goal of education as it is of preservation. Part of this story requires explaining how using and improving the existing system of airports benefits everyone and with significant cost-benefit over building many types of new transportation infrastructure. To advance this, the Division will need to create a unique system plan that works around the challenge of the State not owning any airports and having only limited influence in local airport planning and preservation activities. Although various regions of the State have their own system plan for their airport(s), development of one State-level document tying these programs together with standards that benefit the entire aviation system will be a worthy challenge.

SAFETY (SF)

Policies

SF-1: Foster and promote safety in aeronautics. PUC §21002(b)

SF-2: Conduct FAA Airport Master Record (FAA Form 5010-1) update and State Permit compliance inspections.

SF-3: Issue airport site approval and airport permits, and related amendments. PUC §21662

SF-4: Conduct evaluations for proposed school (K-12), community college, and State building sites within two miles of an airport pursuant to Education Code §17215, Education Code §81033, and PUC §21655, respectively.

SF-5: Review and evaluate applications to authorize helicopter landings near schools. PUC §21662.5

SF-6: Advocate for safer, security-aware airports for all users of these facilities.

Objectives

SFo-1: Identify and prohibit any activities which introduce potential aviation safety, airspace hazards, or security hazards.

SFo-2: Conduct annual safety inspections and permit enforcement programs for public use airports and heliports as set forth in federal guidelines, State law and administrative regulations.

SFo-3: Conduct evaluations for proposed school (K-12), community college, and State building sites within two miles of an airport pursuant to Education Code §17215, Education Code §81033, and PUC §21655, respectively.

SFo-4: Review and execute authorization requests for helicopter landing near schools.

SF0-5: Promote Crime Prevention Through Environmental Design (CPTED) concepts as a tool to help promote safer aviation facilities for all users.

Implementation

- Office of Airports
  - SFi-1: Continue efforts to complete permit compliance inspections for all public use airports on a twelve-month inspection schedule.
  - SFi-2: Continue efforts to complete permit compliance inspections for all public use heliports on an eighteen-month inspection schedule.
  - SFi-3: Complete FAA airport Master Record inspections and updates in accordance with FAA contract specifications.
  - SFi-4: Complete evaluations for proposed school, community college, and State building site evaluations within 30 working days of review request.
  - SFi-5: Expand outreach to pilot and other airport user groups to facilitate safety enhancements at public use aviation facilities, focusing on GA.
- Office of Aviation Planning
  - SFi-6: Promote crime prevention planning strategies at public use GA airports using programs such as CPTED.

• Specialized Aviation Programs   o SFi-7: Continue to monitor and participate in airport noise programs with a goal of incorporating appropriate content in relevant planning documents.
Performance

• Office of Airports
  o SFp-1: Goal is to enhance aviation safety for each airport within a reasonable amount of time following inspections. Office should include successes in an annual summary to the Division chief.
• Office of Aviation Planning
  o SFp-2: Include CPTED concepts in appropriate planning documents.

Discussion

The Division considers promoting a safe aviation environment for pilots, passengers, and persons on the ground its most important obligation. It achieves this by applying one simple axiom; limit the number of people exposed to potentially hazardous conditions. Applying this axiom to planning, design and flying positively influences a safe experience for all direct and indirect beneficiaries of aviation.

The Division's most visible safety efforts are the airport and heliport inspections conducted by the Office of Airports. Our Aviation Safety Officers, all of whom are commercial certified pilots with instrument ratings, work with airport operators to keep their facilities consistent with FAA design safety standards. Permits to operate a public use airport in the State are issued by the Division and are dependent on the airport meeting specified FAA design standards. Yet an airport operating within FAA standards is not the whole safety story. In keeping with our charge to limit the number of persons to potentially hazardous conditions, the Division evaluates new school site, community college, and State building proposals, and reviews requests to authorize helicopter landings, within two-miles of schools (K-12).

The practice of evaluating the acquisition of school, community college, and State building sites within two-miles of an airport is an important concept. It follows the understanding that most aircraft accidents occur close to an airport as planes maneuver for takeoffs and landings. This established understanding is why aviation and land use planners recommend low density developments in the primary departure and arrival corridor of runways. These corridors extend well beyond runway ends to a limit determined safe by aviation officials. In California, a distance of two-miles from the runway end has been the routine limit for safety evaluations. However, technological changes in various industries, from aviation to sustainable energy, have given rise to question if two-miles are still reasonable. Some are advocating for a four-mile review area. The reasons are simple. From a flying perspective, it can take a small aircraft three-minutes or less to fly four-miles on final approach (not considering the wide myriad of variables). Protecting persons on the ground in this final four-mile approach corridor should at least be considered by planners and ALUCs when they look at project densities and the number of persons they are approving for assembly or living. Assisting with the determination of safe flying, particularly on final and short final approach, should also include pilots and pilot user groups. Their perspective on visual and physical obstructions, as well as ground movements, should not be overlooked in formal safety discussions.

Beyond flight safety, airports themselves should be a safe environment for all users of the landside and airside parts of the facility. There is well established design principle to help reduce crime and increase general safety in public spaces known as CPTED. CPTED concepts have been used around the world since the 1970s to modify existing or design new spaces and buildings to reduce personal and property safety problems before they occur. Elements such as trimming landscape materials in key areas to reduce hiding places, focused night lighting instead of general broadcast lighting in key areas, creating clear lines of sight from external airport viewers to valuable assets such as planes and hangars to minimize theft, and many more. The Division encourages airport operators, system planners, and flying groups to consider CPTED principles when improving their facilities. The Division can be contacted to help initiate CPTED planning concepts at local airports. Once a safety program is identified, the FAA can be contacted to check which of the proposed activities are eligible for federal assistance.

MOBILITY (MB)

Policies

MB-1: Foster access for small and rural communities to the national air transportation system. PUC §21002(h)

MB-2: Improve access to aviation resources through appropriate multi-modal transportation initiatives.

MB-3: Improve ground access to airports that support passenger, air cargo, and GA opportunities.

MB-4: Improve multimodal access to public use airports for all users including passengers, tenants, and employees.

Objectives

MBo-1: Support access improvements to the national aviation system from small and rural communities.

