<u>Preliminary Investigation</u>   (PI-0047

Caltrans Division of Research, Innovation and System Information

California Aviation System Plan Update: Survey of State Practice

Requested by
Ron Bolyard, Division of Aeronautics

October 29, 2018

The Caltrans Division of Research, Innovation and System Information (DRISI) receives and evaluates numerous research problem statements for funding every year. DRISI conducts Preliminary Investigations on these problem statements to better scope and prioritize the proposed research in light of existing credible work on the topics nationally and internationally. Online and print sources for Preliminary Investigations include the National Cooperative Highway Research Program (NCHRP) and other Transportation Research Board (TRB) programs, the American Association of State Highway and Transportation Officials (AASHTO), the research and practices of other transportation agencies, and related academic and industry research. The views and conclusions in cited works, while generally peer reviewed or published by authoritative sources, may not be accepted without qualification by all experts in the field. The contents of this document reflect the views of the authors, who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the California Department of Transportation, the State of California, or the Federal Highway Administration. This document does not constitute a standard, specification, or regulation. No part of this publication should be construed as an endorsement for a commercial product, manufacturer, contractor, or consultant. Any trade names or photos of commercial products appearing in this publication are for clarity only.

Table of Contents

Background

The Caltrans Division of Aeronautics is preparing to update the California Aviation System Plan (CASP), which serves as a planning tool to support the 243 public use airports in the state. Public use airports are independently owned and operated. The current CASP's collection of status reports does not align with Federal Aviation Administration (FAA) guidance published in FAA Advisory Circular No. 150/5070-7 or with the goals outlined in the June 2016 California Transportation Plan 2040 (CTP). The CTP advocates linking all transportation forms—surface, transit, rail, high-speed rail and aviation—into an integrated transportation solution that is beneficial to the state. The revised CASP will integrate FAA guidance specific to airport improvements and will reflect the CTP's goals, priorities and objectives. It will also include the activities needed to better integrate aviation and airports into the state's suite of transportation solutions to help California realize greater benefits from aviation.

To inform the CASP update, CTC & Associates distributed an online survey to members of the American Association of State Highway and Transportation Officials (AASHTO) Aviation Council and to aviation executives from selected state transportation agencies. The survey sought recommendations and innovative practices employed by other state transportation agencies that are actively engaged in updating state aviation system plans (SASPs) or have recently completed SASPs. Fifteen state transportation agencies participated in the survey.

Summary of Findings

Caltrans' focus in the CASP update is on the planning associated with general aviation (GA), particularly in the following five goal areas:

- Economics and funding.

- Infrastructure and safety.

- Land use and environmental sustainability.

- Mobility and access.

- Performance metrics, trends and needs.

In addition to capturing information from these goal areas, the online survey sought details about state practices and strategies related to stakeholder outreach and to intergovernmental coordination and implementation.

Economics and Funding

Partnerships with state or local economic development programs have enabled the aviation program in six of the 15 states participating in this survey—Alaska, Massachusetts, Minnesota, Oklahoma, Pennsylvania and Utah—to bolster GA airport economic sustainability, particularly in the areas of business and workforce development. For example, Massachusetts DOT has partnered with the Massachusetts Office of Business Development to expand the facilities at Gulfstream Aerospace and to increase employment at Gulfstream's Westfield-Barnes Regional Airport. Minnesota DOT has worked with its state Department of Employment and Economic Development to promote the importance of GA and GA jobs.

Survey respondents described a range of innovative practices implemented in their state to increase funding for GA airports. Grants, loans, bonding, fees and taxes, and legislation were among the alternative funding sources. In addition to creating a new project prioritization process, Alaska Department of Transportation and Public Facilities (DOT&PF) also collects airport facility needs—information that is used to update the National Plan of Integrated Airport Systems (NPIAS) and to receive entitlement money for nonprimary airports. In Georgia, the respondent noted that the state does not consider increases in funding; instead, the system plan is set up to best prioritize both federal and state funding to achieve system plan goals.

Agencies also employ a range of practices to better align state aviation funding programs with FAA grant opportunities. Matching state grants, collaboration with FAA and airport management, entitlements and capital investment plan (CIP) activities are among the strategies used to maximize federal spending dollars.

Respondents were asked to describe state efforts related to economics and funding that have produced the best results in the following categories: economic development strategies, partnerships and funding opportunities. The most common economic development strategies cited were economic impact studies, meetings and partnerships, and support for local community goals. Although specific strategies weren't provided, the Alaska DOT&PF respondent noted that the agency supports aviation as much as possible since 82 percent of the state's communities are not connected by roads, making aviation a necessity. A range of partnerships have proved productive in the states surveyed, primarily partnerships with FAA but also alliances with state agencies, industry associations and other organizations. The Utah DOT respondent reported that the agency is currently developing a public-private partnership process to support airports within the state system. The most frequently described funding opportunities were grants, loans and legislative efforts. Alaska DOT&PF has created a prioritizing system to assess airport needs and determine which projects to advance, ensuring discretionary and entitlement funds are fully spent each year and improving the aviation system as needs arise.

Three states—Alaska, Massachusetts and Nevada—described additional practices for developing new sources of revenue. Alaska DOT&PF Statewide Aviation Division has created a centralized database that houses all airport-related data for project planning. The Massachusetts DOT Aeronautics Division has established working relationships with both internal and external groups to leverage funds and services. In Nevada, the aviation program has received funding through a state license plate program (the program has since been discontinued) and it has also considered fuel tax funds (however, aviation fuel tax is now returned to each airport).

Infrastructure and Safety

Five states—Alaska, Arizona, Illinois, Montana and Nevada—rely solely on a priority rating system (either the FAA system or a state system) to prioritize GA infrastructure and safety projects. Three other states—Colorado, Massachusetts and Oklahoma—use a priority rating system along with other criteria such as the goals and objectives of the SASP. States not using a priority rating system frequently use multiple criteria, such as safety and system preservation.

When asked to describe project prioritization methods that maximize federal and state aviation grant funding, survey respondents described a range of innovative practices and processes. Several reported using matching state grants. Other practices include scheduling projects in phases (Illinois and Massachusetts) and considering a consistent balance between rural and urban needs (Kansas).

Land Use and Environmental Sustainability

Few states described efforts to champion land use and environmental sustainability at GA airports. Respondents who did describe sustainability efforts often reported partnering with other agencies such as the state environmental protection program. Some notable efforts:

- Colorado DOT, in partnership with FAA and with FAA funding, has developed tools and guidance for state GA airports to develop sustainability plans for their facilities.

- Water conservation and water quality efforts were primarily related to stormwater management.

- Noise mitigation in Illinois is in accordance with FAA noise programs while both New Hampshire and Utah employ voluntary noise abatement procedures.

- Nonlethal bird techniques and habitat protection or enhancement were described by four states, including Illinois DOT, which partnered with U.S. Department of Agriculture to make a wildlife management program available to interested airports.

- Two DOTs provided information about green building initiatives at GA airports. In Massachusetts, the Statewide Airport Administration Building (SAAB) program uses modular design and efficient building materials, and offers a provision to install future solar capabilities. Pennsylvania DOT considers green building measures in the state's project ranking.

- Considerations to aesthetics in GA facilities were described by three state respondents. The SAAB program in Massachusetts constructs or renovates administrative buildings. Utah ensures that signage within a facility is accurate and that public amenities are inviting. Minnesota DOT is surveying pilots to determine what features, amenities and services are important to them.

None of the respondents described air quality efforts. Only three states—Alaska, Massachusetts and New Hampshire—provided priorities for addressing the implications of climate change.

Mobility and Access

Respondents were asked to describe how their state aviation program has encouraged the incorporation of multimodal access in to and out of GA airports. Louisiana Department of Transportation and Development addresses multimodal access areas during CIP meetings with airport sponsors, while New Hampshire participates in discussions about surface transportation improvement prioritization with regional planning commissions. When feasible, Nevada DOT combines airport projects with transportation projects (for example, pavement projects).

States that encourage multimodal access to airports through local and state roadways reported using airport signage and establishing partnerships with state and local agencies. For transit alternatives and rail transportation (commuter or freight), states generally participate in planning or coordination efforts with other state and local agencies. To support walking and bicycling to and from GA airports, Massachusetts and Nevada support safe street initiatives. In addition, some airports in Massachusetts also offer courtesy bicycles for users to travel to and from nearby communities.

Performance Metrics, Trends and Needs

Pennsylvania DOT's recently completed SASP update included a return on investment analysis at six airports. In 2015, Alaska DOT&PF created performance metrics as part of its aviation

system plan. The agency has also automated scorecards that can be run at any time to assess components of the system. Utah DOT is creating a SASP that will track dollars generated by airports (dollars spent and tax revenue generated). Illinois DOT currently uses pavement condition information to monitor performance but may revise its SASP to establish performance measures that are better integrated with other multimodal plans and initiatives. Minnesota DOT doesn't have a formal performance measures system directly tied to investment, but the agency does track dollars spent and compares them year over year.

Nine agencies provided a range of trends they are monitoring to improve GAs for the airport and/or its customers. Workforce shortages, airport capacity improvements and the economic impact of an airport in the community were the most commonly cited trends. In the event of a significant incident, such as a natural disaster, the leading priorities for bringing airports back online were power restoration and infrastructure safety.

Outreach, Intergovernmental Coordination and Implementation

In the final section of the survey, respondents described their stakeholders; outreach practices to engage these stakeholders in the state aviation program; and efforts to collaborate or coordinate with federal, state and local agencies. Detailed responses from agencies surveyed are summarized in tables beginning on page 36.

