California Aviation System Plan
Policy Element

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CALIFORNIA AVIATION SYSTEM PLAN
2016 POLICY ELEMENT

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Table of Contents

	Page
Section 1 – Guiding Principles	
Introduction to the Policy Element	1-1
Update of the Policy Element	1-1
Overview of the Division of Aeronautics	1-2
Regulatory and Policy Hierarchy	1-4
Operational Structure	1-10
Section 2 – Integrated Transportation Planning	
Caltrans Planning	2-1
Regional Planning Cooperation	2-8
State Planning Cooperation	2-9
Federal Cooperation	2-11
Section 3 – Policies, Goals, Implementation and Performance	
Introduction	3-1
Stewardship and Preservation	3-3
Safety	3-7
Mobility	3-11
Airport Integration in Land Use Planning	3-13
Economics	3-17
Environment	3-19
Education and Research	3-23
List of Tables	
Table 1-1: NPIAS and CASP Airport Functional Classification Categories and Subcategories	1-13
Appendices	
Appendix 1: Glossary	
Appendix 2: Acknowledgements and Credits	

Section 1
Guiding Principles

Introduction to the Policy Element

The California Aviation System Plan (CASP) Policy Element (PE) is the basis for implementing the State Aeronautics Act and identifying the Division of Aeronautics (Division) role in the California Department of Transportation (Caltrans) mission, vision, and values for a multimodal, interregional, transportation system. The PE is updated on approximately a five-year cycle with the last update published in October 2011.

As well as outlining the functions and priorities of the Division, the PE also explains the cooperative relationship between federal and State programs that may 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 help guide and identify the Division's major priorities and practices.

Update of the Policy Element

This update of the PE revisits the manner in which the policies and programs within the Division have been communicated to the public. After reviewing PEs of the last 26 years, it was determined that aviation and transportation professionals could benefit from a reiteration of the Division's core responsibilities that are enumerated in California Public Utilities Code (PUC) §21001 et seq., the State Aeronautics Act.

In addition to achieving its statutory obligations, the Division also implements Caltrans directives as required. Thus, a secondary objective of the PE update is to ensure that limited resources are first guided towards fulfilling statutory requirements while concurrently addressing Caltrans mission, vision, goals, and values. Providing effective policies and programs that convey who the Division is, what the Division does (and in some cases what it does not do), as well as why the Division does it, are of continuing importance in this update.

The PE is organized into three 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 how the Division and its key partners do or do not participate in local airport operations. 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: Integrated Transportation Planning
  This section explains how the Division is integrated in other planning programs within Caltrans as well as other State departments. It also provides an overview of some of its involvement with some federal agencies.

- Section 3: 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 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.

Overview of the Division of Aeronautics

The legislation that created the Division was the State Aeronautics Commission Act of 1947. The title of the legislation was later amended by statute to read the State Aeronautics Act (Aeronautics Act) in 1961. As a result of this legislation, 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 responsibilities be referred to Headquarters for administrative and technical support.

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 Caltrans' role in administering the Division, and explains the role of the California Transportation Commission (CTC). Chapter three includes many of the safety considerations from Federal Aviation Administration (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 Airport Land Use Commissions (ALUC). 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 commits the Division to perform, it does not extend authority to Caltrans or the 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 an advisor to Caltrans, ALUCs, and airport sponsors for ways to better include safe aviation into the fabric of California communities and multimodal transportation planning.

A Brief History of the Division of Aeronautics

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.

1947 Advertisement for a Cessna 190

From its inception through the mid-1950s, support for the developing Department of Aeronautics fluctuated with dramatic changes in priorities, staffing, and funding. Not until the early 1960s did the value of aviation see a resurgence with the Legislature through a slow increase in responsibly and funding emphasizing aviation safety and airport improvements. Operational funding for the State's new aviation Department was eventually secured by the Legislature in 1965 through General Aviation (GA) fuel excise tax revenues removing the program from the General Fund. The practice of funding the program from aviation fuel tax revenues rather than a State department's budget continues today.

With an effective date of July 1, 1973, Caltrans) was created and included various modes of transportation. Thus, the Department of Aeronautics was abolished and became the Division of Aeronautics within the newly formed Caltrans. Caltrans and the Division continue to work towards an improved statewide aviation system that will meet the multimodal transportation needs of California through the 21st century.

California Transportation Commission

The California Transportation Commission (Commission) 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 Commission 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 Commission was codified in the PUC.

The Commission is responsible for the programming and allocation of funds for the construction of highway, passenger rail, transit, and aviation improvements throughout California. The Commission also advises and assists the Secretary of the California State Transportation Agency and the Legislature in formulating and evaluating State policies and plans for California's transportation programs. In addition, the Commission is an active participant in the initiation and development of State and federal legislation that seeks to secure financial stability for the State's transportation needs.

The Commission's role with the Division includes overseeing two of the Caltrans airport grant programs (Acquisition and Development (A&D) and Airport Improvement Program Matching Grant). The Commission itself reviews the list of requested projects from airport sponsors identified in the Division's Airport Capital Improvements Program (CIP). From here, the Commission approves the expenditure of matching grant funds towards projects identified in the CIP as funds allow. The Commission also reviews and approves the California Aviation System Plan prepared by the Division.

California State Transportation Agency

The California State Transportation Agency (CalSTA) was created July 1, 2013, by a Governor's initiative to streamline State agency functions and affect more efficient, responsive, accountable, and cost effective programs for all Californians. CalSTA became the umbrella agency for the departments, boards, and commissions involved in some aspect of transportation including: Board of Pilot Commissioners, California Highway Patrol, California Transportation Commission, Department of Transportation, Department of Motor Vehicles, the High Speed Rail Authority, New Motor Vehicle Board, and Office of Traffic Safety.

CalSTA's highest priorities regarding Caltrans include creating a sustainable multimodal transportation system that reduces individual vehicle trips and total miles traveled. It does this by examining convenient alternative transportation options such as better access and connectivity to transit, rail, bike, walking, and on demand services such as ride and bike sharing, and encouraging transit oriented development (TOD). CalSTA also created the California Freight Advisory Committee, a consortium of federal and State agencies, and public sector transportation and logistics companies tasked with creating the zero emissions freight system called for in the Governor's Executive Order B 3215. The Division works with Caltrans programs and CalSTA to promote and integrate aviation into current and future transportation planning initiatives where appropriate and within the State's authority to implement these activities.