MBo-2: Improve ground access to airports for passengers and freight through better inclusion of airports in planning documents.

MBo-3: Preserve an effective system of reliever and GA airports in California that compliment commercial service passenger and cargo needs.

MBo-4: Improve transit connectivity to airports by closing gaps to and from population centers.

Implementation

- All Offices
  - MBi-1: Participate in internal and external CIB activities that promote multimodal passengers, freight, and employee access through the greater airport environment.
- Office of Aviation Planning
  - MBi-2: Provide support to RTPAs, MPOs, and Caltrans' district offices on how to better include airport access in transportation planning documents.
  - MBi-3: Provide written comments on draft RTPs and OWPs regarding the importance of both passenger and cargo ground access and other issues pertinent to including airports in community and regional planning.
  - MBi-4: Participate in State-level transit planning activities to promote better transit connectivity and use of airports for better transit solutions.

Performance

- Office of Aviation Planning
  - MBp-1: Demonstrate completion of written products supporting and/or participating in CIB workshops.
  - MBp-2: Qualitatively report on increased RTP and OWP inclusion of airport needs in such documents.
  - MBp-3: Report on participation in Caltrans multimodal activities where the Division has not been previously involved.

Discussion

It is not uncommon for surface transportation documents and models to limit the investigation of aviation mobility to the movement of people and cargo in and out of an airport. Unfortunately, this approach has repeatedly told an incomplete story. Airport mobility is far more complex and includes movements on the airside of the airport (various types, sizes, and quantities of airplanes, fuel trucks, service and cargo vehicles, emergency response vehicles, etc.) and landside movements (passenger vehicles, bicycles, pedestrians, shuttles, taxis, buses, freight trucks, concession supply vehicles, and more.) Also lacking is the consideration that airports are job centers and employees working at the various businesses on the airport desire multi-modal transportation opportunities the same as workers in other large employment areas. The Division is working towards retelling this part of the airport story to better facilitate the inclusion of airport needs in transportation and community planning documents.

From the airside perspective, airports are considered to be reaching capacity when congested ground movements prevent airplanes from efficiently moving around and take offs and landings cannot be met on a reasonable timetable. This congestion can come from airspace, runway, and taxiway congestion, as well as insufficient ramp space to move aircraft and support vehicles around in a safe and efficient manner. Likewise, having sufficient cargo transfer space on the airside of the airport is equally critical to air cargo providers looking for places to expand their routes. Equally important, once air cargo is transferred to truck, if that truck is delayed getting out of the airport or on a local street, the reliability/value of that airport for overnight service declines. Having a system of airports capable of handling some volume of cargo helps keep the economics of dependable goods movement in the State.

Landside access is better understood because it is experienced by more users. A common response to airport access needs is to ensure that there is adequate ingress and egress to and from the airport on local roads. As suggested earlier, this approach is inadequate for most public use airports. First, the FAA has traditionally limited their surface transportation funding support to projects inside the property limits of the airport; local governments take over from there. If local jurisdictions or the FAA can't keep pace with each other's programs, congestion or other inefficiencies result. Such traffic delays affect not only aircraft operations but passenger and airport employee schedules. For these reasons and more, the Division is actively pursuing better integrated multi-modal airport access programs statewide.

Community airport access is similar to the landside access issues just mentioned, but with a heavier focus on providing multimodal access to the airport. Continuing the concept that airports could be increasingly viewed as employment centers, the need for multimodal connectivity becomes of greater concern. Passengers, as well as airport employees, should be considered in the equation of how to provide or improve transit service to the airport. Likewise, some inner-city GA airports may need to consider bicycle and pedestrian connectivity to reduce the reliance on auto trips and parking. Some of the Smart Mobility Framework concepts introduced in Section 1 could be used to facilitate solutions for more accommodating road designs into the airport.

Particularly during WWII, military airfields were often located in remote areas with limited access. Many of these facilities have since been converted to public use airports that have grown to meet user needs rather than developed or planned to meet expanding community or market needs. Consequently, airport access plans need to consider if it is appropriate to have several roads separating uses for efficiency and safety reasons or if new access roads would separate airfield uses for more fluid, safe access. Recognizing that maintaining more than one access

route increases costs, it still may not be desirable or safe to have cargo and passengers sharing the same road. Access considerations need to be closely weighed against the Airport Layout Plan (ALP) or master plan with local and regional transportation plans to ensure an appropriate balance between use types and system efficiencies.

Caltrans has entered a new era of multimodal transportation and community planning. There will be new opportunities for the Division to sit at the table with broader regional planning programs and affect actions that better include aviation in mobility discussions. The Division and Office of Aviation Planning will be better represented in these discussions and looks forward to writing, developing, and implementing a comprehensive report on progress towards better aviation integration with other transportation modes to enhance mobility for all.

AIRPORT INTEGRATION IN LAND USE PLANNING (PL)

Policies

PL-1: Prepare a CASP for California airports identified in the NPIAS and other public use airports identified by the Division. PUC §21701

PL-2: Promote compatibility planning between airports and surrounding land uses.

PL-3: Provide information and guidance to ALUCs about their roles and responsibilities pursuant to Article 3.5 of the Aeronautics Act.

PL-4: Provide limited statistical data support for Division and CASP functions.

Objectives

PLo-1: Continue to update the CASP with contemporary aviation issues compatible with the Aeronautics Act.
PLo-2: Encourage planning activities that foster better airport land use compatibility.
PLo-3: Provide timely support for ALUC activities.
PLo-4: Compile statistical data primarily to support the GASNA and Airport Capital Improvement Plan. Secondly, data collection shall support FAAs 5010 airport database, air cargo functions, Caltrans requests, legislative and Agency requests, and public use airport requests as resources allow.
PLo-5: Integrate aviation objectives into the various elements of the CIB as appropriate.

Implementation

- Office of Aviation Planning
  - PLi-1: Continue preparation of CASP elements recommending improvements as necessary to keep the CASP in line with current aviation and system planning needs.
  - PLi-2: Participate in CIB planning activities with a focus on better integration of aviation in statewide community and transportation planning programs.
  - PLi-3: Meet with ALUC's to help improve their understanding of their roles, responsibilities and limitations as outlined in the Aeronautics Act.
  - PLi-4: Assist ALUC's with an understanding of various planning programs that can affect aviation and their review roles.
  - PLi-5: Provide support in the use and interpretation of the Handbook.
  - PLi-6: Provide aviation-related support during the preparation and review of RTPs, OWPs, and General Plans as appropriate.