Related Research and Resources

Supplementing the survey results are documents and other resources provided by survey respondents and sourced through a limited literature search. Publications include federal guidance, published SASPs and details about plan updates in progress.

Gaps in Findings

Many sections of the survey received a limited response from survey participants, specifically in the areas of land use and environmental sustainability, multimodal access and performance metrics. In addition, respondents from three states—Colorado, Georgia and Kansas—provided only a partial response to the survey. Follow-up inquiries with these agencies and with transportation agencies that were contacted but did not participate in the survey could produce findings of interest in these areas.

Next Steps

Moving forward, Caltrans could consider:

- Examining in detail the completed SASPs provided by survey respondents and sourced during the limited literature search to identify strategies, practices and policies of interest to Caltrans. Follow-up communication with these agencies could produce information that would be useful to the CASP update.

- Monitoring the efforts of transportation agencies that are currently finalizing their SASPs (Georgia, Illinois, Minnesota and Pennsylvania) to learn about practices and strategies adopted.

- Contacting agencies that are considering a plan update (Nevada and Utah).

Survey of Practice

Survey Approach

The Caltrans Division of Aeronautics is preparing to update the California Aviation System Plan (CASP), which serves as a planning tool to support the 243 public use airports in the state. Public use airports are independently owned and operated. The current CASP's collection of status reports does not align with Federal Aviation Administration (FAA) guidance published in FAA Advisory Circular No. 150/5070-7 or with the goals outlined in the June 2016 California Transportation Plan 2040 (CTP). The CTP advocates linking all forms of transportation—surface, transit, rail, high-speed rail and aviation—into an integrated transportation solution that benefits the state. The revised CASP will integrate FAA guidance specific to airport improvements and will reflect the CTP's goals, priorities and objectives. The new plan will also include the activities needed to better integrate aviation and airports into the state's suite of transportation solutions to help California realize greater benefits from aviation.

Caltrans is seeking recommendations and innovative practices employed by other state transportation agencies that are actively engaged in updating state aviation system plans (SASPs) or have recently completed SASPs. Caltrans' focus is on the planning associated with general aviation (GA), particularly in the following five goal areas:

- Economics and funding.
- Infrastructure and safety.
- Land use and environmental sustainability.
- Mobility and access.
- Performance metrics, trends and needs.

To gather information for this effort, an online survey was distributed to members of the American Association of State Highway and Transportation Officials (AASHTO) Aviation Council and to aviation executives from selected state transportation agencies. In addition to capturing information from the five goal areas, the survey sought information about state practices and strategies related to stakeholder outreach and to intergovernmental coordination and implementation.

The survey questions are provided in Appendix A. The full text of survey responses is presented in a supplement to this report.

Summary of Survey Results

Fifteen state transportation agencies responded to the survey:

• Alaska.	• Kansas.	• Nevada.
• Arizona.	• Louisiana.	• New Hampshire.
• Colorado.	• Massachusetts.	• Oklahoma.
• Georgia.	• Minnesota.	• Pennsylvania.
• Illinois.	• Montana.	• Utah

Five of these agencies—Georgia, Illinois, Minnesota, Pennsylvania and Utah—are currently updating or considering updating their SASP.

Below is a discussion of survey results in the following topic areas:

- Economics and funding.
- Infrastructure and safety.
- Land use and environmental sustainability.
- Mobility and access.
- Performance metrics, trends and needs.
- Outreach, intergovernmental coordination and implementation.

Respondents from three of these states—Colorado, Georgia and Kansas—provided a partial response to the survey. Feedback from these states is included in this Preliminary Investigation where available.

Supplementing the survey results are documents and other resources provided by survey respondents and sourced through a limited literature search. These resources are included in **Related Resources** sections throughout this report.

Economics and Funding

Bolstering Economic Sustainability Through Agency Partnerships

Partnerships with state or local economic development programs have enabled the aviation program in six of the 15 states participating in this survey—Alaska, Massachusetts, Minnesota, Oklahoma, Pennsylvania and Utah—to bolster GA airport economic sustainability:

- Alaska Department of Transportation and Public Facilities (DOT&PF), which owns and operates most of the state's aviation system, supports aviation as much as possible since 82 percent of the state's communities are not served by roads.

- Massachusetts Department of Transportation (DOT) has partnered with the Massachusetts Office of Business Development to expand the facilities at Gulfstream Aerospace (a manufacturer of business aircraft) and to increase employment at Gulfstream's Westfield-Barnes Regional Airport, located in Westfield, Massachusetts.

- Minnesota DOT has worked with the state's Department of Employment and Economic Development to promote the importance of GA and GA jobs.

- Oklahoma Aeronautics Commission staff and representatives from local communities have attended national aviation events and conferences, which has resulted in several business leads and some success in recruiting companies to locate to Oklahoma airports.

- Pennsylvania DOT has involved the state's Department of Economic and Community Development in the SASP and future statewide economic studies.

- Utah DOT has partnered with the Utah Governor's Office of Economic Development and the Economic Development Corporation of Utah.

Increasing Funds for General Aviation Airports

Survey respondents described a range of innovative practices implemented in their state to increase funding for GA airports. Grants, loans and legislation were among these alternative funding sources. The exception was Georgia DOT. The respondent noted the state does not consider increases in funding; instead, the system plan is set up to best prioritize both federal and state funding to achieve system plan goals. Below are highlights of survey responses by topic area:

Bonding

- Minnesota DOT has considered bonding for projects at the state level.

Fees and Taxes

- Arizona DOT's programs are funded independently of the state's general fund by collecting fees and taxes through aviation-related services such as aviation property taxes and fueling fees.

Grants and Loans

- Colorado DOT supports and promotes the state's infrastructure bank loan program as an alternative funding source. In the past three years, two GA airports have received loans totaling $9 million for projects where other project funding was not readily available.

- Illinois DOT participates in the FAA's State Block Grant Program, which, according to the survey respondent, can increase flexibility in federal funding for GA airports. Illinois does have a state–local airport improvement program that occasionally prioritizes projects that rank low in the national priority rating system and do not receive federal funds.

- Kansas has a state grant program that retains additional funds from unused grants.

- Massachusetts DOT has added state-funded programs for projects such as airport administration buildings, security cameras, fencing and gates, vegetation management, pavement crack sealing and airfield markings.

- In addition to bonding, Minnesota DOT has considered grants from other agencies within the state that might be available to airports.

- New Hampshire DOT developed a one-page summary of alternative grant and loan funds available for airport improvements (see *Related Resources* on page 13).

Legislative Initiatives

- Nevada DOT actively engages in all legislative initiatives that could assist aviation facilities.

- Pennsylvania Act 89 of 2013 set aside $6 million in additional funding for all public use airports (commercial service and GA).

Other Practices

- The last phase of Alaska DOT&PF's system plan is focused on creating an inspection program that will evaluate and rate all aspects of an airport; ratings will be used to prioritize project funding across the system. The agency also collects airport facility needs—information that is used to update the National Plan of Integrated Airport Systems (NPIAS) and to receive entitlement money for nonprimary airports.

- Oklahoma Aeronautics Commission created an aviation license plate, with funding allocated to support airports and aviation education.

- In Utah, most airports are too small to support fixed-base operator (FBO) services. Instead, Utah DOT connects travelers to services through externally based operators. For example, the agency has sold intercom radios to local vehicle rental businesses and other service-related businesses to communicate with airport travelers. The agency also works with the Governor's Office of Economic Development and local mayors to use property outside of airports to support the facilities.

Maximizing Federal Aviation Administration Grant Opportunities

Respondents were asked to describe agency practices that better align state aviation funding programs with FAA grant opportunities. Most states employ practices to maximize the use of federal spending dollars, including matching state grants, collaboration with FAA and airport management, and activities related to capital investment plans (CIPs). Two states reported challenges to state funding practices. The low price of oil in Alaska has limited Alaska DOT&PF's current funding programs. Georgia DOT's system plan, as mentioned earlier, is set up to best serve the state's businesses and residents without strong consideration of federal grant opportunities. State practices that maximize FAA grant funding are summarized below by topic area.

Maximizing Federal Aviation Administration Grant Funds		
Practice/Strategy	**State/Agency**	**Description**
CIP Activities	Colorado	Collaborates with public airport sponsor and FAA to manage CIPs for 73 of the state's 74 public use airports. (As a large hub, Denver International Airport manages its own CIP with FAA.)
	New Hampshire	Conducts annual CIP meetings with individual airports as part of the DOT's Block Grant Program responsibilities.
	Oklahoma	Changed the state's airport CIP to a five-year program.
Collaboration with FAA and Airport Management	Colorado	Works very closely with FAA Airports District Office (ADO) counterparts to collectively leverage both state and federal program funds.
	Louisiana	- Discusses projects with FAA monthly. - Tries to have potential "shovel-ready" projects available for grant opportunities.
	Nevada	Participates in FAA's Airports Capital Improvement Plan (ACIP) programming meetings to help airport management understand its future funding requirements.