Regulatory and Policy Hierarchy

The Division is first guided by federal statutes and directives, then State statutes, 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. For federally obligated airports, the engineering of an airport's airside assets, i.e. runways, taxiways, and safety areas are directed by FAA regulations or advisory circulars. With few exceptions, the Division uses these flying and airside regulations as State standards. The State 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 Caltrans directives.

The State Aeronautics Act PUC §21001 et seq provides the State with additional regulatory guidance to further protect and advance the public interest in aeronautics and aeronautical progress (PUC §21002). It explains those portions of airport safety and airport land use compatibility planning that have been extended to the Division. It also identifies the authority by which Caltrans may adopt, administer, and enforce rules and regulations for the administration of the State Aeronautics Act (PUC §21204). Moreover, it extends authority to Caltrans to "recommend necessary legislation to advance the interest of the state in aeronautics." (PUC §21242(a)).

California Aviation System Plan

The CASP is the vehicle by which continuous aviation system planning is conducted. The FAA first introduced the concept of aviation and/or airport system plans in the late 1970s in Advisory Circular 150/5070. In 1987, Caltrans began to include the concepts of system planning by preparing independent reports that were in keeping with FAA's planning themes. In 1989, PUC §21701-21705 was added to the State Aeronautics Act to include the FAA's approach to system planning. Today, we call that approach the California Aviation System Plan.

The challenge for the CASP is that FAA-recommended system plans consider between 12 and 14 subheadings or topics. What was added to the PUC was only half of the recommended sections. Some of what was added to the PUC are topics that airports have no obligation to study, and therefore, create gaps in what the State is able to summarize. Regardless, the Division follows the intent of the PUC by summarizing the data it can primarily in two documents or elements, those being the PE and the General Aviation System Needs Assessment Element. These are updated regularly by the Division, with Commission review and approval. The need to amend the PUC to keep the CASP consistent with new FAA guidance and contemporary aviation practices is overdue.

The CASP is revised on approximately a five-year cycle, with the exception of the CIP, which is revised biennially. If deemed appropriate by the Division, and approved by the Commission, elements may be added or content modified to meet the intent of the FAA advisory circular that enables system planning.

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 multi-modal transportation system access studies. These studies need to include inter-and intra-modal connectivity to airports.
2. Airports do more for their communities than house aircraft. They are business hubs that connect communities in ways traditional surface transportation cannot.
3. Defining what constitutes compatible land uses around airports and incorporating them into land use and transportation system planning and modeling efforts is important.
4. 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.
5. 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.

Airport Land Use Commissions

It is often heard that ALUCs are the first line of defense to promote compatible land use development near airports 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 (PUC §21670(b) or its functional equivalent (PUC §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…" (PUC §21670(2)). They do this in two primary ways, by preparing an Airport Land Use Compatibility Plan (ALUCP) pursuant to PUC §21675(a) and by reviewing local agency general and specific plans for consistency with the ALUCP (PUC §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 State 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 potential incompatible land uses. Incompatible land uses around airports are considered the largest imminent and continuous threat to California's air transportation system of public-use airports. Despite good intentions, if an ALUC does not fully understand land use planning and development processes, approved projects today can hinder long-term sustainability and 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. The Handbook can be found on the Division's homepage at http://www.dot.ca.gov/aeronaut/index.html Additionally, the Division conducts periodic training for ALUC staff as required in the State Aeronautics Act (PUC §21674.5). A detailed discussion on the roles and responsibilities of ALUCs can be found in this resource.

California Airport Land Use Planning Handbook

The California Airport Land Use Planning Handbook (Handbook) is published by the California Department of Transportation Division of Aeronautics. The most recent version was published in 2011. Its purpose is to support and amplify the article of the State Aeronautics Act (PUC §21670 et seq.), which establishes statewide requirements for the conduct of airport land use compatibility planning. The Handbook provides compatibility guidance to ALUCs, their staff and consultants, the counties and cities having jurisdiction over airport area land uses, and airport proprietors.

The main purpose of the Handbook is to provide guidance for the development of ALUCPs. The current Handbook is composed of 6 chapters and 13 appendices. The Handbook explains everything from the formation and function of ALUCs to detailed information on noise and safety around airports, and how to prepare an ALUCP to avoid incompatible land uses around airports. The Handbook is also required to be used as a technical resource when preparing an environmental impact report under the California Environmental Quality Act (CEQA), for any project situated within an airport influence area as defined in an ALUCP, or within two nautical miles of an airport's runway if an ALUCP has not been adopted. The Handbook can updated as

needed, but typically on a ten-year cycle. Updates will account for new legislation, policy, and other current factors that affect contemporary land use practices.

Airport Land Use Compatibility Plans

An ALUCP is a very powerful safety instrument that protects the public and those who use and work or live around airports in California. ALUCPs are required to contain land use measures that minimize the public's exposure to safety hazards within two-miles around public use airports. Protecting people and property on the ground from the potential consequences of near-airport aircraft accidents is a fundamental land use compatibility-planning objective.

The Handbook recommends a comprehensive review and update of an ALUCP at least every five years. Of the 244 public-use airports in California, currently 75 percent have ALUCPs over five years old. Approximately 60 percent of the ALUCPs are over 10 years old, twice the recommended amount of time. Additionally, there are many ALUCPs that are over 20 years old, and some that are even older than 30 years, still in use today. Consistent funding for ALUCPs is vital for the protection of the California air transportation system and those communities surrounding the airports. Currently the Division sets aside 25 percent from its A&D Grant Program to help fund the preparation of ALUCPs.

An ALUCP is not part of a city's or county's General Plan. It is a separate document statutorily required by the PUC §21675(a). Additionally, the importance of the ALUCP is shown in Government Code, §65302.3 (a), which states that a county's or city's general plan, as well as any applicable specific plans, "shall be consistent" with an ALUCP and that every affected county or city must amend its general and specific plans as necessary to keep them consistent with the ALUCP. In short, ALUCPs carry more land use weight than a General Plan. Further, ALUCPs shall contain policies that require major land use actions be reviewed for consistency with the ALUCP. ALUCPs contain the following essential elements:

- Establish policies to minimize noise impacts on new land uses. The purpose is to discourage the development of land use encroachment within the influence area of an airport. In the past, new development would encroach airports where noise would be high and then complaints would arise causing public agencies to expend significant resources on retrofitting buildings that were built with substandard sound insulation.
- Establish procedures to alert persons or businesses that plan to relocate near an airport of aircraft overflights. This is primarily carried out through real estate disclosure. The Division recommends that local governments adopt airport overlay districts so planners and officials can inform the public of overflight conditions associated with an airport.
- Establish safety zones and policies to minimize hazardous conditions for new land uses. This purpose is to discourage the encroachment of land uses within the proximity of an airport, generally a two-mile radius around the airport. Research, studies, and aviation expert experience have determined that certain areas around airports are more hazardous than others. While the chance of an aircraft injuring someone on the ground is historically low, an aircraft accident is a high consequence event. To protect people and property on the ground from the risks of near-airport aircraft accidents, restrictions on land use is essential and necessary. It is best for people and the airport that new land uses are only those that are compatible in safety zones.