Performance

- Office of Aviation Planning
  - PLp-1: Document activities in Caltrans planning programs where participation has not been demonstrated in the past.

Discussion

Encroachment of incompatible land uses in the vicinity of airports continues to be the greatest threat to safe airport operations. This issue can be exacerbated when local planners, politicians or developers have a limited understanding of the unique requirements of compatible land use planning near airports. Consequently, preserving and maximizing the benefits of aviation falls heavily on the shoulders of the various types of public and private planning organizations around the State. Meeting this challenge often means the State, in cooperation with local, regional, and federal agencies, have to provide and identify directives and resources necessary to develop the aviation system essential to our economy in the 21st Century. California must continually assess its role in aviation to ensure that it remains competitive in a global economy that is becoming even more inclusive of aviation.

California has a program for initiating land use compatibility around airports. It begins with the formation of ALUCs beginning at PUC §21670. The PUC requires every county in which there is located an airport benefiting the general public to establish one of six types of ALUC. Next, each ALUC is required, pursuant to PUC §21675, to prepare an ALUCP for the sustainment and orderly growth of each public airport and the area surrounding the airport. Guidance on these requirements is published by the Division in the California Airport Land Use Planning Handbook available for free downloading from the Division's website, or by contacting one of the Divisions ALUC/airport land use planning staff identified on the Office of Aviation Planning's weblink.

Nuances of the PUC related to the limits and responsibilities of the State, ALUCs, and local agencies require greater explanation. The following discussion of the airport land use compatibility planning process is intended to address some of the more common misperceptions about the PUC requirements.

Basic ALUC Compatibility Planning Process

The ALUC is a single purpose entity responsible for preventing the creation of new noise and safety problems in the vicinity of public use airports. ALUCs oversee the compatibility of land uses surrounding public use airports. The ALUC is broadly an advisory body that makes land use compatibility recommendations to local governments. ALUCs have been granted the statutory authority to prepare an ALUCP and to review local government General and Specific plans. ALUCs monitor the consistency between local government planning documents (including Airport Master Plans) and their ALUCP. In some cases, they also review the compatibility of land use projects with regard to airport operations. ALUC safety recommendations take the form of a consistency determination.

The tool that ALUCs use to accomplish airport land use compatibility planning is an ALUCP that marks the ALUC's jurisdictional boundary, defined in this context as the airport influence area. ALUCs do not provide guidance outside of their respective airport influence area. Rather, they review land use actions subject to ALUC review and its policies for ensuring compatible land uses in the vicinity of public use airports within the county. In order to address current development pressures, ALUCPs should be updated as often as needed based on development trends around the airport. This may include considering any changes in the Housing Element of a city or county General Plan to ensure compatibility with land use goals and objectives. (pers SB 375, GC 6580).

The ALUCPs policies and procedures are in addition to local government's. The ALUCs policies are designed to protect a specific resource (airports) and to influence development choices within the sensitive area adjacent to public use airports. ALUC oversight and their determination-

making processes create the "checks and balances" to ensure sound airport land use planning decisions.

Beyond ALUCs and ALUCPs, local RTPs should also be more inclusive of the needs of airports to insure infrastructure and multimodal transportation needs are identified. More specifically, Overall Work Programs should identify projects that support aviation, and limit encroachment of incompatible development.

The ability of general plans, specific plans, RTPs, and other similar planning documents to be inclusive of airports is dependent of the stated value of airports in these documents. Too often airports are isolated from an integrated approach to community planning, such as those championed in State and regional planning paradigms such as Caltrans' CIB project. Caltrans is making a concerted effort to incorporate aviation as an integral component of regional planning programs and will continue to champion for better inclusion of aviation in RTP, CIB, and like documents around the State.

Traditional Responsibilities

The Division will continue in its role of providing guidance to ALUCs regarding their roles and responsibilities as outlined in the Aeronautics Act. The Division will also continue to improve the Handbook as a resource for ALUC's to conduct airport land use compatibility planning. The performance goal is to demonstrate that additional activities in these areas have occurred, but more importantly, that provisions are made to permanently see that such activities will be continued despite funding shortfalls. These activities are viewed by the Division as core duties.

Emerging Responsibilities

As Caltrans adopts and refines strategies for participating in multimodal community planning, the Division will have a key role in some areas, and a lesser role in others. Some of the planning areas where the Division will likely have increased involvement include:

- California Interregional Blueprint
- Smart Mobility Framework
- Complete Streets
- Sustainable Communities Strategies
- Local Development – Intergovernmental Review
- Office of Projects/Plan Coordination
- Public Participation
- Climate Action Program
- Goods Movement
- Public Private Partnerships
- California Essential Habitat Connectivity Project
- Disaster planning and recovery.
- Military Liaison

The initial performance goal is to create a voice for aviation in all these programs. Success will be measured if we see that goal achieved. Yet once the initial goal is achieved, the Division will need to fine-tune the aviation message in each of these programs as appropriate.

ECONOMICS (EC)
Policies
EC-1: Encourage the flow of private capital into aviation facilities. PUC §21002(d) EC-2: Develop information programs to increase the understanding of the role of aviation in the economic development of the State. PUC §21002(i) EC-3: Promote the role of publicly owned or operated airports as a matter of statewide importance in the development of commerce and tourism. PUC §21690.5(c)(e)
Objectives
ECo-1: Advocate and promote the concepts of P3 in support of airport development and improvement. ECo-2: Promote airports as an economic development resource for the State and local communities. ECo-3: Promote the value of aviation in commerce and tourism in statewide forums and literature.
Implementation
• Office of Aviation Planning o ECi-1: Support P3 as a type of funding mechanism for economic development in appropriate Division publications. o ECi-2: Promote airports as economic development opportunities worthy of greater inclusion in regional and local planning documents. o ECi-3: Promote aviation as necessary to enhance and increase the State's commerce and tourism industries in Division documents and at conferences or workshops.
Performance
• Office of Aviation Planning o ECp-1: Incorporate P3 in the Division's PE update. o ECp-2: Deliver the message of incorporating airports as economic development tools at planning and airport management conferences or workshops annually. o ECp-3: Deliver the message that aviation is necessary to enhance the State's commerce, tourism industries, public safety, and law enforcement practices annually.