Maximizing Federal Aviation Administration Grant Funds		
Practice/Strategy	**State/Agency**	**Description**
Collaboration with FAA and Airport Management	New Hampshire	Keeps in contact with FAA Regional Office on Airport Improvement Program (AIP) grant opportunities.
	Utah	Tries to meet with managers from every airport and FAA twice each year to coordinate planning, priorities and funding.
Entitlements	Minnesota	Transfers entitlements among GA airports.
State Grant and Loan Programs	Arizona	Budgets and provides a matching state grant to all FAA grants.
	Illinois	Participates in the FAA's State Block Grant Program. Because Illinois DOT administers FAA grants for the majority of the airports within the system, it can align available state aviation funds to maximize opportunities.
	Kansas	• Is developing criteria for economic benefits to be realized from grant support. • Is exploring photo-/radio-based products for counting operations at nontowered airports to gain insight on airport utilization.
	Massachusetts	For an FAA-eligible project, leverages federal dollars first and then adds non-FAA-eligible tasks that the airport has requested (such as an access road) at an 80%/20% funding split.
	Montana	Matches FAA funding to airports through a state loan and grant program.
	New Hampshire	Requests bonded funding in state aeronautics capital budget to match anticipated FAA-eligible projects.
	Pennsylvania	Funds 50% of AIP projects with state match.
	Utah	Integrates all state funding with FAA funding.

Best Practices in Economics and Funding

Respondents were asked to describe state efforts related to economics and funding that have produced the best results in the following four categories:

- Economic development strategies.
- Partnerships.
- Funding opportunities.
- Other practices.

Most respondents provided information for some or all of these categories. Their responses are summarized below. Arizona DOT was completing its SASP update at the time this survey was administered; the respondent noted that the updated plan would include recommendations for changing policy that will improve efforts in these categories. The Georgia DOT respondent noted that the agency's SASP is funded in phases; the economic development portion of the plan will be funded in 2019.

<u>Economic Development</u>

Nine state transportation agencies surveyed provided information about economic development practices and strategies. Economic impact studies along with meetings and partnerships, and support for local community goals were methods most commonly cited. The table below summarizes survey responses.

Economic Development		
Practice/Strategy	**State/Agency**	**Description**
Economic Impact Studies	Illinois	• Completed the Illinois Statewide Aviation Economic Impact Study in 2012. • Encourages airports and consultants to consider using the Illinois DOT Economic Development Program (when it's funded).
	Montana	Provides economic impact studies to assist airports with planning programs.
	Pennsylvania	Publishes economic impact studies every 10 years.
Meetings and Partnerships	Colorado	Collaborates with local airport sponsors to identify potential projects that will increase airport activity and/or support local needs (for example, funding airport runway projects that are not NPIAS projects).
	Illinois	• Attends industry association meetings. • Shares information with airports about economic development opportunities and programs available through other agencies.
	Kansas	Attends trade shows with state department of commerce representatives to promote Kansas as a business destination.
	Oklahoma	Partners with state department of commerce to support local communities in economic development initiatives.
Other Practices	Alaska	Supports aviation as much as possible since it is a necessity for travel in the state.
	Massachusetts	Developed the Statewide Airport Administration Building (SAAB) Program, which supports solar installations on building rooftops. The buildings also contain a shell for a restaurant buildout and office space that could be used for FBOs.

Economic Development		
Practice/Strategy	**State/Agency**	**Description**
Other Practices	Utah	Focuses on local community's economic development goals and tailors airport projects to help accomplish those goals.

Related Resources

Illinois

Illinois DOT Economic Development Program, Illinois Department of Transportation, 2015.
http://www.idot.illinois.gov/transportation-system/local-transportation-partners/county-engineers-and-local-public-agencies/funding-opportunities/economic-development-program
From the web site: The purpose of the EDP is to provide state assistance in improving highway access to new or expanding industrial, distribution or tourism developments. The intent is to make available state matching funds that will be a positive contribution in the location-selection process and to target those projects which will expand the state's existing job base or create new employment opportunities.

Illinois Statewide Aviation Economic Impact Study, Division of Aeronautics, Illinois Department of Transportation, June 2012.
http://illinoisairportsmeanbusiness.com/IL-Econ_TechnicalReport.pdf
From the introduction: This study identifies the economic benefits, quantified in terms of employment, payroll and economic output, associated with the 11 commercial service and 105 general aviation airports that serve communities throughout Illinois.

Massachusetts

Statewide Airport Administration Building (SAAB) Program, Aeronautics Division, Massachusetts Department of Transportation, undated.
https://www.mass.gov/statewide-airport-administration-building-saab-program
The Massachusetts DOT SAAB Program "helps airports construct or renovate administration buildings to meet accessibility needs, build more airport management space, and better offer the public conference rooms, restaurant shells, and better views of the airfield."

Montana

Montana Airports: 2016 Economic Impact Study, Montana Department of Transportation, January 2017.
http://www.mdt.mt.gov/aviation/docs/2016/economic-impact/MT-EIS-Technical-Report.pdf
From the study objective: MDT conducted a comprehensive study of the state's aviation facilities to better understand the value of Montana's airports from the perspective of both economics and community benefits. This study analyzed the contributions of airports within the Montana system with measurable economic outputs, including on-airport aviation- and non-aviation-related businesses, visitor spending, capital expenditures on construction, and additional spin-off (or "multiplier") effects or benefits. This study also examined specific activities and uses at each airport to identify how these facilities support Montana's residents and visitors.

New Hampshire

Grant and Funding Assistance Possibilities for New Hampshire's Airports, New
Hampshire Department of Transportation, June 9, 2017.
https://www.nh.gov/dot/org/aerorailtransit/aeronautics/programs/index.htm
Scroll to "Grants—Other" for links to a one-page document and spreadsheet that summarize
federal and nonfederal funding opportunities for airport operating budget, wildlife, sustainability
or economic development projects.

Pennsylvania

The Economic Impact of Aviation in Pennsylvania Study, Bureau of Aviation, Pennsylvania
Department of Transportation, October 2011.
https://www.penndot.gov/Doing-
Business/Aviation/Planning%20and%20Zoning/Documents/2011%20Aviation%20Economic%2
0Impact%20Study%20Technical%20Report.pdf
From the introduction: The primary focus of this study is to identify the economic impacts
associated with commercial service and general aviation airports that serve communities
throughout Pennsylvania. However, there are benefits associated with aviation-related activities
that are found beyond the boundaries of the airport. This study estimates the economic impacts
of these additional off-airport—yet aviation-related—activities.

Partnerships

Survey respondents reported on a range of partnerships that have proved productive in their
state, primarily with the FAA but also through alliances with state agencies, industry
associations and other organizations. The Utah DOT respondent reported that the agency is
currently developing a public-private partnership process to support airports within the state
system. The table below summarizes survey responses.

Partnerships		
Partner	**State/Agency**	**Description**
Airport Sponsors	Pennsylvania	Primary partner. (The agency rarely partners with other agencies and private entities.)
FAA	Alaska, Colorado	N/A
	Illinois	State Block Grant Program.
	Kansas	Numerous agency partners since the state was selected to participate in FAA's Unmanned Aircraft Systems (UAS) Integration Pilot Program.
Industry Associations	Alaska	Alaska Air Carriers Association, Aircraft Owners and Pilots Association and other associations.
	Colorado	Colorado Airport Operators Association.
	Massachusetts	Massachusetts Airport Management Association, which, along with the state aviation caucus, lobbies on behalf of the Aeronautics Division on aviation-related matters.

Partnerships		
Partner	**State/Agency**	**Description**
State Agencies	Alaska	N/A
	Oklahoma	State's transportation, commerce and tourism departments to support the commission's work and the airports within the state system.
Other	Massachusetts	Gulfstream Aerospace and local schools to enhance science, technology, engineering and mathematics (STEM) programs and future workforce development for UAS and aircraft maintenance technician (AMT) programs.
	Utah	Developing a public-private partnership process.

Funding Opportunities

Respondents from eight transportation agencies surveyed provided information about funding opportunities in their state. Grants, loans and legislative efforts were most frequently described. The table below summarizes survey responses.

Funding Opportunities		
Practice/Strategy	**State/Agency**	**Description**
Grants and Loans	Massachusetts	Research funds for DOT grants.
	Montana	State loan and grant opportunities for federally and nonfederally funded construction and planning projects.
Legislative Efforts	Kansas	Ongoing works-in-progress through legislative contacts.
	New Hampshire	• State capital budgeting to match AIP funding from FAA. (Airport sponsors primarily rely on AIP funding.) • One-on-one education efforts with fiscal committee legislators about the value of aviation.
	Oklahoma	In partnership with aviation organizations, lobbied state Legislature to increase aviation taxes for the benefit of airports and to reduce existing aviation tax exemptions to increase revenue.
Partnerships	Massachusetts	Pursuing new partnerships across all DOT departments and with academia for drone implementation.

Funding Opportunities		
Practice/Strategy	**State/Agency**	**Description**
Other Practices	Alaska	A prioritizing system to assess airport needs and determine which projects to advance, ensuring discretionary and entitlement funds are fully spent each year and improving the aviation system as needs arise.
	Illinois	Funding opportunities monitored by various offices, including the Office of Aeronautics. Information shared with appropriate airports and other stakeholders.
	Utah	• Facility use: Encourage small airports to use every square foot of the facility to generate revenue (for example, install solar panels in parking lots). • Practices other than fuel sales.

Other Practices

Three states—Alaska, Massachusetts and Nevada—described additional practices for developing new sources of revenue to support aviation programs.

Alaska

Alaska DOT&PF Statewide Aviation Division has created an online database that houses all airport-related data in a central location. The system, which is accessible to department staff through an internal login, stores initial project date and tracks project development, ensuring that everyone has access to the same data when planning projects.

Massachusetts

The Massachusetts DOT Aeronautics Division has established working relationships with both internal and external groups to leverage funds and services. For example, the agency's Highway Division has installed airport signs across the state using materials from its sign shop. The Massachusetts Bay Transportation Authority (MBTA), the public transportation system for eastern Massachusetts, has partnered with Aeronautics to install security cameras across the state at public use airports. The MBTA print shop has also printed pilot guides and provided conference display materials.