- Establish policies that minimize obstructions to navigable airspace. It is vital for pilots to have clear flight paths. This protects people by minimizing hazard while in flight but it is also vital for ensuring an airport can perform its vital economic role.

Airport land use compatibility planning is a coordinated effort between Caltrans, an ALUC and local agencies. The State Aeronautics Act, PUC §21674.7(a), requires that the Division prepare the Handbook as a guide for ALUCs in performing airport land use compatibility planning. The primary responsibility for airport land use compatibility planning rests with each county in the State that owns or operates a public-use airport, through their ALUC or equivalent body. ALUCs discussed in the previous section, prepare an ALUCP, which is the guiding policy document to ensure the intent and purpose of the State Legislature. ALUCPs are regional plans that involve local agencies, cities in a county, and the county. Involvement of affected agencies is important because airports have influence in a vicinity significantly beyond the limits of the city or county in which they are located. The safety and noise elements of an ALUCP are important but protecting the economic vitality of an airport and the jobs it supports and creates is similarly important. Local agencies, which include school and special districts, can proceed with a development or plan that is inconsistent with an ALUCP policy or policies. To do so, the local agencies must prepare an overrule that involves holding a public hearing and adopting specific findings to justify its actions.

Environmental Review Program

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 CEQA. The CEQA statutes referenced in Public Resources Code (PRC) §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 comments to the Lead Agency for consideration 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 PRC §15381. The Division has a dedicated environmental planner staffed to assist with CEQA reviews.

Noise Mitigation Program

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. Per PUC §21669-21669.6, the Division exercises its regulatory role in assuring the accuracy and standardization in noise monitoring programs and balancing the needs of the "noise problem" airports and the general public via the noise variance process. Examples of some proactive steps taken to prevent new noise problems include working with 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.

California Aid to Airports Program and Airport Loan Program

The Division provides aviation funding to public entities for safety, maintenance, and capital improvements at airports through the California Aid to Airports Program (CAAP) and the Airport Loan Program (ALP).

The CAAP consists of three grant programs:

1. Annual Credit Grants provide a $10,000 per year entitlement to publicly-owned, public-use General Aviation airports as reimbursement for eligible expenditures.

2. Airport Improvement Program (AIP) five percent Matching Grants assist General Aviation (GA) and Reliever airports in meeting the local match for federal AIP grants. The AIP Matching Grant program covers up to five percent of the federal AIP grant amount. Funding is subject to allocation by the Commission.

3. A&D Grants are available for eligible airports subject to programming and allocation by the Commission. A&D grants fund airport improvement projects as well as ALUCP Land Use Compatibility Plans. A&D grants cover 90 percent of project costs and require a 10 percent local match. A&D programmed projects constitute the Aeronautics Program.

In addition, the California Airport Loan Program provides discretionary State loans for construction and land acquisition projects to eligible airports to benefit general aviation activities at airports.

Legislative Affairs

Throughout the year, various aviation-related proposals are circulated through the State Legislature. The breadth of these proposals can range from Senate and Assembly Bills to trailer bills and Committee Resolutions. Caltrans Division of Legislative Affairs is the single point of contact for the manner in which Caltrans reviews, responds, and interacts with persons and activities in the Legislature. Through this guidance, the Division of Legislative Affairs requests the Division to analyze bills or related actions to which the Division responds based on its knowledge of the issue.

Professional Associations

The Division participates with various aviation associations to the extent the activity advances California aviation. Such associations include, but are not limited to, National Association of State Aviation Officials, Aircraft Owners and Pilots Association, California Pilots Association, Association of California Airports, California Airports Council, Southwest Chapter of the American Association of Airport Executives, Airport Cooperative Research Program, and others. All staff within the Division are encouraged to participate in these and similar professional organizations. To the extent travel budgets allow, staff are encouraged to attend training and workshops that advance California aviation, support the responsibilities of Caltrans, and offer professional development. However, staff is generally restricted from participating in aviation activities that do not correspond to duties and functions assigned to Caltrans in an official capacity.

Operational Structure

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

The Office of Aviation Planning

The Office of Aviation Planning (OAP) is comprised of eight transportation planners, including the office chief. They are subdivided into four aviation system planners and three land use planners. The OAP develops the CASP to assess current and future aviation needs and resulting implementation actions. OAP staff coordinates within Caltrans programs on intermodal planning and regional aviation system planning projects, such as the California Transportation Plan (CTP), and participates in development of federal planning and State aviation policies. It also reviews and comments on Regional Transportation Plans and Overall Work Programs and facilitates resolution of air quality issues affecting airports and airport users. It provides liaison duties with Caltrans 12 districts, the Division of Research Innovation and Systems Information, and other agencies concerning aviation-related research, develops research concepts and participates on Airport Cooperative Research Program (ACRP) panels, participates on national symposiums, and is a resource for aviation statistics. Division system planners respond to aviation related questions that involve the State.

Of particular importance, the three land use planners have the mandated responsibility to assist ALUCs with their PUC mandated responsibilities, including the formation of ALUCPs, that protect the public and those who live and work around airports in California. ALUCPs are required to contain land use measures that minimize the public's exposure to safety hazards within areas around public airports. The land use planners review and comment on each ALUCP once they are submitted. They also review proposed overrules, which is a process for local jurisdictions to move forward with a proposed project when the ALUC has determined the project to be incompatible with an airport.

The Office of Airports

The Office of Airports (OA) is comprised of an office chief and six Aviation Safety Officers, all of whom are instrument rated, commercial certificated pilots, and one planner. Primary responsibilities of the OA are performing public-use airport and hospital heliport safety and permit compliance inspections, reviewing and processing airport and heliport permits, and evaluating proposed new school, community college, and State buildings sites near airports. Under contract with the FAA, they also inspect specified airports and update Airport Master Records (FAA form 5010-1) for GA airports on behalf of the FAA. Additionally, they approve helicopter landing sites near schools, work with federal, State, and local agencies on facility, airspace, and other aviation matters, assist airport management in complying with federal and State aviation laws and regulations, and respond to aeronautics-related requests and questions from the public and other interested parties.