Discussion

Airports are economic engines. This phrase is repeated countless times every year in the aviation industry. However, the value of this message is often lost as airports continue to be poorly integrated into the fabric of their communities. In 2003, aviation in California contributed nine percent to the State's Gross Domestic Product and nine percent to statewide employment – numbers that are significant when considering that California struggles to maintain its status as one of the top ten economies in the world. Aviation is an industry that generates revenue as it increases quality of life.

Outside of major commercial service airports, many GA airports in California struggle in the area of financial self-sufficiency. Poorly integrated in, or absent from, community, regional or State

economic development programs, airports are wrongly perceived as a single use facility dedicated to airplanes. Airports are business, commerce, community and employment centers that happen to have a runway which only increase its economic value. The lack of investment and reinvestment in California aviation has reached a critical place. It is timely that the Division, the State's principal champion for aviation, re-voice the value of aviation within the California economy.

In Section 1, a concept was introduced for consideration where every county in the State would have not less than one fully capable airport programmed to serve multiple pubic benefits, economic development being one of them. From a system planning perspective, such a concept could vastly improve the export opportunities for the various regions of the State to a world market. Likewise, improved intrastate and interstate air accessibility could increase business, cargo, recreation, and tourism opportunities. Perhaps greater, GA airports capable of serving multiple roles could also better support emergency response access to a region during the critical times of an event as well as aid in recovery efforts. This value of an integrated system of minimally-capable GA airports cannot be overstated. Facilities that can accommodate emergency fixed wing and rotor aircraft of appropriate size are sought out by emergency service as well as law enforcement aviation units. When these units visit or base their operations at one of these facilities, the economy of that area benefits. This win-win scenario is good for the community and emergency air support providers.

The State and Division can demonstrate a stronger 'open-for-business' attitude regarding development opportunities around airports. While adhering to FAA standards and grant assurances, and monitoring development for lower-person densities in the primary departure and arrival corridor of runways, the Division supports maximizing the commercial development potential of airports. Encouraging such development at airports around the State optimizes the movement of goods and helps reduce airport access and traffic congestion. A key tool missed at many GA airports to promote such uses is the development and implementation of a focused marketing plan. ACRP Report 28: *Marketing Guidebook for Small Airports*, has made initiating this process simpler by providing a framework for use at the local level. Many examples from around the State and country demonstrate that mixed-use commercial development has found a sustainable home in the immediate vicinity of GA airports. State and civic leaders need to champion these development types.

Delivering the message that airports are vital for the economic health and recovery of the State is more important now than ever. It will be important for the Division to tell a more robust story for how aviation can generate jobs and commerce for all areas of the State. The Division is attempting to address a broader audience with this message focusing more attention on local and regional planners, economic development managers and professionals organizations comprised of these individuals. Given that the aviation community already understands this message, the attention needs to be turned to those who may not understand how to include aviation in their planning programs. For example, some hangars may serve as a place for some types of public gatherings, assuming airside safety is not compromised. Leasing office space in a GA terminal for nontraditional airport businesses (i.e. accounting, legal, consulting, etc.) can help defray airport expenses while presenting the airport to those who would not otherwise visit the facility. Likewise, incorporating appropriate mixed use building models for terminal design can increase the diversity of businesses and persons using the airport. Diversifying the economic base of the airport is critical to sustaining the facility during periods of economic challenge.

Aside from traditional business endeavors, the Division is also investigating unique means to promote California GA in ways that support airports. Other states, such as Virginia and

Minnesota, have a passport program where pilots and enthusiasts get their "passport" stamped at various GA airports and receive recognition based on the number of airports visited. California is looking into similar programs as funding allows. There are also national airport art contests for students, as well as youth Civil Air Patrol squadrons, scouting programs, air shows, and focused field trips for teaching the value of, and career possibilities in, aviation. Although participation is funding dependent, these programs have been supported by Caltrans and the Division in the past with anticipation of greater involvement in the future as financial pressures subside. Hosting such programs at an airport is good for the community and economically beneficial for the airport.

ENVIRONMENT (EV)

Policies

EV-1: Review airport-related safety and regional aviation land use planning actions pursuant to the CEQA.

EV-2: Protect persons residing in the vicinity of airports against intrusions by unreasonable levels of aircraft noise. PUC §21002(g).

EV-3: Promote environmental sustainability in California aviation through methodologies that do not jeopardize flight or ground safety.

Objectives

EVo-1: Employ CEQA standards as a tool to promote land use safety and compatibility around airports while protecting the built and natural environments.

EVo-2: "…protect public health, safety and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses." PUC §21670(a)(2).

EVo-3: Support energy self-sufficiency and appropriate technologies that are compatible with flight and airport operations.

EVo-4: Support environmentally responsible airport design through appropriate green-build technologies.

Implementation

- Office of Airports
  - EVi-1: Report any suspected environmental concerns to the airport manager and Division staff environmental planner following airport inspections.
- Office of Aviation Planning
  - EVi-2: Continue proactive involvement in environmental sustainability by working with airport operators and energy partners to promote reasonable solutions in statewide planning documents.
  - EVi-3: Conduct site visits of airports implementing sustainability solutions for incorporation in future Division materials.
  - EVi-4: Participate in green-build conferences or workshops to champion appropriate technologies for the airport environment.
- Specialized Aviation Programs
  - EVi-5: "…adopt noise standards governing the operation of aircraft and aircraft engines for airports operating under a valid permit issued by Caltrans to an extent not prohibited by federal law." PUC §21669.
  - EVi-6: Work cooperatively with stakeholders to diminish noise problems. California Code of Regulations, Title 21, §5000 et seq.
  - EVi-7: Participate in local land use planning activities that prevent the creation of new noise problems and recommend appropriate land use compatibility measures (such as avigation easements and acoustical treatment of incompatible structures), where appropriate.
  - EVi-8: Monitor progress by designated noise problem airports to reduce their noise impact areas.
  - EVi-9: Encourage communities to limit new noise sensitive land uses in areas near

airports exposed to significant levels of aircraft noise.
Performance
• Office of Airports o EVp-1: Provide additional space on airport and heliport inspection forms to include natural resource hazards or concerns. Elements could include greater awareness of land uses that encourage wildlife hazards. • Office of Aviation Planning o EVp-2: Participate in not less than one green-build, environmental sustainability workshop or conference annually to address strengths and limitations of some sustainable technologies on aviation safety. • Specialized Aviation Programs o SFp-3: Monitor and/or recommend, where appropriate, noise mitigation strategies for noise sensitive developments near airports in appropriate documents.