Aeronautics also works closely with the Massachusetts Port Authority (Massport) as well as with city officials, the U.S. Coast Guard, the Boston harbormaster and the Boston Planning and Development Agency (formerly known as the Boston Redevelopment Authority) on the development of a proposed seaplane base in Boston Harbor.

Nevada

Nevada DOT's aviation program receives a small amount of funding from the state Legislature every two years. Aviation only matches funds at NPIAS airports. This funding is linked to each airport grant.

The agency also had received funding through a state license plate program; however, the program was ended because the agency couldn't charge enough on registration fee schemes. There also was a potential to partner with fuel tax funds, but now aviation fuel tax is returned to each airport.

Related Resources

Below are two resources that address economics and funding in SASPs.

<u>National Guidance</u>

ACRP Report 121: Innovative Revenue Strategies—An Airport Guide, Lois S. Kramer, Steven Landau, Jeffrey Letwin and Michael Moroney, 2015.
Report available at http://nap.edu/22132
From the foreword: *ACRP Report 121: Innovative Revenue Strategies for Airports—An Airport Guide* is a resource that describes a broad range of tools and techniques for airport operators to improve revenue streams, recover costs or achieve operational efficiencies. The Airport Guide presents ways for airport operators to (1) develop new sources of revenue; (2) increase airport sponsor participation in tenant revenues; and (3) improve the planning, administrative process and management of existing airport businesses.

<u>State Guidance</u>

Economic Impact: Technical Report, South Carolina Aeronautics Commission, 2018.
https://dc.statelibrary.sc.gov/bitstream/handle/10827/26933/AC_Economic_Impact_Technical_Report_2018.pdf
From the introduction: In fall of 2017, the South Carolina Aeronautics Commission (SCAC) undertook a comprehensive research project to estimate the economic impact of 57 public commercial and general aviation airports in South Carolina. This report presents the results of that effort. Primary objectives for the project were as follows:

- Estimate the annual economic impacts that South Carolina realizes from the day-to-day operation of public commercial and general aviation airports.

- Estimate the annual economic impacts realized as a result of aviation related businesses located at each of the 57 study airports.

- Estimate the annual impacts realized throughout the state resulting from capital investment at the public airports.

- Estimate the economic impacts from the spending of visitors who arrive in South Carolina on privately owned general aviation aircraft and on scheduled commercial airline flights.

- Estimate annual state and local tax revenues contributed by airports and airport supported activities.

<u>Infrastructure and Safety</u>

Criteria for Prioritizing Infrastructure and Safety Projects

Survey respondents were asked to describe the criteria that their state aviation program uses to prioritize GA infrastructure and safety projects. Responses are summarized in the table below. Five states—Alaska, Arizona, Illinois, Montana and Nevada—rely solely on a priority rating

system (either the FAA system or a state system). The Illinois DOT respondent noted that when using this rating system, it focuses on a number at or below the threshold of federal AIP dollars. Colorado, Massachusetts and Oklahoma use a priority rating system along with other criteria such as the goals and objectives of the SASP.

Those states not using a priority rating system frequently use multiple criteria, such as safety and system preservation. The Minnesota DOT respondent noted that the agency has experimented with using set-aside amounts for certain types of projects that are needed but never rank well, such as mowers.

Prioritization Criteria for Infrastructure and Safety Projects		
Criterion	**State/Agency**	**Description**
FAA Priority Rating System	Colorado	N/A
	Illinois	Focuses on a number at or below the threshold of federal AIP funds.
	Massachusetts	Applied to state-of-good-repair projects (which accounts for most projects).
	Montana	Prioritizes safety and pavements.
	Nevada	Links to FAA AIP for local matching; does not have a separate defined criterion.
	Oklahoma	N/A
State Priority Ranking System	Alaska	N/A
	Arizona	Applies state system to requested projects in airport sponsors' five-year ACIP. (Safety is ranked as high.)
SASP Goals and Objectives	Colorado	N/A
	Oklahoma	N/A
Safety	Kansas	Primarily considers safety and operational needs.
	Louisiana	Primarily considers safety.
	Pennsylvania	Primarily considers safety and standards.
Other	Colorado	After rating system and SASP goals, uses pavement condition index data.
	Kansas	After safety, considers: • Equipment. • Vertical development. • Geographical location (a weighted score prioritizes rural projects over urban projects, depending on grant category).
	Louisiana	After safety, considers: • Preservation of existing system. • Upgrade to standards. • Capacity increases.

Prioritization Criteria for Infrastructure and Safety Projects		
Criterion	**State/Agency**	**Description**
Other	Massachusetts	Non-FAA-eligible projects not related to state-of-good repair; considers: • Justification. • Availability of local match. • Economic development potential. • Geographical equity.
	Minnesota	• Purpose of the project (such as safety or planning). • Airport classification within the SASP. • Component of the airport (such as a runway or taxiway). • Type of project (such as construction or master plan).
	New Hampshire	• Existing infrastructure before new infrastructure. • Projects where safety needs outweigh capacity needs.
	Pennsylvania	After safety and standards, considers: • System preservation. • Economic development. • Intermodal opportunities.
	Utah	• Runways. • Taxiways. • Aprons. • Restrooms.

Related Resource:

Aviation Program Needs and Project Priority Process, Chapter 9; Part 9, Aviation and Public Transportation; Title 70, Transportation; *Louisiana Administrative Code*, December 2005.
http://wwwsp.dotd.la.gov/Government/Misc%20Documents/Louisiana%20Administrative%20Code%20Title%2070.pdf?Mobile=1&Source=%2FGovernment%2F_layouts%2Fmobile%2Fview.aspx%3FList%3D7fbb726a-d8f1-45aa-b043-dbd89d6e20ac%26View%3D49d9d8f3-d10b-4a5e-afac-2360ac09b094%26CurrentPage%3D1
A discussion of the system used to prioritize facility improvement projects begins on page 253 of the document (page 257 of the PDF).

Prioritization Practices That Maximize Grant Funding

When asked to describe how their state's project prioritization practices maximize federal and state aviation grant funding, several states surveyed reported using matching state grants. Other respondents described a range of innovative practices and processes. Details about specific agency procedures follow:

- Twice each year, Alaska DOT&PF's Airport Performance Evaluation Board (APEB) meets to nominate and score capital projects based on a set of criteria. (Building projects and airfield projects each have their own criteria.) The scored APEB projects then go into a prioritized list based on available federal funding.

- Arizona DOT budgets so that it can match all FAA grants (which total $5 million annually) and then provide a state grant budget of $9 million annually. The agency always reserves a portion of its budget for GA airports.

- Colorado DOT often adapts its state grant funding priorities to match FAA funding priorities.

- Illinois DOT meets with each airport every fall before airport sponsors submit their five-year requested transportation improvement program. The state currently builds out a three-year program. Using the FAA's priority rating system, the state assigns requested projects to a given year, keeping safety considerations such as pavement condition numbers and direct access in mind. Multiyear phases carried throughout the three-year program are considered depending on total project cost and complexity. This process also takes into account the type of funding used, such as nonprimary entitlement (NPE), state apportionment or discretionary.

- As part of its project prioritization practices, Kansas DOT ensures there is a consistent balance between rural and urban needs.

- Massachusetts DOT phases projects efficiently and is always ready to accept discretionary funds for shovel-ready projects. The agency closely tracks carryover funds so that it doesn't lose money within the state's CIP program, even if it has to transfer monies between airports and ensure that they reimburse one another.

- Montana DOT tries to maximize FAA funds as much as possible, especially since the agency has a rather small loan and grant funding pool. Safety and pavements are Montana's highest priorities.

- Nevada DOT has no direct funding structures.

- New Hampshire DOT identifies projects needed for safety and rehabilitation of existing infrastructure.

- When programming state funding, the Oklahoma Aeronautics Commission partners with existing GA airports that are conducting NPE projects to use limited funding efficiently.

- Pennsylvania DOT relies heavily on FAA national priority ranking and state project selection criteria when programming funding.

- Utah DOT identifies projects related to components of the airport (runways, taxiways, aprons and restrooms).

Related Resource:

New Project: Data Acquisition and Protocols for Risk Management, ACRP Synthesis
11-03/Topic S01-19, start date not yet determined.
Project description at
http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4457
From the tentative scope: Airports and their infrastructures are subjected to risks emerging
from a variety of factors such as weather, wildlife and operational malfunctions, just to name
a few. Emerging risks revolve around critical physical infrastructures merging with
information technology, communications, and software/hardware vulnerabilities. …
Research is needed to provide a state-of-the-art survey of the existing tools for
characterizing common hazards found on airports and the risk management protocols in use
for identifying and carrying out decisions to minimize adverse consequences, and safety
management systems (SMS) applicability.

Land Use and Environmental Sustainability

Championing Sustainability

Respondents were asked to describe their state's efforts to champion land use and
environmental sustainability at GA airports in the following categories:

- Water conservation and water quality.
- Air quality.
- Reducing greenhouse gas emissions.
- Contaminated land.
- Nonlethal bird techniques.
- Habitat protection or enhancement.
- Use of construction materials.
- Management of hazardous or toxic products.
- Waste minimization, disposal and management.
- Recycling.
- Noise reduction.
- Aesthetics.
- Energy efficiency.
- Green building.