The Office of Technical Services and Programs

The Office of Technical Services and Programs (OTSP) oversees the CAAP and the ALP. The OTSP also administers California airport noise regulations, reviews CEQA documentation for CAAP projects, and provides State Agency CEQA comments for development around airports.

The OTSP develops the statewide CIP and administers the Aeronautics Program of proposed A&D projects. The CIP is a bi-annual report that serves as a ten-year, unconstrained fiscal estimate for airport development projects desired by California's publicly owned airports. The CIP contains an average of 2,000 airport development and ALUCP projects at a cost of approximately $3 billion. Some of the projects listed in the CIP are programmed and funded through the Aeronautics Program. The OTSP prepares the Aeronautics Program based on project priority and availability of funds. After project allocation by the Commission, the OTSP reviews and approves project Plans, Specifications and Estimate (PS&E) submittals, and oversees contract award, construction progress, and closeout.

In addition, the OTSP manages the FAA Airport Pavement Management System, a grant program that assesses pavement conditions for California airports. The OTSP also provides technical studies and mapping services in support of Division of Aeronautics activities.

Airport Functional Classifications Public Use Airports

To better distinguish airports for State planning purposes, in 1997, through an involved collaborative process with our regional partners, the Division created functional classifications to help distinguish various airport types based on the community they serve. Categories and sub-categories used to further classify airports in California are based on unique factors including: access the airport provides, population size or geographic location of region the airport serves, types of flying activities that occur, types and quantities of 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, and Metropolitan, as well as the FAA Service Level categories, such as Primary or Nonprimary, and then uses subcategories to further delineate major operational activities.

There are four general categories used by the FAA to classify airports in the 2015–2019 National Plan of Integrated Airport Systems (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, which can enhance the capacity of the commercial service airport. Depending on the population base served, these Reliever airports are identified as either Metropolitan (population size > 1,000,000) or Regional by the Division. In addition, if an airport enplanes more than 10,000 passengers annually, 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. Many of the Nonprimary airports in California have an increased level of GA operations than the larger Primary airports, but GA operations are present at all airports despite

the scheduled passenger service activity, since GA includes all aviation operations that are not scheduled passenger or military.

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 capacity constraints. Although Commercial and Reliever airports are not eligible for State AIP Matching Grants, the GA airports included in the NPIAS may be eligible to apply for State assistance to supplement part of their federal grant's local match.

The FAA recently conducted a study of GA airports, "General Aviation Airports: A National Asset," (known as the ASSET Report) based on existing activity and its role in the National Airspace System (NAS) categorized as National, Regional, Local, or Basic. Similarly, California has used a structure like that of the FAA study, but the State adds clarifiers that depict the size or type of the community it serves as either metropolitan or regional, as well as the types of aircraft operations conducted at each facility (recreational, agricultural, firefighting, medical emergency). Table 1-2 shows a comparison of categories used in California versus the FAA and is explained in greater detail following the table.

Economically, airports are used to conduct commerce and provide for recreational access, which can stabilize and improve the economies of the communities they serve. Nationally, airports are considered community assets that serve various emergency support functions such as medical flights, search and rescue, natural disaster relief, aerial firefighting, law enforcement, and community access to the NAS. Since the level and type of emergency operations conducted at airports are specific to their surrounding geographic locations and population densities, agencies classify airports in varying ways, and access to federal and State funding mechanisms is directly related to the various classifications. Although recreation and personal use air operations add to the local community's quality of life experience, the emergency response operations conducted at any of the 246 public-use airports in California only add to their community airport's value.

To access a graphical representation of aviation facilities in California, Caltrans maintains an ArcGIS mapping tool, as well as access to the aviation data online from the data library, which includes airport, airport boundary, airport runway, hospital heliport, automated weather observation system, as well as federal (military and non-military) airfield shapefiles. Caltrans aviation mapping tool created in ARC GIS can be found at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=32c3cbe24491427d872e2fec173a4b22. Additional Caltrans GIS Data can be found at: http://www.dot.ca.gov/hq/tsip/gis/datalibrary/index.php#Aviation

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

FAA NPIAS[1] Classifications	CASP Functional Classifications
GA and RELIEVER AIRPORTS	**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 Access
	Regional **Metropolitan** Subcategory is added if the Metropolitan Airport supports a special service. Business/Corporate Recreational Access Cargo
COMMERCIAL-PRIMARY and NONPRIMARY AIRPORTS	**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 Recreational Access Cargo

[1] 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 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. They may serve the same activities as Community airports but with a higher concentration of business and corporate aircraft activity. They may accommodate most business, multi-engine and jet aircraft, provide most services for pilots and aircraft including aviation fuel, and have a published instrument approach. They 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 Personal-Use (privately-owned, private-use) permitted airports are not publicly funded by the State. Military airports are also excluded due to limited State involvement. However, March Air Force Reserve Base (operated with March Inland Port Airport Authority as a Joint Use GA/military airfield) increases capacity by providing limited, nonmilitary air carrier, and air freight operations.

Beyond the aviation planning applications of the functional classifications, the highway side of Caltrans, as well as Metropolitan Planning Organizations and Regional Transportation Planning Agencies, can use these classifications to help integrate their community's airport type into regional transportation 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.

Funding

GA airports in California typically use federal, State, and local funds to support their infrastructure maintenance and development projects. In support of these projects are the various local funding mechanisms derived from county and city budgets. The State's three CAAP grant programs for airports, plus the Division's operating expenses, are funded from the Aeronautics Account and not the State Highway Account. The Aeronautics Account is funded from excise tax revenues that are collected on GA fuel at the rate of $.02 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, in descending order, including: the State's Annual Credit, AIP Matching Grants, followed by A&D Grants. The Aeronautics Account also receives minor revenues from other sources including interest earned on its ALP cash balance and sale of documents such as the State aeronautical chart.

On the federal side, the majority of GA airports (191)[1] meet the NPIAS eligibility requirements for funded grants under the FAA's AIP. Airports not included in the NPIAS are ineligible for FAA AIP funds. However, they may be eligible for State funded A&D grants, which require a minimum local match of ten percent of the estimated project cost by the airport sponsor.