Discussion

Caltrans has taken an active role in supporting programs geared at improving the environmental quality of life in California with the Division participating where appropriate. A regular environmental activity of the Division is its commitment to evaluating relevant project applications on and around airports pursuant to the CEQA. The CEQA Statutes, at §21096, outline how proposed projects on or within two nautical miles of an airport are to be evaluated using Division resources, such as the Handbook and other documents, in conjunction with the CEQA Statutes and Guidelines. The Division then reviews and comments on these CEQA documents to ensure that proposed developments do not significantly impact airports. If potential significant impacts may occur, the Division will provide mitigation measures to the Lead Agency for incorporation in the final CEQA document. The Division exercises this authority under the provisions extended to a Responsible Agency as defined in the CEQA Guidelines at §15381. The Division has a dedicated environmental planner staffed to assist with CEQA reviews.

Of the 17 CEQA topical areas used to evaluate the potential impacts of a project, the topic of noise is of particular importance to the Division. Beyond CEQA noise evaluations, the Division also supports and encourages the development of programs designed to diminish existing aircraft noise impacts and prevent the development of new noise problems. Despite quieter Stage 3 aircraft, noise exposure from airplanes continues to impact thousands of residential units around the State's ten county-designated "noise problem" airports. The Division exercises its regulatory role in assuring the accuracy and standardization in noise monitoring programs and balancing the needs of the "noise problem" airport and the general public via the noise variance process. Examples of some proactive steps taken to prevent new noise problems include working with our partners by responding to development proposals, conducting school site evaluations, reviewing State building proposals near airports, and encouraging local governments to adopt noise policies that are consistent with an adopted ALUCP or the Handbook, in the absence of an ALUCP.

There are other environmental considerations monitored by the Division. For example, FAA-required clear areas around airports are often misperceived as usable space for non-aviation uses. Far from reality, these areas are needed to minimize development and potential injuries in the case of an emergency. A common buffer proposed around airports is a golf course. The concern here is that water found on many courses attracts water fowl that can create a bird strike hazard. The general rule of thumb is that all open spaces around airports should be actively managed,

within federal and State guidelines, to minimize food, water, and cover for wildlife. Preventing wildlife from interfering with safe aviation is a substantial concern for the FAA and the Division. For this reason the Division works with the U.S. Department of Agriculture to help understand how to avoid wildlife hazards at airports and mitigate impacts before they occur.

Beyond natural resource issues, communities and airports around the State are implementing environmental strategies, including 'green technologies', on and in the vicinity of airports. An emerging concern for aviation is some of today's green energy programs. For example, farms of electricity-generating wind turbines within ten-miles of airports have documented cases of ground-based radar interference due to the electromagnetic fields emitted from the turbines. The FAA, U.S. Air Force, and energy researchers are actively working to address this hazard. Another concern is thermal plumes emitted from even small power generating plants that are cited near runways. Some of these power plants can send high velocity hot exhaust (thermal plume) gasses hundreds of feet in the air disrupting airflow around an aircraft creating unstable flight characteristics, some of which may be unrecoverable depending on type of aircraft, pilot skill level, and flight altitude. Also, solar energy panels are emerging with high frequency at airports given the access to undeveloped land and clear skies. There are excellent examples of how this technology can be safely employed at airports, such as at Fresno Yosemite International Airport. Locating panels in the wrong place can create serious hazards to aviation. In fact, some types of solar arrays have the potential to flash blind pilots miles from an airport during the critical times of executing takeoff and landing procedures. The Energy Commission, Siting, Transmission and Environmental Protection Division, is keenly aware of the above concerns and is partnered with the Division to seek solutions to promote clean renewable energy solutions but in a manner that does not jeopardize flight safety.

The Division supports the State's goal of developing clean energy technologies and encourages airports to seek sustainable energy solutions. Other solutions can be found in sustainable building strategies such as those outlined in CALGreen and the California Green Building Standards Code. California developed and adopted this first-in-the-nation mandatory green building code in an effort to lessen the impact buildings have on the environment. The value of incorporating such standards is that airports can reduce their overall energy costs and improve their environmental footprint by operating in a more sustainable manner. Large hub commercial airports, such as San Francisco International, have won awards for their sustainable design efforts. Likewise on a smaller scale, Fresno Yosemite International Airport continues to be a notable example of how to incorporate solar energy in a safe and efficient manner to offset energy costs.

In addition to sustainable buildings, early planning of environmental safeguards continues as the Division maintains its role in CEQA evaluations of projects that may affect safe aviation. Given that the CEQA statues and guidelines are updated annually to keep pace with changes in law and technology, the Division needs to appropriately recommend improvements to its CEQA review process to keep pace with these changes. Likewise, as sustainable energy technologies emerge, they will need to be evaluated for their affect on safe aviation. The Division is expanding its involvement in sustainable energy and environmental solutions to help keep California aviation on pace with statutory mandates and industry trends.

EDUCATION AND RESEARCH (ER)

Policies

ER-1: Develop informational programs to increase the understanding of current air transportation issues including, planning, aviation safety, airport noise, airport development, and airport management. PUC §21002(i)

ER-2: Sponsor or cosponsor aviation education and information seminars which meet the needs of pilots and other members of the aviation industry for current information on safety, planning, and airport development. PUC §21002(j)

ER-3: Develop and implement a program or programs to assist in the training and development of the staff of airport land use commissions. PUC §21674.5(a)

Objectives

ERo-1: Participate in education and outreach opportunities that promote the benefits of aviation and aviation safety.
ERo-2: Provide training to ALUCs in airport land use compatibility plan review and processing pursuant to the Aeronautics Act.
ERo-3: Participate in research and development endeavors that advance California aviation.
ERo-4: Maintain a national presence as a leader in airport and aviation system planning.