In general, responses to this section of the survey were limited. The Arizona DOT respondent
noted that the state did not currently prioritize land use and environmental sustainability. The
New Hampshire DOT respondent said the agency encourages airport sponsors to consider
sustainability evaluations as part of their airport master plan updates. However, limitations from
FAA advisory circulars or from the airport sponsors themselves have generally resulted in
evaluations of a building's electricity or heating needs only. States that did describe
sustainability efforts often partnered with other agencies (for example, the state environmental
protection program).

Colorado DOT, in partnership with FAA and with FAA funding, has created a statewide airport
sustainability program. As part of this project, Colorado developed tools and guidance for state
GA airports to develop sustainability plans for their facilities. See *Related Resource* on page 24
for information about the program and toolkit.

Survey responses about championing land use and environmental sustainability are provided below by category with the exception of air quality. None of the survey respondents described efforts in this area.

Water Conservation and Water Quality

Three state respondents described efforts related to water conservation and water quality. The Illinois DOT respondent reported that in some instances, these efforts are completed through the state Environmental Protection Agency (EPA) or state Department of Natural Resources. However, there is no ongoing coordination between Illinois DOT and the state EPA.

Other efforts reported by survey respondents were primarily related to stormwater management. Massachusetts DOT has funded investments in stormwater treatment at airport auto parking lots. The agency has also designed innovative bioretention areas. In Pennsylvania, airports must comply with the state's Department of Environmental Protection stormwater management requirements.

Greenhouse Gas Emissions Reduction

Two state respondents provided details about steps to reduce greenhouse gas emissions. In Utah, large airports currently use hybrid buses and shuttles. Massachusetts is planning to purchase alternative fuel maintenance equipment.

Contaminated Land

Five state respondents described efforts related to contaminated land issues. Many GA airports in Alaska were constructed during World War II and remain very contaminated. Alaska DOT&PF is aware of this issue but has not yet addressed it in the agency SASP. In Illinois, the state EPA addresses these issues; there is no ongoing coordination between Illinois DOT and the state EPA. Massachusetts DOT pays for fuel tank removal but not cleanup. According to the Pennsylvania DOT respondent, contaminated land is a rare occurrence in the state; when it is encountered airports coordinate efforts with the U.S. EPA. In Utah, contaminated land is typically used for an airport.

Nonlethal Bird Techniques

Respondents described several approaches meant to deter birds from areas near the airport. Illinois DOT, in partnership with the U.S. Department of Agriculture (USDA), has made a wildlife management program available to interested airports. Massachusetts DOT has funded propane cannons at a GA airport, and New Hampshire works with the state Department of Fish & Game and with USDA/Wildlife Services to identify appropriate, site-specific measures and techniques. In Utah, bird traps are used to catch and tag a bird, or to analyze the migratory pattern of a tagged bird. (The bird is then released further down its migratory path.) The Alaska DOT&PF respondent noted that the agency had funded protective measures for the Western High Arctic Brant through its SASP in the past, but those practices are currently funded separately.

Habitat Protection or Enhancement

Three state respondents described efforts related to habitat protection or enhancement near GA airports. The Illinois DOT respondent again referred to the wildlife management program developed in partnership with the USDA. Massachusetts DOT works closely with state agencies that regulate protected areas or species. Utah DOT creates habitat for wildlife other than birds on land in the runway protection zone.

Use of Construction Materials

Four state respondents described efforts related to the use of construction materials. In Louisiana, the Aviation Division is researching the use of whitetopping to increase the life span of pavements. Massachusetts DOT uses alternative asphalt mix in appropriate areas at airports. Minnesota DOT has tried to use state highway specifications for pavement instead of FAA specifications to attain better bids on projects since more contractors are familiar with state highway specifications. In New Hampshire, many projects use reclaimed materials, when appropriate.

Management of Hazardous or Toxic Products

Three state respondents provided details related to managing hazardous or toxic products. In Illinois, measures are completed by the state EPA, with no ongoing coordination between agencies. Massachusetts DOT has funded Spill Prevention, Control and Countermeasure (SPCC) plans to prevent an oil spill or control a spill once it has occurred. Utah DOT has established strict regulations related to preventing fuel spills and shipping hazardous materials. Paint disposal is also monitored; drainage systems collect and analyze paint at individual buildings.

Waste Minimization, Disposal and Management

None of the agencies surveyed provided details about agency efforts to minimize, dispose of or manage waste. These efforts are managed by airports in Massachusetts and regulated by local municipalities in Pennsylvania.

Recycling

Four survey respondents provided information about recycling efforts. Recycling is largely in place at most Massachusetts airports, but programs vary from facility to facility. Similarly, recycling bins are present at individual airports in Utah, but the state does not have a systemwide program. The Nevada DOT respondent said there are two county-mandated recycling programs only, and in Pennsylvania, local municipalities regulate recycling efforts.

Noise Reduction

Survey respondents provided limited details about mitigating the impact of noise at airports. Illinois DOT's approach is in accordance with FAA noise programs. Massachusetts DOT funds the state share of many grants and studies under Federal Aviation Regulation (FAR) Part 150, designated to mitigate the adverse impacts of aviation noise, but the airports establish noise mitigation measures within their flight paths.

Some airports in both New Hampshire and Utah employ voluntary noise abatement procedures. In New Hampshire, this topic is usually addressed in a more substantial way during environmental assessments. The Utah DOT respondent noted that noise isn't a significant issue in the state; most complaints about noise come from areas near military bases.

In Alaska and Minnesota, noise is generally only a problem in large metropolitan areas. Since most of Alaska's rural aviation system serves as the main or only mode of transportation, noise is not upsetting to residents, according to the Alaska DOT&PF respondent. The Metropolitan Airports Commission (MAC) in Minnesota, which operates Minneapolis-St. Paul International Airport and six GA airports, has an extensive noise mitigation program. Airport zoning standards are required at all Minnesota airports, and while noise reduction is not a goal of zoning, it is a benefit.

Related Resource:

MAC Noise Program Office, Metropolitan Airports Commission, undated.
http://www.macnoise.com
This web site provides general information about the MAC's efforts to reduce the impact of aircraft noise, including details about the Noise Mitigation Program and noise-reducing modifications available to homes, apartment buildings and schools.

Aesthetics

Three respondents described considerations given to aesthetics in GA facilities because, as one respondent noted, the image of airport facilities reflects the image of the community. In Massachusetts, the Statewide Airport Administration Building (SAAB) program provides support for airport improvements by constructing or renovating administration buildings to meet accessibility needs, building more airport management space, and providing conference rooms, restaurant shells and other facilities to the public. Through the SAAB program, the agency has designed a standard model for terminal buildings to showcase these facilities as the gateway to Massachusetts for the flying public. Utah DOT also takes aesthetics very seriously, ensuring that signage within a facility is correct and that public amenities are inviting. Currently Minnesota DOT is conducting a survey on airport hospitality to determine what features, amenities and services are important to pilots.

Energy Efficiency

Several respondents reported efforts to consider energy efficiency in GA airports, in some cases through specific measures but also through project planning. Three states either use LED lighting equipment (Louisiana and Utah) or promote its use (Oklahoma). However, the Utah respondent noted that LED lighting isn't always an efficient alternative if a building with outdated infrastructure doesn't support LED equipment.

GA facilities in Utah also use solar panels, and in Louisiana, GA airports use solar-powered taxiway reflectors.

Massachusetts DOT funded a report for the Volpe National Transportation Systems Center (Volpe Center) to identify and prioritize measures that help GA airports reduce their energy consumption. (Additional information about this report was not available at the time of publication of this Preliminary Investigation.) New Hampshire DOT has included energy efficiency evaluations as part of airport master plan updates, while Pennsylvania DOT considers energy efficiency in the state's project ranking. The Alaska DOT&PF commissioner encourages department staff to think innovatively about energy efficiency. The agency's Maintenance staff has received several awards for innovative solutions from the National Association of State Aviation Officials (NASAO).

Green Building

Two DOTs provided information about green building initiatives at GA airports. In Massachusetts, the SAAB program uses both modular design and efficient building materials, and offers a provision to install future solar capabilities. Pennsylvania DOT considers green building measures in the state's project ranking.

Related Resource:

Colorado Airport Sustainability Program, Aeronautics, Colorado Department of Transportation, 2016.
https://www.codot.gov/programs/aeronautics/CO_Airport_Sustainability_Program
This web site provides resources to help Colorado GA airports prepare custom plans for making their facilities environmentally, financially, operationally and socially sustainable. The site includes links to a toolkit user manual, a checklist to help airports complete a facility profile, and case studies that feature completed plans from three airports.

Promoting Land Use Compatibility

Respondents were asked to describe how their state promotes compatible land uses within the airport influence area (the land within 2 miles of a public airport). State and local zoning standards and ordinances regulate land use in four states:

- Minnesota has state zoning standards for all airports in the state, which is required for airports to receive state and federal funding.

- Oklahoma Aeronautics Commission oversees the state's zoning authority to protect public use airports, which allows the agency to approve or deny applications for structures within surfaces governed by Federal Regulation Title 14, Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace (Part 77), or the runway protection zone.

- In New Hampshire, municipalities with a public use airport are required by state statute to establish compatible land use zoning ordinances or the state will impose ordinances on them. All municipalities have voluntarily established their own compatible land use ordinances. The state recently completed a study of GA airports in its Block Grant Program to develop an interactive tool "to quickly evaluate the allowable construction heights of structures within airports' protected airspace surfaces" (see **Related Resources** below).

- Land use regulation in Pennsylvania is under the jurisdiction of local municipalities. The respondent cited a 1996 land use compatibility guide for airports that provides information about compatible land use and activities (see **Related Resources** below).