To help the FAA understand the types of projects that might best serve the entire State aviation system of airports, the Division prepared a comprehensive GASNA Element in 2010 to focus this message. Given the importance of the project needs identified in the General Aviation System

[1] Federal Aviation Administration. *Report to Congress: National Plan of Integrated Airport Systems (NPIAS), 2015-2019.*

Needs Assessment (GASNA), core project/needs data is now updated semi-annually and posted on the Office of Aviation Planning's website. 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. The tables found in Appendix 4 of the GASNA provide 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 thereby be used by others to forecast needs from the Division's perspective. The FAA can view the Appendix 4 tables to see what the State considers important as it evaluates individual airport grant requests. This partnership helps remove doubt about what projects may be important to the State, and assists in the consideration of prioritizing limited funds towards system-wide improvements.

The State's ALP 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. Information regarding these grants and loans can be found in the California Code of Regulations Title 21, Division 2.5, Chapter 4, CAAP, which is available on the Division's website[2].

[2] http://www.dot.ca.gov/hq/planning/aeronaut/documents/grants_and_loans/CAAP_Regulations.pdf

Section 2
Integrated Transportation Planning

Caltrans Planning

Caltrans is composed of multiple programs ranging from administrative 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 programs within Caltrans are guided by the same vision.

Mission

Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

Vision

A performance-driven, transparent and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

Goals

Safety and Health: Provide a safe transportation system for workers and users, and promote health through active transportation and reduced pollution in communities.

Stewardship and Efficiency: Money counts. Responsibly manage California's transportation-related assets.

Sustainability, Livability and Economy: Make long-lasting, smart-mobility decisions that improve the environment, support a vibrant economy, and build communities, not sprawl.

System Performance: Utilize leadership, collaboration and strategic partnerships to develop an integrated transportation system that provides reliable and accessible mobility for travelers.

Organizational Excellence: Be a national leader in delivering quality service through excellent employee performance, public communications, and accountability.

Caltrans is responsible for more than the State Highway System (SHS). It helps coordinate the movement of pedestrians, bicycles, mass transit, 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 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.

In meeting Caltrans mission, the Division oversees the interrelated matters pertaining to land use, transportation, and airport operations to ensure safety of terrestrial persons and persons while in flight. Airport sustainability is two-fold. Airports are, or can be, economic engines or business hubs for communities or regions. Technology advancements and alternative fuels are making airports and aircraft more environmentally friendly and sustainable. Enhancing California's economy and livability is facilitated through the Division's aviation system planning and land use compatibility planning programs.

California has 244 public-use airports, 27 of which offer scheduled passenger service. The State does not own any of these airports, and as such, Caltrans has no authority over their operations or management. However, the State does have the responsibility for ensuring compliance with federal and State regulations that govern these airports. Operating airports safely is essential to maintaining the value of aviation. 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 vehicles moving passengers in and out of airports. The reality is that ground access can be accomplished through multiple modes. Better ground access can occur by implementing strategies that move persons between airport terminals to other uses on and off airport property. Quality ground access also involves goods flown around the world to and from California airports. This would not be possible without a capable ground access system complimented by appropriate land uses.

The California Transportation Plan 2040

Transportation is vital to California's economic prosperity and its continued future growth, yet the needs of an aging transportation system, increased and changing user demands, coupled with decreasing fuel tax revenues present major challenges to Caltrans that the CTP 2040 addresses. The CTP 2040 is mandated by State and federal law. It requires Caltrans to create and update its long range vision with a plan that describes Caltrans approach that address the State's current and future transportation needs. The emphasis of the CTP 2040 is sustainability, mobility, and choice for all users for all modes of transportation within California for all people, goods, services, and information moving within and through the State.

Senate Bill 391 (SB 391) requires Caltrans to update the CTP every five years while showing how the State will achieve the statewide greenhouse gas (GHG) reduction to meet the goals of Assembly Bill 32 (AB 32) and Executive Order S-3-05. It directs Caltrans to consider "the use of fuels; new vehicle technology; tailpipe emissions reductions and expansion of public transit, commuter rail, intercity rail, bicycling, and walking." It further requires the CTP to identify the statewide, integrated multimodal transportation system needed to achieve these results. In response, Caltrans developed the California Interregional Blueprint, which laid the foundation for the CTP 2040.

All modes of transportation are included in CTP 2040. CTP 2040 relied on extensive participation from internal and external stakeholders, partner agencies, tribal governments, and the public for its development. It addresses important emerging issues such as climate change, challenges and opportunities of new technologies, social justice, active transportation, aging infrastructure, and the need for innovative financing solutions to pay for it all. It also addresses the important relationship between transportation and land use compatibility. CTP 2040 includes recommendations for how Caltrans can facilitate GHG emissions, offering more modal options and better connectivity between the modes, more compact land use development patterns, and the use of data driven feedback to track Caltrans progress towards meeting its stated goals.
CTP 2040 presents three different scenarios and evaluates the performance and economic benefits of each option, recommendations, and next steps needed to achieve the stated goals.

Sustainability

Sustainability is one of the underlying principles of everything that Caltrans does. Caltrans defines sustainability from three perspectives: people, planet, and prosperity, the "triple bottom line." Each of the three Ps has a measurable goal and a benchmark date to meet those goals. Sustainability means considering the livability or quality of life, the environment, and economy

into everything that Caltrans does, from planning and programming to building and maintaining the State's multimodal transportation system.

This goal commits Caltrans to include sustainability measures into every project in Caltrans major funding programs to align with the State Transportation Improvement Program and the Interregional Transportation Improvement Program. Quality of life emphasizes mobility choice and livable public space. Preserving and protecting the environment means reducing the environmental impacts of transportation through GHG reductions, and protecting environmentally sensitive areas within the SHS corridors. Caltrans commitment to prosperity means that Caltrans will make transportation investments that improve the efficiency of the State's freight system and deliver a high rate of return for all transportation investments in the SHS.

Global Warming

The Global Warming Solutions Act of 2006 (AB 32) resulted in various legislation intended to steer the development of programs and guidelines that California will use to reduce GHG emissions. Two particular programs that guide efforts within Caltrans are Senate Bills 375 (SB 375) and 391 (SB 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 CTP.

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 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 carbon dioxide (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 United Nations 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 will need to address this issue from their operational perspective. Caltrans will need to consider

[2] Government Code section 65080(b)(2)
[3] California Air Resources Board, *Climate Science Update: Highlights from the 2009 Haagen-Smit Symposium*.
[4] Air Cargo World, December 17, 2010.

airport access issues that are within the State's purview. Caltrans' Climate Change Workgroup 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.