Implementation

- All Offices
  - ERi-1: Participate in conferences, workshops, and related events with an emphasis on speaking and/or delivering content to promote safe and sustainable aviation.
- Office of Aviation Planning
  - ERi-2: Develop a 3-day Aviation Planning Academy for Caltrans transportation planners and external partners on various aspects of aviation planning consistent with policies and objectives outlined in the PE.
  - ERi-3: Update ALUC training curriculum consistent with current PUC, Division and land use programs.
  - ERi-4: Participate in Caltrans, ACRP, American Planning Association training, and similar association outreach and research activities to advance California aviation.
  - ERi-5: Participate in Transportation Research Board (TRB) aviation system planning symposiums.
  - ERi-6: Participate in aviation-related noise and air quality symposiums.

Performance

- All Offices
  - ERp-1: All Division personnel should participate in some form of annual educational endeavor that improves the system of aviation in California.
- Office of Aviation Planning
  - ERp-2: The Division shall host an annual Aviation Planning Academy with a target audience of District-wide transportation planners and external partners.
  - ERp-3: Make aviation presentations at Caltrans' Transportation Planning Academy and Transportation Field Academy programs.

Discussion

In various parts of the Aeronautics Act the Division is mandated to deliver and participate in education programs that foster aviation in California. Although recent Caltrans budget and travel constraints have significantly scaled back program participation, the Division still considers this policy area a critical element of its core functions. Within this area the Division seeks to promote California aviation by focusing its efforts in three key areas: safety, research, and planning.

Safety

Keeping the public safe on and in the vicinity of airports is vital. While the FAA has complete authority over aircraft and flight safety, there are things the Division can do to promote a safe flying environment. Mentioned previously in the safety element, the Division's Office of Airports conducts FAA 5010 safety inspections of airports to ensure compliance with FAA safety standards. In support of this, the Division is capable of hosting workshops on the various components of a 5010 inspection to help airports be proactive in their selection of projects and activities that keep their facility safe and up to standard. Likewise, the Office of Technical Services, as well as the grants specialty program, could use a similar forum to present technical information, such as pavement management and airport grant funding, to support airport improvements. The sharing of current standards and technologies is important towards maintaining a high level of aviation safety.

Research

Aviation research, from both a technical and planning perspective, is very dynamic. Endeavors are occurring at a greater pace as global economies demand more and faster deliveries of high-value exports. Enriching aviation's capabilities, while concurrently enhancing safety, is continually moving forward. Division staff participates as subject matter experts on TRB, ACRP panels to promote flight and system planning improvements. Staff has been successful in getting ACRP topics approved for funding to study emerging energy technologies that could impact flight safety if located in the wrong place on or near airports. Aviation planning staff was successful in 2010 in having an ACRP synthesis project accepted. Titled *Investigating Safety Impacts of Energy Technologies on Airports and Aviation* (project 11-03/Topic S10-06) the project conducted an extensive literature review on energy technologies that could impact aviation if not well planned near airports.

The Division is also engaged in a Caltrans research effort to determine the limits and viability of linking key portions of Caltrans' Roadside Weather Information System with the federal Aviation Automated Weather Observing System technologies to determine if both highway and aviation uses can share some resources to provide even greater 24/7 weather data vital for safety and operations within both programs. Staff is also working with Caltrans' Division of Research and Innovation to actively research ways to use roadway and aviation weather data to close gaps in statewide information coverage. This research will not only help the State during times of emergencies and recovery, but also help the rural parts of the State that have limited weather and other critical data coverage.

Similarly, the Division is actively participating in a research effort to help discern aviations role in disaster recovery efforts in the San Francisco bay area. In the days and months following a disaster, aviation will be heavily called upon to assist in recovery efforts. Intended for future statewide deployment, the lessons learned is already proving the need for capable system of GA airports to assist in recovery planning. Finally, the Division is actively monitoring the progress the FAA is making in rolling out Next Generation Air Transportation System (NextGen), an airspace safety and capacity modernization program. While this is a wholly FAA funded

program outside the purview of the Division, the Division recognizes that modernizing airspace capacity is critical to increasing the efficiency and marketability of commercial service airports in California. The Division supports the deployment of NextGen hardware at California airports and is willing to partner with the FAA where possible to expedite greater deployment within California. The above are a few examples of the Division's commitment to participate in research that will have a direct benefit to the people of California.

Planning

The Division's mandates in aviation education and advocacy can achieved when performed together given they are really two sides of the same coin. For example, the Office of Aviation Planning is charged with conducting ALUC training so they understand their roles as outlined in the Aeronautics Act. This is done using the Handbook as one of the teaching tools. Since the role of an ALUC is to advise a local agency on land use compatibility issues that would affect an airport, by protecting the greater airport environment they advocate for the benefits and safety of aviation. Although their required participation is only advisory, ALUC's can be an airports front line educator on the value of aviation and how to safely incorporate an airport into the community.

Other ways the Division promotes aviation education is by speaking at workshops and conferences on various technical and planning topics, and as university guest lecturers. Although the Division is invited to speak at more conferences than Caltrans travel restrictions currently permit, it judiciously selects key conferences to deliver its message of promoting a safe, environmentally and economically sustainable system of airports. The Division also delivers its message annually at Caltrans' Transportation Planning Academy and Transportation Field Academy programs.

Implementing various strategies that promote and educate the general public on the value of aviation needs to be a higher priority, if the Division is to be one of the State's active stewards of aviation. Given limited travel and training funds, there are actions that can be taken at minimal to no cost. For example, around the State numerous professional organizations host monthly lunch programs, many of whom actively pursue topics and speakers. The Division should be speaking at more of these professional meetings. Also, these same groups typically host annual conferences at which the Division should be making presentations. Conference fees are typically waived for speakers.