Educating airport sponsors and community leaders is the primary practice in four other states:

- While Illinois DOT currently doesn't fund land use compatibility plans for individual airports, it does encourage airport sponsors to enact local land use zoning and comply with FAA criteria. Airspace compatibility is managed through state legislation for the vast majority of airports in Illinois.

- Louisiana Department of Transportation and Development provides land use regulation guidance to airport sponsors, which they use to create compatible land use and height zoning ordinances.

- Montana DOT promotes compatible land use information to federally funded airports during CIP presentations.

- Utah DOT regularly meets with mayors in area communities, providing them with two publications about land use regulations in the state (see **Related Resources** below).

Colorado doesn't have a formal process for compatible land use at the state level other than obstruction protection, and Nevada DOT encourages GA airports to comply with federal standards. Arizona DOT will be programming for a land use study in 2020, which will address promotion efforts in the state.

Related Resources

New Hampshire

Airport Approach Plan Study, Aeronautics Division, New Hampshire Department of Transportation, 2018.
https://www.nh.gov/dot/org/aerorailtransit/aeronautics/airport-plan-study.htm
From the web site: In 2018, the Bureau of Aeronautics, working with its consultant Jacobs Engineering Group and under a grant from the Federal Aviation Administration (FAA), completed a much-needed project to identify the buildable areas in the vicinity of some of its general aviation airports in compliance with FAA's land-use compatibility grant assurance. The deliverables included an interactive, web-based system that allows the user to point to a location near one of these airports and compute the maximum building height while still staying underneath the airport's protected airspace.

Pennsylvania

The Transportation and Land Use Toolkit, Pennsylvania Department of Transportation, March 2007.
https://www.penndot.gov/Doing-Business/Aviation/Planning%20and%20Zoning/Documents/Pennsylvania%20Airport%20Land%20Use%20Toolkit.pdf]
Information about compatible land uses at airports begins on page 27 of this toolkit (page 32 of the PDF).

Pennsylvania Airport Land Use Compatibility Guidelines, Bureau of Aviation, Pennsylvania Department of Transportation, March 1996.
https://www.penndot.gov/Doing-Business/Aviation/Planning%20and%20Zoning/Documents/Pennsylvania%20Airport%20Land%20Use%20Compatibility%20Guidlines.pdf
These guidelines provide municipalities, counties and airports with information that identifies "land uses and activities that are considered compatible around an airport."

Utah

Airports and Land Use: An Introduction for Local Leaders, Utah Department of Workforce Services, August 2018.
http://ruralplanning.org/assets/airport-land-use-guide---web.pdf
Written for Utah's rural communities, particularly those that operate or want to operate an airport, this document "provides a brief introduction to key considerations that local leaders need to understand about land use planning for airports. These considerations are vital for maintaining the long-term benefits of operating an airport and mitigating burdens on the surrounding community. It draws upon the guidelines and best practices promoted by the U.S. Federal Aviation Administration (FAA), the Utah Department of Transportation Division of Aeronautics (UDOT), and leaders in the aviation and aeronautics industries." Land use planning templates for small- and medium-sized airports are included in the guide.

Compatible Land Use Planning Guide for Utah Airports, Wasatch Front Regional Council, Utah Department of Transportation, December 2000.
https://www.udot.utah.gov/main/uconowner.gf?n=200411180926131
This guide was developed for airport sponsors as a "quick reference source for airport land use issues." The guide addresses safety and airport noise along with planning and zoning issues.

Addressing Climate Change

Three states—Alaska, Massachusetts and New Hampshire—identified their state aviation program's top priorities for addressing the implications of climate change. While Alaska DOT&PF hasn't completed an in-depth analysis of climate change across its aviation system, the agency respondent noted that erosion, permafrost and settlement are significant concerns statewide. Erosion has resulted in a number of airports needing to relocate in the near term due to their coastal locations. Design sections within the agency are addressing permafrost and settlement issues on a case-by-case basis. Respondents from Massachusetts and New Hampshire DOTs reported stormwater runoff, energy efficiency and resiliency measures as priorities. Survey responses are summarized in the table below.

Priorities for Addressing Climate Change			
	Alaska	**Massachusetts**	**New Hampshire**
Priority 1	Address erosion, where a number of airports in coastal areas have needed to be relocated.	Help airports identify energy efficiency measures.	Ensure airports can manage increasing levels of stormwater runoff (for example, by using more pervious pavements), winter precipitation and erosion during weather events.
Priority 2	Address permafrost and settlement on a case-by-case basis.	Develop resiliency measures based on airport need, such as generators or solar power devices that could run off the grid.	Develop sufficient navigational aids to address utility of runways during inclement weather.
Priority 3	N/A	Coordinate and integrate efficiency and resiliency measures with other state agencies' plans and programs.	Develop climate adaptation plans for each airport.

Related Resources

Project in Progress: Revolving Funds for Sustainability Projects at Airports, ACRP Project 02-77, start date: June 5, 2017; expected completion date: December 5, 2018.
Project description at http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4235
From the objective: The objective of this research is to develop guidance for airports to establish and make use of a dedicated revolving fund for sustainability projects. This guidance should include:

- A minimum of five case studies of revolving funds for sustainability projects that are in place. They can include domestic or international airports and other industries. Include how the applicable revolving funds would be transferrable to U.S. airports;

- Description of potential funding sources and mechanisms for the revolving fund;

- Development of a process flow diagram(s) that identifies the key decision-making steps necessary to establish and make use of the revolving fund;

- Description of effective performance tracking mechanism(s); and

- Education and engagement approaches and tools for internal and external stakeholders to achieve consensus.

Project in Progress: Florida Airport Sustainability Tracking/Monitoring System, Florida Department of Transportation, start date: February 7, 2017; expected completion date: September 30, 2018.
Project description at https://rip.trb.org/View/1454012
From the project description: This project, based on the outcomes of Airport Cooperative Research Program (ACRP) and National Cooperative Highway Research Program (NCHRP) studies in related areas, proposes to explore the unique needs of Florida's airport system and produce a Florida Airport Sustainability Performance Tracking/Monitoring System that can be easily used by airport sponsors and related transportation agencies.

ACRP Synthesis 93: Sustainability's Role in Enhancing Airport Capacity, Oana Leahu-Aluas, Damon Fordham, Mia Stephens and Cian Fields, 2018.
Report available at https://www.nap.edu/catalog/25159/sustainabilitys-role-in-enhancing-airport-capacity
From the preface: This report compiles information and examples that successfully demonstrate the value of building sustainability concepts into capacity-enhancing projects and describes additional resources and tools that provide guidance on how to select, apply, and communicate sustainability measures. The intended audience is airport leaders and their teams working on capacity-enhancing projects. The report highlights that sustainability efforts often build on themselves; lesson learned from one initiative are carried through to the next, and this progressive learning process can enhance sustainability's role in capacity-enhancing projects over time. Personnel from seven commercial service airports were interviewed (a) to learn how airports integrate sustainability with capacity-enhancing projects, (b) to identify the resulting benefits, and (c) to understand how airport staff communicate their sustainability efforts.

ACRP Synthesis 69: Airport Sustainability Practices—Drivers and Outcomes for Small Commercial and General Aviation Airports, C. Daniel Prather, 2016.
Report available at http://nap.edu/23486
From the preface: Over the last several years airport operators have introduced green initiatives in order to improve the overall sustainability of their airports. Drivers could include financial viability, staffing considerations, or other social or environmental factors. There is a significant compilation of sustainability practices from larger airports, but a less robust description of initiatives for smaller airports. This report focuses on drivers and outcomes of green initiatives undertaken at small commercial and general aviation airports. Information used in this study was acquired through a review of the literature and survey or interviews with airport operators at small and general aviation airports.

ACRP Synthesis 66: Lessons Learned from Airport Sustainability Plans, Renee Martin-Nagle and Adam Klauber, 2015.
Report available at http://nap.edu/22111
From the summary: This synthesis presents the findings of ACRP Synthesis S14-02-11, Lessons Learned from Airport Sustainability Plans, a TRB project to analyze and provide a benchmark for sustainability initiatives at smaller U.S. airports. The report included a literature review, a web-based survey of 31 U.S. airports with a 100% response rate, and telephone interviews with airport personnel at 12 selected facilities. The synthesis presents and analyzes the survey responses and provides information gained from the telephone interviews in the form of case examples.

ACRP Report 119: Prototype Airport Sustainability Rating System—Characteristics, Viability and Implementation Options, Carol Lurie, Emmanuelle Humblet, Chris Steuer and Kristin Lemaster, 2014.
https://crp.trb.org/acrp0715/wp-content/themes/acrp-child/documents/066/original/ACRP_119_Prototype_Airport_Sustainability_Rating_System_Characteristics_Viability_and_Implementation_Options.pdf
From the foreword: *ACRP Report 119: Prototype Airport Sustainability Rating System—Characteristics, Viability and Implementation Options* identifies the features of a sustainability rating system specifically developed for airports, identifies options for implementing the rating system and a certification program, and evaluates the viability of their implementation and adoption. The report provides a framework upon which a comprehensive airport-centric rating system can be built should the airport industry decide it would be beneficial for assessing its sustainability performance.