Sustainable Communities Strategy

The State's Sustainable Communities Strategy[5] (SCS) legislation is part of two larger directives, those being SB 375 and the federal government's Partnership for Sustainable Communities (PSC). The 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 the following six "livability" principles:

1. Provide more transportation choices
2. Promote equitable, affordable housing
3. Enhance economic competitiveness
4. Value sustainable communities
5. Coordinate and leverage investment
6. Support existing communities and neighborhoods

SB 375 seeks to implement AB 32 by requiring MPOs to incorporate SCSs into their RTPs. SB 375's 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 GHG.

California's 244 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 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 the 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

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

aviation smart growth plans to better integrate the benefits of aviation into the fabric of California communities.

Smart Mobility Framework

Smart Mobility 2010 is a transportation strategy 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 is 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.

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

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. 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.
- 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.

California Sustainable Freight Strategies

Freight underpins the California economy. In recognition of this, Caltrans and CalSTA created The California Freight Advisory Council (CFAC) with guidance from federal transportation legislation, *Moving Ahead for Progress in the 21st Century* (MAP-21). CFAC membership consists of a representative cross section of public and private freight stakeholders across all sectors of the freight industry including the trade organizations. Aviation has three representatives on the CFAC: the San Francisco International Airport, the Los Angeles International Airport, and the California Association of Airports. The CFAC meets quarterly, or as needed, and is tasked with creating the California Freight Mobility Plan (CFMP). The CFMP addresses the issues of economic competitiveness, safety and security, freight system infrastructure preservation, environmental stewardship, congestion relief, and innovative technology and practices. The CFMP includes a prioritized list of projects as required by MAP-21. Priority needs include high-use congested corridors, gateway, hubs, and last mile connectors to freight facilities.

In support of MAP-21, on December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes highway, motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, technology and research, and statistics programs. While the FAST Act is primarily an authorization of federal surface transportation programs, the law contains national multimodal policy and planning provisions and provides a dedicated source of federal dollars for freight projects including multimodal projects. Recognizing that air cargo relies on the efficiency of moving freight to and from airports via surface transportation, Caltrans has included the movement of freight through airports within its freight FAST Act Technical Working Group. Additionally, the current short-term authorization of federal aviation programs, including federal airport funding programs, will expire September 30, 2017. Congress is expected to consider a multi-year FAA reauthorization bill in 2017.

Ground Access

Ground Access involves several components including:

- Mobility–speed by which people and goods can access and egress an airport, including availability of multiple modes to reach an airport, such as transit or light-rail.
- Access–adequacy of the access infrastructure itself, including number of lanes, lane width, condition of the pavement, and proximity to desirable destinations.
- Terminal and Internal Circulation – adequacy of the layout, efficiency, and pedestrian access.
- Goods Movement–potential barriers to the access (e.g., height limitations for trucks), quality of the roadway (especially for heavier trucks), proximity to businesses, and mode options.

MPOs, RTPAs, and local governments can assist Caltrans and the Division in identifying and resolving airport ground access constraints. Constraints largely involve the movement of people and cargo. People related constraints involve congestion, inadequate bicycle and pedestrian access ways, poor internal and external circulation, inappropriate signage and traffic control, and substandard Americans with Disabilities Act access. Cargo and commerce related constraints involve congestion, inadequate freight, rail, and transit services, inadequate local roads and standards, conflicts between goods movement and passenger operations, and degrading airport access due to surrounding land use growth patterns and airport encroachment. Once the constraints are identified by these agencies then plans for improvements can be included in their RTP and the annual Overall Work Program (OWP). MPOs and RTPAs should list airport improvements with other capital improvement projects. Caltrans can then assist local agencies in improving and integrating the regional and local transportation system with airport ground access.

GA airports are valuable community assets. It is important to provide sufficient ground access and connectivity to GA airports because this can provide economic and public benefits to a local community and the State. Sufficient ground access and connectivity to GA airports provide better business opportunities, improve commerce, and are important for emergency services and law enforcement. They can also increase support to the State's vast tourism industry. Adventure tourism is exploding in California. The State's GA airports can take advantage of this industry if ground access and connectivity to them is improved, and integrated well with the state transportation system.

Similarly, by integrating and removing the barriers to quality multi-modal airport ground access into the state transportation system, California's transportation could become more efficient. Improved efficiency means providing reliable and regular rail and transit options for air passengers, and better connectivity between airports for commerce and for ground and water cargo carriers.

Related Caltrans Planning Offices and Programs

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 United Nations forum to discuss aviation's role and responsibility for CO_2 mitigation[6]. 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 the 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, in 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.

[6] Air Cargo World, December 17, 2010.

Regional Planning Cooperation

The 18 federally designated MPOs and some of the 26 State statutorily created RTPAs prepare Regional Transportation Plans in California. MPOs are now required to include Sustainable Community Strategies 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 CTP 2040. While RTPs are required to have an aviation section under certain conditions, the Division recommends all RTPs include aviation elements given their importance to multimodal travel in the State.

The State of California does not operate any of the State-permitted public-use airports. The Division's interaction with MPOs and RTPAs could best be described as consulting on airport and airport land use related issues for the airports within their jurisdiction. The Division, through each of twelve Caltrans districts, reviews the aviation sections of the two agencies transportation plans and the annual OWP. Any comments from the Division are rolled up into the district's comment letter. The Division may participate on MPO and RTPA advisory committees as needed upon request. The Division may also occasionally conduct studies and reports that assist these agencies with their aviation planning duties.

State Planning Cooperation

Governor's Office of Planning and Research

The Governor's Office of Planning and Research (OPR)[7] publishes several documents, available on it's 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 Statutes 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 (GPG). A General Plan is the local government's long-term blueprint for the community's vision of future growth. If airports are to be better incorporated into the fabric of California communities, an understanding of General Plan practices is essential. The GPG assists local planners in preparing General Plans and also assists local government officials and community members who may have less familiarity with planning theory, practice, and land use law. Currently the GPG is in the process of being updated. Once updated, the GPG will include resources, data, tools, and model policies to help cities and counties update their General Plans.

Planning, Zoning, and Development Laws 2012. This document is a nice companion to the GPG, as it is a compilation of California statutes pertaining to city and county planning and zoning activities including specifics pertaining to airport land use planning. Additionally, other aviation issues and topics are discussed. Of particular value to ALUCs is the Airport Approaches Zoning chapter that can help with the updating of ALUCPs and in performing plan reviews.