The Division's education role also extends to training external and internal partners in various aviation-related topics. Externally, the Aeronautics Act requires the Division to train ALUCs in their roles, responsibilities and limitations as an airport land use advisory body. This endeavor needs to be rekindled with dedicated funding and support. Likewise, many city and county staff planners have little to no formal training in aviation or airport planning. These planners have expressed a desire for the Division to provide some basic training to help them partner with their ALUCs and airport advisory committees better. Internally, Caltrans does not staff the 12 district offices with aviation representatives; Division staff is only located in Sacramento in Caltrans' Headquarters building. Transportation planners within Caltrans have expressed an interest statewide to learn more about how to support the aeronautics program.

Appendices

APPENDIX 1
Glossary

Accident Potential Zone (APZ): Areas based on historical accident and operations data throughout the military and the application of margins of safety within those areas if an accident were to occur.

Air Carriers: The commercial system of air transportation, consisting of the certificated air carriers, air taxis (including commuters), supplemental air carriers, commercial operators of large aircraft, and air travel clubs.

Air Installation Compatible Use Zone (AICUZ): A land use compatibility plan prepared by the U.S. Department of Defense for military airfields. AICUZ plans serve as recommendations to local government bodies having jurisdiction over land uses surrounding these facilities.

Aircraft Operation: The airborne movement of aircraft at an airport or about an en route fix or at other point where counts can be made. There are two types of operations: local and itinerant. An operation is counted for each landing and each departure, such that a touch-and-go flight is counted as two operations.

Airport: An area of land or water that is used or intended to be used for the landing and taking off of aircraft, and includes its buildings and facilities, if any.

Airport Compatibility Zones: Areas on and near an airport in which land use and development restrictions are established to protect the safety of the public and include the Runway Protection Zone, Inner Approach/Departure Zone, Inner Turning Zone, Outer Approach/Departure Zone, Sideline Zone, and the Traffic Pattern Zone.

Airport Influence Area: The area in which current or future airport-related noise, overflight, safety, and/or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses. In most circumstances, the airport influence area is designated by the ALUC as its *planning area boundary* for the airport and the two terms can be considered synonymous.

Airport Land Use Commission (ALUC): A commission authorized under the provisions of California Public Utilities Code, Sections 21670 et seq. and established (in any county within which a public-use airport is located) for the purpose of promoting compatibility between airports and the land uses surrounding them.

Airport Layout Plan (ALP): A scaled drawing of existing and proposed airport facilities including airport property lines and the information required to demonstrate conformance with applicable FAA regulations. A current FAA-approved ALP is required for NPIAS airports that receive Federal assistance. ALPs remain current for a five-year period or until major changes are made or are planned to be made at the airport. The ALP is one of the components of an Airport Master Plan (AMP).

Airport Land Use Compatibility Plan (ALUCP): A planning document that contains policies for promoting safety and compatibility between public use airports and the communities that surround them. The ALUCP is the foundation of the airport land use compatibility planning process. The ALUCP is adopted by the ALUC (or the body acting in that capacity per PUC Section 21670.1), and is based on a current Airport Master Plan (AMP) or Airport Layout Plan (ALP).

Airport Master Plan (AMP): An airport master plan is an airport-sponsored, comprehensive planning study that usually describes existing conditions as well as interim and long-term development plans for

the airport that will enable it to meet future aviation demand. An AMP contains an FAA-approved activity forecast and an Airport Layout Plan (ALP).

Aviation-Related Use: Any facility or activity directly associated with the air transportation of persons or cargo or the operation, storage, or maintenance of aircraft at an airport or heliport. Such uses specifically include runways, taxiways, and their associated protected areas defined by the FAA, together with aircraft aprons, hangars, fixed base operations facilities, terminal buildings, etc.

Avigation Easement: A type of easement which typically conveys the following rights:

- A right-of-way for free and unobstructed passage of aircraft through the airspace over the property at any altitude above a surface specified in the easement (usually set in accordance with FAR Part 77 criteria).
- A right to subject the property to noise, vibrations, fumes, dust, and fuel particle emissions associated with normal airport activity.
- A right to prohibit the erection or growth of any structure, tree, or other object that would enter the acquired airspace.
- A right-of-entry onto the property, with proper advance notice, for the purpose of removing, marking, or lighting any structure or other object that enters the acquired airspace.
- A right to prohibit electrical interference, glare, misleading lights, visual impairments, and other hazards to aircraft flight from being created on the property.

Based Aircraft: Aircraft stationed at an airport on a long-term basis.

California Environmental Quality Act (CEQA): Statutes adopted by the Legislature for the purpose of maintaining a quality environment for the people of the state now and in the future. The Act establishes a process for state and local agency review of projects, as defined in the implementing guidelines, which may adversely affect the environment.

Commercial Activities: Airport-related activities which may offer a facility, service or commodity for sale, hire or profit. Examples of commodities for sale are: food, lodging, entertainment, real estate, petroleum products, parts and equipment. Examples of services are: flight training, charter flights, maintenance, aircraft storage, and tie-down.

Commercial Operator: A person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier.

Commercial Service Airports: Public airports receiving scheduled passenger service and having 2,500 or more enplaned passengers per year. Commercial service airports are further broken down into Primary and Non-Primary Airports.

Crime Prevention Through Environmental Design (CPTED): A multi-disciplinary approach to deterring criminal behavior through environmental [urban] design. CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts.

Federal Aviation Administration (FAA): The U.S. government agency which is responsible for ensuring the safe and efficient use of the nation's airports and airspace.

Federal Aviation Regulations (FAR): Regulations formally issued by the FAA to regulate air commerce.

FAR Part 77: The part of the Federal Aviation Regulations which deals with objects affecting navigable airspace.

FAR Part 150 Study: A study that determines the amount of noise impact an airport generates from its operations with the purpose of reducing noise impacts on existing incompatible land use and to prevent the introduction of new incompatible land uses in the areas impacted by aircraft noise.

Fixed Base Operator (FBO): A business which operates at an airport and provides aircraft services to the general public including, but not limited to, sale of fuel and oil; aircraft sales, rental, maintenance, and repair; parking and tie-down or storage of aircraft; flight training; air taxi/charter operations; and specialty services, such as instrument and avionics maintenance, painting, overhaul, aerial application, aerial photography, aerial hoists, or pipeline patrol.