ACRP Report 27: Enhancing Airport Land Use Compatibility, Volume 1: Land Use Fundamentals and Implementation Resources, Stephanie Ward, Regan Massey, Adam Feldpausch, Zachary Puchacz, Christopher Duerksen, Erica Heller, Nicholas Miller, Robin Gardner, Geoffrey Gosling, Sharon Sarmiento and Richard Lee, 2010.
Report available at http://nap.edu/22960
From the foreword: *ACRP Report 27: Enhancing Airport Land Use Compatibility* presents a comprehensive account of issues associated with land uses around airports. The report is a comprehensive resource to both airports and local jurisdictions near airports. Volume 1 provides guidance to help protect airports from incompatible land uses that impair current and future airport and aircraft operations and safety. Volume 2 details 15 case studies that targeted a wide range of airports and land use issues. The case study sites include large commercial service, military, and general aviation airports and were geographically diverse. Volume 2 also offers states and local governments examples and a common basis for establishing zoning that protects the public interest and investment in airports. Volume 3 includes aircraft accident data, a framework for an economic assessment of airport costs, and an annotated bibliography. Volumes 1 and 2 are printed volumes. Volume 3 is located at www.trb.org.

Related Resource:

> **ACRP Report 27: Enhancing Airport Land Use Compatibility, Volume 2: Land Use Survey and Case Study Summaries**, Stephanie Ward, Regan Massey, Adam Feldpausch, Zachary Puchacz, Christopher Duerksen, Erica Heller, Nicholas Miller, Robin Gardner, Geoffrey Gosling, Sharon Sarmiento and Richard Lee, 2010.
> Report available at http://nap.edu/17633
> This volume provides the case studies described in the foreword from Volume 1.

> *Note*: References and links to the online-only elements of Volume 3 are available in the description of Volume 1 (see http://www.trb.org/Publications/Blurbs/163344.aspx):
>
>> Volume 3: Additional Resources is made up of three individual components that collectively contain some of the resource documents developed to support the information explored in Volume 1. Volume 3 includes additional detail on specific topics of aircraft accident data and third party risk, and on the economic methodology for assessing the costs associated with incompatible land uses. Volume 3 also includes an annotated bibliography that contains approximately 300 entries related to airport land use compatibility.

ACRP Synthesis 10: Airport Sustainability Practices, Fiona Berry, Sarah Gillhespy and Jean Rogers, 2008.
Report available at http://nap.edu/13674
From the summary: The report documents a range of airport sustainability practices gathered from a literature review and web-based survey. It specifically targets airport operators and provides a snapshot of airport sustainability practices across the triple bottom line of environmental, economic and social issues.

Mobility and Access

Respondents were asked to describe how their state aviation program has encouraged the incorporation of multimodal access in to and out of GA airports for the following transportation modes:

- Roadways.
- Transit.
- Walking and bicycling.
- Rail.
- High-speed rail.
- Other modes.

In general, Louisiana Department of Transportation and Development addresses these multimodal access areas during CIP meetings with airport sponsors, while New Hampshire participates in regional planning commissions' debate into surface transportation improvement prioritization. When feasible, Nevada DOT combines airport projects with transportation projects (for example, pavement projects).

Several states provided additional details about their involvement in roadways, transit, walking and bicycling, and rail. Their responses are summarized in the following sections.

Roadways

Seven states provided details about efforts to encourage multimodal access through local and state roadways. Signage that ensures easy access to an airport was a common response as were road access and meetings or partnerships with other organizations. Survey responses are summarized in the table below.

Mobility and Access: Roadways		
Criterion	**State/Agency**	**Description**
Meetings/ Partnerships	Illinois	Coordinates with the state Economic Development Program, state planning funds and metropolitan planning organizations (MPOs).
	New Hampshire	Participates in regional planning commissions' debate into surface transportation improvement prioritization.
	Oklahoma	Encourages airports to partner with local entities such as the county, city or tribal entities to fund roads. (State funding has not funded roads as part of the airport CIP.)
Road Access	Illinois	Coordinates with the Truck Access Route Program (TARP), which helps local governments upgrade roads to accommodate 80,000-pound truck loads.
	Minnesota	Advises DOT's highway planners on appropriate roadway locations (outside of the runway protection zone) and when to file FAA Form 7460-1, Notice of Proposed Construction or Alteration, with the FAA.
Signage	Massachusetts	Installed signs that direct people to the local airports in all communities across the state.
	Pennsylvania	Coordinates airport signage.
	Utah	Ensures the public has easy access to airports by making the corridors that connect economic activity centers to airports as straight and simple as possible.

Transit

Three states provided more information about transit (such as taxis, rideshare opportunities, buses or light rail) as an alternative transportation mode. State efforts are generally focused on planning rather than specific projects:

- Illinois DOT coordinates with the Illinois Transportation Enhancement Program (ITEP), state planning funds and MPOs. (ITEP, a federal grant program, provides funding for community-based projects that promote and develop alternative transportation options and "enhance the transportation experience by improving the cultural, historic, aesthetic and environmental aspects of [[Illinois'] transportation infrastructure.")

- In Massachusetts, transit alternatives are established by local airports.

- Utah provides light rail access to Salt Lake City International Airport.

Walking and Bicycling

Five states described specific efforts to support walking and bicycling to and from GA airports as an alternative mode of transportation:

- As with other alternative transportation modes, Illinois participates in planning and coordination efforts with ITEP, state planning funds and MPOs.

- Massachusetts DOT funds the Complete Streets initiative, which designs streets that enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders. Some airports offer courtesy bicycles for users to travel to and from nearby communities.

- Nevada DOT supports bike and pedestrian programs through the Safe Streets initiative and bike trails.

- Pennsylvania DOT supports walking and bicycling where they are locally mandated for airport improvement local permit approval.

- While most airports in Utah are rural, pedestrian and bicyclist access is provided to some airports.

Rail

Two states described specific efforts to incorporate rail transportation (commuter rail and freight) in to and out of GA airports:

- Illinois coordinates efforts through the Rail Freight Loan Program, ITEP, state planning funds and MPOs. (The Rail Freight Loan Program "provide[s] capital assistance to communities, railroads and shippers to preserve and improve rail freight service in Illinois. … The primary role of the program is to facilitate investments in rail service [for] projects that achieve statewide economic development.")

- Rail service arrangements in Massachusetts are established by local airports.

Related Resources

Project in Progress: Integrating Airport Ground Access and Metropolitan Surface Transportation Planning Efforts, ACRP Project 03-43, start date: April 27, 2017; expected completion date: December 31, 2018.
Project description at http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4241
From the background: Public-use airports, metropolitan planning organizations (MPOs), and local land-use/transportation planning agencies all have independent and interrelated planning processes bound by legal and policy requirements to ensure compatibility and must work cooperatively to solve joint transportation challenges in the most effective and efficient manner. While efforts have been made to improve modal planning coordination, there are limited examples of success with respect to aligning airport ground access planning and MPO surface transportation planning processes. Moreover, there is little practitioner guidance for fostering and encouraging meaningful cooperation during the planning process. Research is needed to provide airports and surface transportation planning agencies with guidance and tools to integrate airport ground access and surface transportation planning efforts.

ACRP Report 118: Integrating Aviation and Passenger Rail Planning, Matthew Coogan, Daniel Brand, Mark Hansen, Hanan Kivett, Jorg Last, Richard Marchi, Megan Smirti Ryerson, Marilyn Jordan Taylor and Louis Thompson, 2015.
Report available at http://nap.edu/22173
From the foreword: *ACRP Report 118: Integrating Aviation and Passenger Rail Planning* identifies planning process options, funding challenges and potential actions to improve integration of rail services with airports, particularly in congested corridors. The report identifies the challenges involved in a variety of institutional settings in different regions and develops ways to better integrate inter-agency planning processes. It identifies specific site planning and service coordination actions to promote air rail transfers, defines the data and analysis

capabilities needed to determine the feasibility and effectiveness of improved integration of air and rail services, and demonstrates the application of methods and tools to support integrated planning for air and rail services and decision making. Key issues covered include rail and air in a competitive and complimentary mode.

San Diego Airport Multimodal Accessibility Plan, San Diego Association of Governments, March 2012.
http://www.sandag.org/uploads/publicationid/publicationid_1644_14238.pdf
From page 2-1 of the plan: The purpose of this plan was to develop ground access transportation improvements at specific airports in the San Diego region, based on the RASP [Regional Aviation System Plan] analysis and findings. Ground access alternatives were developed to coincide with the various scenarios developed as part of the RASP study. The AMAP [Airport Multimodal Accessibility Plan] ground transportation improvements included roadway and highway modifications, reconfiguration of existing and planned transit facilities, new express bus service and modifications to existing or proposed local bus service.

Related Resource:

> **Airport Multimodal Accessibility Plan**, San Diego Association of Governments, undated.
> http://www.sandag.org/index.asp?projectid=364&fuseaction=projects.detail):
> *From the web site*: SANDAG [San Diego Association of Governments] and the San Diego County Regional Airport Authority are engaged in a two-pronged process to plan for improved infrastructure that will be needed to accommodate air traffic in the region, as well as surface transportation that will serve airport facilities.
>
> Senate Bill 10 of 2007 (SB 10) requires airport multimodal planning to be conducted and coordinated by SANDAG and the Authority. The main planning provisions of SB 10 include the development of a Regional Aviation Strategic Plan (RASP) and an Airport Multimodal Accessibility Plan (AMAP).

Performance Metrics, Trends and Needs

Use of Performance Metrics

Respondents were asked to describe the performance metrics used to track federal and state investments in aviation. Pennsylvania DOT's recently completed SASP update included a return on investment (ROI) analysis at six airports. Results indicated a high to medium return: Airports with a high ROI had more quantitative impacts (such as jobs and activity), while airports with a medium ROI had qualitative impacts (such as the ability to attract activity).

In 2015, Alaska DOT&PF created performance metrics as part of its SASP. The agency has also automated scorecards that can be run at any time to assess components of the system. See *Related Resource* on page 33 for more information about the agency's performance measures.