Community and Military Compatibility Planning, Supplement to the General Plan Guidelines. 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.

The California Advisory Handbook for Community and Military Compatibility Planning. Provides guidance to local governments, the military, and developers on how to address land use activities near military installations and activities.

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

California Department of Education

The California Department of Education (CDE) envisions school facilities that enhance the achievement of all students and are learner-centered, safe, sustainable, and centers of the community. Section 17215 of the *Education Code (EC)* requires that property proposed to be acquired or leased for school purposes within two nautical miles of an existing or proposed airport runway be evaluated by the Division prior to the acquisition or lease of the property. This provision applies to school districts, county offices of education, and charter schools regardless of the funding source. The Division's review is required for all runways, whether public, private, or military. If the Division's recommendation does not favor acquisition of a proposed site, the governing board may not acquire title to nor lease the property. Additionally, neither State funds nor local funds may be apportioned or expended for the acquisition of construction of any school building on, or for expansion of, any existing school site to include the reviewed site. The Division communicates with the CDE to ensure that they have all of the necessary information to provide the most accurate evaluations possible.

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 the 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.

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 communities.

Federal Cooperation

Federal Aviation Administration

Management of California's aviation system is complex. First, the State does not operate any public-use airport. The airport sponsor is generally a city or county government that owns and operates the airport 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 CEQA review, intermodal and aviation system planning support, 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 while promoting safe aviation.

Additionally, the FAA certifies and performs safety compliance inspections of public use airports along with the Division. The FAA is the sole regulator of the NAS during routine and emergency operations. They further regulate aircraft and pilot certification, aircraft maintenance programs, and set nationwide airport land use guidance. They also manage the AIP funding grants for airports in the NPIAS. The 2013-2017 NPIAS is FAA's national airport plan submitted to Congress that identifies 3,355 public-use airports that are significant to national air transportation; therefore and are eligible to receive federal grants under the AIP.

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 $2.75 billion into the State in support of aviation projects. In addition, California GA aviation fuel excise tax contributed approximately $62.2 million over the same period into the State Aeronautics Account.

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.

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 unresolvable 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 AICUZ, and is subject to ALUC development review processes

Flight training remains one of the most important Department of Defense missions in California, and the State is home to some of the nation's most important military artillery flight training ranges. The State's largest special use air space area R-2508 is the largest area of restricted military airspace in the United States 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 20,000 square miles.

The military's relationship with their Regional Transportation Agency and MPO 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.

Section 3
Policies, Goals, Implementation, and Performance

Introduction

Over the past 25 years, various editions of the Policy Element 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 continues with the seven most substantive and consistent issues presented in the 2011 edition.

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 modified only in how they are implemented.

The layout of this section allows 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 are explained.

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

- Stewardship and Preservation Page 3-3
- Safety Page 3-7
- Mobility Page 3-11
- Airport Integration in Land Use Planning Page 3-13
- Economics Page 3-17
- Environment Page 3-19
- Education and Research Page 3-23

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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 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.
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○ 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 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. The Education and Research (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 and the public investments made in them.

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 (244) in the State, none of which are operated by the State. Yet the Division is advancing the concept of creating a type of system plan with the FAA 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.

Action items and performance measures in this policy area overlap with some activities in the ER 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 or commercial infrastructure. To advance this, the Division will need to create a new type of 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 system plan tying these programs together with standards that benefit the entire State will be a worthy challenge.

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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: Issues Site Approvals and Permits for airports and heliports, 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: Creation of Airport Land Use Commission (ALUC), power and duties of the ALUC, Airport Land Use Planning Handbook (Handbook), Airport Land Use Compatibility Plans (ALUCP). PUC §21670 (a), 21674, 21674.7, and 21675(a).

#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, heliports, and hospital 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 landings near schools.
SF0-5: To 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 safety hazards within areas around public airports.

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 and hospital 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.

Office of Aviation Planning o SFi-6: To continue working with and reaching out to the ALUCs, to encourage compatible land uses in the vicinity surrounding an airport by providing technical expertise and funding grants to develop and update an ALUCP. 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 Office of Aviation Planning o SFp-2: Enhanced public safety by the adoption of new and updated ALUCPs that only allow the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to safety hazards within areas around public airports.

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, both in the air and on the ground, from 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 certificated 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, and may be addressed in detail in ALUCPs. 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, continues to question if a two-mile Airport Influence Area (AIA) around each airport is still appropriate given the height to which some electronic, energy and other urban infrastructure features penetrate airspace near airports. This concept could be addressed using the provisions of PUC Section 21675(a), which requires preparation of an Airport Land Use Compatibility Plan (ALUCP). ALUCPs are required to contain land use measures that minimize the public's exposure to safety hazards within areas around public airports. Protecting people and property on the ground from the potential consequences of near-airport aircraft accidents is a

fundamental land use compatibility-planning objective. While the chance of an aircraft injuring someone on the ground is historically low, an aircraft accident is a high consequence event. To protect people and property on the ground from the risks of near-airport aircraft accidents, some form of restrictions on land use is essential and necessary. An up-to-date ALUCP (i.e. not more than five years old) reduces the risk of injury and property damage on the ground by limiting the number of persons in an area and by limiting the area covered by occupied structures.

The concept of extending AIAs to four-miles around an airport is still brought up from time to time. 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 flight 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.

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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: Report on participation in Caltrans multimodal activities where the Division has not been previously involved.

Discussion

Airport access is commonly divided into two categories, airside and landside. Airside refers to all vehicles moving within the ramps, aprons, taxiways, runways, as well as areas used by ground support and emergency vehicles. Landside operations include vehicle movements over roads that bring people and cargo to and from the airport. Unfortunately most transportation plans limit their discussion of aviation mobility to the landside operations and exclude how these roads affect airside operations. Also lacking is the consideration that airports are job centers and employees working at the various businesses on the airport need to have multi-modal transportation opportunities the same as workers in other employment centers.

From the airside perspective, airports are considered to be reaching capacity when congested ground movements prevent airplanes from efficiently moving around the airport or meeting their scheduled arrival or departure times. 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. Such airside influencers also affect how aviation and support business may or may not alter their business plans. The efficient flow of vehicles on and through an airport are critical to the economic prosperity of that airport.