Fleet Mix: The composition of aircraft that operate at a particular airport.

Flight Tracks: Routes aircraft routinely use when arriving and departing from an airport.

Forecasts: A projection of the amount and type of aircraft operations at an airport.

General Aviation: That portion of civil aviation which encompasses all facets of aviation except air carriers.

General Aviation Airport: Airports that do not receive scheduled commercial service, or do not meet the criteria for classification as a commercial service airport. General aviation airports have at least ten locally based aircraft, are at least 20 miles from the nearest NPIAS airports

General Plan: A statement of policies, including text and diagrams, setting forth objectives, principles, standards, and plan proposals, for the future physical development of a city or county.

Global Positioning System (GPS): A navigational system which utilizes a network of satellites to determine a positional fix almost anywhere on or above the earth. Developed and operated by the U.S. Department of Defense, GPS has been made available to the civilian sector for surface, marine, and aerial navigational use. For aviation purposes, the current form of GPS guidance provides en route aerial navigation and selected types of non-precision instrument approaches. Eventual application of GPS as the principal system of navigational guidance throughout the world is anticipated.

Helipad: A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters.

Heliport: A facility used for operating, basing, housing, and maintaining helicopters.

Infill: Development which takes place on vacant property largely surrounded by existing development, especially development which is similar in character.

Intercounty Airport: An airport where a county line bisects a runway or any various safety compatibility zones.

Land Use Density: Land use density is a measure of the concentration of residential development in a given area. It is typically expressed as the number of dwelling units per acre using a net acreage calculation.

Land Use Intensity: Land Use Intensity is a measure of the concentration of nonresidential development in a given area. Intensity can be expressed as number of people per acre. Using a net acreage calculation is encouraged.

Land Use Map: A map showing land-use classifications as well as other important surface features such as roads, rail lines, waterways, and jurisdictional boundaries. Land Use Maps may show either existing or proposed land uses.

Large Airplane: An airplane of more than 12,500 pounds maximum certificated takeoff weight.

Next Generation Air Transportation System (NextGen): NextGen is an umbrella term for the ongoing transformation of the National Airspace System (NAS). At its most basic level, NextGen represents an evolution from a ground-based system of air traffic control to a satellite-based system of air traffic management. This evolution is vital to meeting future demand, and to avoiding gridlock in the sky and at the nation's airports.

Obstruction: Any object of natural growth, terrain, or permanent or temporary construction or alteration, including equipment or materials used therein, the height of which exceeds the standards established in Subpart C of Federal Aviation Regulations Part 77, *Objects Affecting Navigable Airspace*.

Runway Capacity: The number of landings and take-offs, or a combination of both, that can be accommodated without undue delays to aircraft with the minimal approach spacing published for IFR (instrument flight rules) and VFR (visual flight rules).

Runway Protection Zone (RPZ): An area (formerly called a *clear zone*) off the end of a runway used to enhance the protection of people and property on the ground.

Runway Safety Area (RSA): The area, under normal (dry) conditions, that supports airplanes without causing structural damage to the airplane or injury to their occupants in the event a plane undershoots, overruns, or veers off the runway. Also provides greater accessibility for firefighting and rescue equipment during such incidents.

Safety Zone: For the purpose of airport land use planning, an area near an airport in which land use restrictions are established to protect the safety of the public from potential aircraft accidents.

Sideline Zone: A rectangular area in close proximity and parallel to the runway.

Site Approval Permit: A written approval issued by the California Department of Transportation authorizing construction of an airport in accordance with approved plans, specifications, and conditions. Both public use and special-use airports require a site approval permit.

Small Airplane: An airplane of 12,500 pounds or less maximum certificated takeoff weight.

Zoning: A police power measure, enacted primarily by units of local government, in which the community is divided into districts or zones within which permitted and special uses are established, as are regulations governing lot size, building bulk, placement, and other development standards. Requirements vary from district to district, but they must be uniform within districts. A zoning ordinance consists of two parts: the text and a map.

APPENDIX 2
Acknowledgements and Credits

Acknowledgements

CALIFORNIA TRANSPORTATION COMMISSION

Lucetta Dunn, Commissioner
Joe Tavaglione, Commissioner

Technical Advisory Committee on Aeronautics (TACA)

Chris Kunze, TACA Chairman, Staff Advisor, Long Beach Municipal Airport
William T. Weil, Jr., TACA Vice-Chairman, Mojave Air and Spaceport.
Michael Armstrong, Program Manager, Aviation Planning, Southern California Association of Governments
Daniel Burkhart, Director of Regional Programs, National Business Aviation Association
Harry A. Krug, Association of California Airports, Airport Manager, Colusa County Airport
Bruce D. D. MacRae, Director of Public Affairs, West Region, United Parcel Service
Mark F. Mispagel, Attorney/Consultant, Law Offices of Mark F. Mispagel
John Pfeifer, Aircraft Owners and Pilots Association (AOPA), California Regional Representative
Barry Rondinella, Director for Airport Operations, Los Angeles International Airport.
Alexander Waters, Vice President of Business Development, KaiserAir, Inc.

CTC Staff
Bimla Rhinehart, Executive Director
Robert Chung, Deputy Director

Credits

The following individuals were contributors to this report:

CALIFORNIA DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS

Gary Cathey, Division Chief
Terry L. Barrie, Chief, Office of Aviation Planning
Jeff Brown, Chief, Office of Airports
Lee Provost, Chief, Office of Technical Services
Derek Kantar, Associate Aviation System Planner and Element Project Manager
Colette Armao, Associate Aviation System Planner
Terry Farris, Associate Aviation Land Use Planner
Kevin Ryan, Associate Aviation System Planner

DIVISION OF TRANSPORTATION PLANNING

Pam Korte, Supervising Planner, Office of State Planning
Chris Ratekin, Sr. Transportation Planner, Office of Community Planning
Terry Parker, Sr. Transportation Planner, Office of Community Planning
Laurie Waters, Associate Transportation Planner, Office of State Planning