Adequate vehicle movements in and out of the airport is typically how landside access is characterized. However, this simple approach is often 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 (airside); while local governments fund landside access. Because of different federal and state funding sources, FAA, Federal Highway and Federal Transit monies can rarely be mixed on the same airport project. If local jurisdictions or the FAA can't keep pace with each other's programs, sorely needed access improvements can face years of delays while congestion increases. Resulting traffic delays affect not only airport and passenger operations, but also airport support business and employee transportation solutions.

Community airport access is related to landside access, but differs in that discussions of multimodal access has to be included. Continuing the concept that airports should be viewed as employment centers, the need for multimodal connectivity increases. Passenger and airport employee movements, along with air cargo and public transit, are factored ground movement solutions around the airport. Moreover, some inner-city GA airports could benefit better bicycle and pedestrian connectivity thus helping reduce auto trips and parking. Some of the Smart Mobility concepts introduced in Section 2 could be used to facilitate solutions for more accommodating road designs into airports.

Many WWII military airfields were closed at the end of the war and deeded to local governments (cities and counties) on the condition they would remain an operational airport. The location of many of these surplus airports was often away from the community and planned growth areas. While there is some benefit to having an airport a safe distance from residential and large gathering places, this also precludes some of the common multimodal transportation solutions from being integrated at airports. This mismatch can make it challenging for a community to fully integrate an airport into its transportation, economic and growth plans. Consequently, airport access plans need to be fully examined when considering broader traffic and circulation plans for a community. Considerations could also be expanded to include multiple access roads that separate uses (people from cargo) for efficiency and safety reasons. However, Caltrans has entered a new era of multimodal transportation and community planning. There will be new opportunities for the Division discuss broader regional transportation solutions that can have a positive influence on the value of aviation for those communities that have a public airport.

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 o PLi-1: Continue preparation of CASP elements recommending improvements as necessary to keep the CASP in line with current aviation and system planning needs. o PLi-2: Participate in CIB planning activities with a focus on better integration of aviation in statewide community and transportation planning programs. o PLi-3: Meet with ALUC's to help improve their understanding of their roles, responsibilities and limitations as outlined in the Aeronautics Act. o PLi-4: Assist ALUC's with an understanding of various planning programs that can affect aviation and their review roles. o PLi-5: Provide support in the use and interpretation of the Handbook. o PLi-6: Provide aviation-related support during the preparation and review of RTPs, OWPs, and General Plans as appropriate.
Performance
Office of Aviation Planning o PLp-1: Document activities in Caltrans planning programs where participation has not been demonstrated in the past.

Discussion

California has a program for initiating land use compatibility around airports. It begins with the formation of ALUCs beginning at PUC Section 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 Section 21675, to prepare an ALUCP for the orderly growth of each public-use 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 land use planning staff identified on the Office of Aviation Planning's website.

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 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.

The ALUCPs policies and procedures are in addition to local government's policies and procedures and should be considered a powerful safety instrument that protects the public. 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. Caltrans is making a concerted effort to incorporate aviation as an integral component of State planning

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 Transportation Plan 2040
- Smart Mobility Framework
- Sustainable Communities Strategies
- Local Development–Intergovernmental Review
- Public Participation
- Climate Action Program
- Goods Movement
- Military Liaison

The initial performance goal is to create a voice for aviation in all these programs. Success will be measured if 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.

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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 2013, aviation in California contributed 4.8 percent to the U.S. Gross Domestic Product and 1.2 million jobs–numbers that are significant when considering that California is often cited as one of the top ten economies in the world (currently seventh). Airports are more than just runways, they are access points to markets. Although aviation is a revenue generator and job producer for their respective communities, Caltrans' role is to support consideration by economic development agencies that airports are valuable to their community from which global markets are accessed. This broader market area directly translates to improved quality of life in their communities.

Beyond the fact that airports act as transportation nodes to markets that are aligned with major civic centers, many General Aviation 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 also have a runway, which further increases its economic value. The lack of realization of the potential return on investment or expanding reinvestment in California aviation has reached a critical place. Aviation in California continues to require a stronger voice from Caltrans to expand on how airports can be better aligned with a focus on maximizing economic development options for their communities.

Caltrans can demonstrate a stronger 'open-for-business' attitude regarding development opportunities around airports. While adhering to and in cooperation with the FAA, their airport 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.

In 2014, the Division completed the Caltrans Airport Forecasting Study – The Role of California Airports in Smart Growth and Economic Vitality (http://dot.ca.gov/hq/planning/aeronaut/documents/planning/CaltransAirportForecastingStudy.pdf), which demonstrates how encouraging such development at airports around the State optimizes the movement of goods and could help improve airport access by surface traffic while easing local 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-development commercial projects has found a sustainable home in the immediate vicinity of GA airports. State and civic leaders need to champion these development types. The Department will move toward better communication between airport sponsors, local governments, and federal partners to improve aviation, while maximizing the potential of a sustainable and profitable airport system for the State of California.

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 Aviation Planning ○ 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 ○ 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 Statute Section 21096 outlines 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 comments to the Lead Agency for consideration 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 Section 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 effect 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.

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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.
ERo-5: Seek outreach and educational opportunities through regular publications and electronic formats.

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.
- ERi-7: Regularly contribute aviation related information through the California State Association of Counties, California League of Cities, California Association of Councils of Governments and other newsletters.
- ERi -8: Implement social media as a means to communicate the latest information pertaining to aviation.

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 a bi-annual, or as needs warrant, 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.
- ERp-4: The Division should become members of California State Association of Counties, California League of Cities, California Association of Councils of Governments and other newsletters to effectively communicate the purposes and processes of aviation system planning and provide the latest aviation related information through their newsletters.

Discussion

In various parts of the Aeronautics Act the Division is mandated to deliver and participate in education programs that foster aviation in California. Within this area the Division seeks to promote California aviation by focusing its efforts in three key areas: safety, airport land use planning, and research.

Safety

Keeping the public safe on and in the vicinity of airports is vital. While the FAA has complete authority over aircraft, flight safety and airspace, 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 and Programs 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.

Planning

The Division's mandates in aviation education and advocacy are really two sides of the same coin. For example, the Office of Aviation Planning is charged with conducting ALUC training so there is a common understanding of roles as outlined in the Airport Land Use Planning Handbook. 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. 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 seminars on various technical and planning topics. The Division also participates 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. Many city and county planning staff 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.

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 Transportation Research Board, Airport Cooperative Research Program panels to promote aviation system and environmental 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.

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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

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