Two agencies that are either planning to update or currently updating their SASP have plans to include performance metrics. Utah DOT is creating a SASP that will track dollars that airports generate (dollars spent and tax revenue generated). The economic impact of each airport on its community and on the state will be monitored, allowing Utah DOT to calculate ROI accurately. Illinois DOT uses pavement condition information to monitor performance. The respondent said that knowing the limitations of using these metrics to monitor performance, especially as they

relate to the state's Long Range Transportation Plan goals, the agency may complete a SASP to establish performance measures that are better integrated with other multimodal plans and initiatives.

While Minnesota DOT doesn't have a formal performance measures system directly tied to investment, the agency does track dollars spent and compares them year over year. Survey results are summarized below.

Use of Performance Metrics		
Metric	**State**	**Description**
Monitor Grant Performance	Arizona	• Time to process applications. • Number of grants closed monthly.
Monitor Pavement Condition	Illinois	Pavement condition information monitored based on aircraft and aircraft operations.
Analyze Return on Investment	Pennsylvania	N/A
Other Practices	Alaska	Automated scorecards assess system components.
	Massachusetts	• Projects completed on time and on budget. • FAA budget versus actual funds received. • Percent of state bond cap spent annually. • Number of based aircraft. • Aircraft registrations processed.
	New Hampshire	Number of projects completed on time and on budget.

Related Resource:

Evolution of the Alaska Aviation System: Classifications and Performance Measures, Alaska Department of Transportation and Public Facilities, September 2015.
http://www.alaskaasp.com/media/1671/1_task_2b_reporttask_2b_report_final.pdf
Performance measures are provided for land airports (not seaplane bases) and are determined by airport classification. Two primary criteria are used in this study:
- Airport Design Standards Index, which measures the extent to which airports comply with FAA safety and design standards and regulations. Eight factors, including runway safety areas and runway protection zones, are examined.
- Airport Service Index, which evaluates how well airports classified as regional and community (off- and on-road) serve their markets. Performance measures include runway length, taxiway type, fuel sales and passenger shelters.

Other metrics considered include weather reporting and observation, pavement condition, clear approach paths, visual glide slope indicators and seasonal airport closure.

Improving General Aviation Airports

Respondents were asked to identify the three most significant trends their state is monitoring that could improve GAs for the airport and/or its customers. Nine agencies responded to this portion of the survey, providing a range of trends that included workforce shortages, airport capacity improvements and the economic impact of airports. Survey responses are summarized below.

Trends for Improving General Aviation Airports			
State/Agency	**Trend 1**	**Trend 2**	**Trend 3**
Alaska	Funding for Automated Weather Observing System (AWOS): The agency is closely monitoring and coordinating with national staff to include new language that would fund the development and maintenance of future weather systems.	Deficiency tracking: DOT&PF is using airport need data to assess deficiency trends across the department and system. New reporting tools will roll out in fall 2018 and will assist planners in project prioritization.	Economic trends: The agency is updating its 2011 economic impact study to see what aviation-related trends have changed in the past seven years.
Louisiana	Funding: Shrinking federal, state and local budgets create financial pressure on airports.	Pilot shortage: A growing pilot population is needed to support growth and revenue in the aviation industry.	Aircraft storage: Adequate hangar space at airports to attract new based aircraft users.
Massachusetts	Partnerships with local businesses and success stories about their effects on the airport and local communities.	N/A	N/A
Minnesota	Drones.	Workforce shortage (including pilots, mechanics and FBO operators).	Aging infrastructure.
Nevada	New programs (e.g., accounting for wildlife near rural airports).	Negotiations with military to better use or share corridors for commerce.	Legislation to permanently establish new programs through educational outreach.
New Hampshire	Significant reduction in state aircraft registration fees.	Progress of FAA's Piston Aviation Fuels Initiative.	Pilot training initiatives (locally and nationally).
Oklahoma	Improved terminal building facilities.	24-hour self-service fuel.	Social media use to promote the airport.
Pennsylvania	Economic impact changes.	Increase in design aircraft operations for airfield capacity improvements.	Increase in based aircraft for hangar improvements.

Trends for Improving General Aviation Airports			
State/Agency	**Trend 1**	**Trend 2**	**Trend 3**
Utah	Tracking tourism traffic (e.g., hunting, skiing) at rural airports.	Tracking number of operations and money spent off airports.	Tracking businesses that may not be airport-driven or directly using an airport, but need an airport to exist.

Emergency Management

When asked to identify their state's top three priorities for bringing airports back online following a significant incident, including a natural disaster, respondents from most states provided information about emergency management priorities and practices. The leading priorities were power restoration and infrastructure safety. Respondents from three states reported that their agencies coordinated recovery efforts with emergency management agencies. The Minnesota DOT respondent reported that while the agency supports GA airports in recovery efforts, emergency management is managed locally. The table below summarizes survey responses.

Priorities for Post-Disaster Recovery Efforts			
State/Agency	**Priority 1**	**Priority 2**	**Priority 3**
Louisiana	Provide support for infrastructure, such as generators (for power and lighting), runways and taxiways.	N/A	N/A
Massachusetts	Work closely with the emergency management agencies and utility companies to restore power.	N/A	N/A
Nevada	Coordinate with emergency management agencies.	N/A	N/A
New Hampshire	Return runway(s) to service.	Return navigational aids to service.	Return aviation fuel system to service.
Pennsylvania	Work with Pennsylvania Emergency Management Agency.	Provide funding for snow removal equipment (most frequent significant event).	Provide state funding match to airport sponsors' flood damage insurance for facility reconstruction.
Utah	Clear a helicopter landing pad.	Use drones to inspect runways and asphalt surfaces for damage. Simultaneously inspect gas, water and power lines.	Inspect fences for damage.

Outreach, Intergovernmental Coordination and Implementation

In the final section of the survey, respondents were asked to describe outreach practices to engage stakeholders in a state aviation program along with efforts to collaborate or coordinate with federal, state and local agencies. Specifically, respondents were asked to:

- Identify stakeholders.

- Describe practices and strategies used to engage stakeholders.

- Discuss collaboration and coordination efforts to engage federal, state and local agencies.

- Identify practices and strategies used to support intergovernmental coordination.

- Describe mechanisms, systems and tools used to ensure implementation of a SASP's goals.

Twelve states—Alaska, Arizona, Illinois, Louisiana, Massachusetts, Minnesota, Montana, Nevada, New Hampshire, Oklahoma, Pennsylvania and Utah—provided information for this portion of the survey. Responses from these agencies are summarized in the following tables.

Alaska Department of Transportation and Public Facilities	
Topic	**Description**
Stakeholders	General public, Aircraft Owners and Pilots Association, Recreational Aviation Foundation, Alaska Air Carriers Association, and other governmental and state agencies.
Stakeholder Engagement Practices and Strategies	- Attends a monthly industry council meeting that comprises FAA sections, aviation trade associations and air carriers groups from across the state. - Has developed a public involvement plan. - Hosts work groups that address aviation-related topics. Members include representatives from various associations. Work groups are funded through the system plan.
Intergovernmental Collaboration and Coordination	Occurs with many issues on many levels.
Intergovernmental Coordination Practices	Annually reviews and strategizes key issues and changes that occur across the system.
Plan Implementation Tools and Methods	- Public involvement plan. - Process used by the agency's Airport Performance Evaluation Board for capital project prioritization. - New inspection rating system and program. - Centralized aviation database, which is expanding through the current phase of the SASP. - Other practices.

Arizona Department of Transportation	
Topic	**Description**
Stakeholders	Airport sponsors; FAA ADO; state Legislature; Arizona Airports Association (AzAA); pilot associations; FBOs; and other groups.
Stakeholder Engagement Practices and Strategies	• Maintains a state aeronautics web site. • Actively participates in AzAA. • Has produced a quarterly newsletter. (Note: Publication of the newsletter has been suspended for budgetary reasons.) • Hosts an annual meeting with the state Legislature.
Intergovernmental Collaboration and Coordination	Attends an annual planning meeting with each eligible airport in the state. These meetings are hosted by the FAA ADO.
Intergovernmental Coordination Practices	Attends regular staff meetings within Arizona DOT.
Plan Implementation Tools and Methods	The plan is currently being revised. (*Note*: Arizona DOT issued an updated SASP in October 2018. See **Related Research and Resources** on page 45.)

Illinois Department of Transportation	
Topic	**Description**
Stakeholders	Airport sponsors, FAA, governor's office, local planning organizations and state aviation trade associations.
Stakeholder Engagement Practices and Strategies	• Participates in state aviation industry events. • Attends annual transportation improvement program meetings with each airport sponsor and its stakeholders.
Intergovernmental Collaboration and Coordination	• *Airport sponsors*: Occurs through improvement program development, planning, programing, project implementation and other meetings. • *FAA*: Is dictated by the State Block Grant Program agreement. • *State agencies*: Occurs on a case-by-case basis. • *Local planning organizations*: Occurs on a case-by-case basis.
Intergovernmental Coordination Practices	• *FAA*: Is dictated by the State Block Grant Program agreement. • *State agencies*: Occurs on a case-by-case basis. • *Local planning organizations*: Occurs on a case-by-case basis.

Illinois Department of Transportation	
Topic	**Description**
Plan Implementation Tools and Methods	• DOT has not completed a SASP since the early 1990s. Currently, it measures pavement conditions at each airport every three years. The agency is starting a continual SASP process and developing the scope for a SASP report with economic analysis; the report's goals, objectives and policies will align with the overarching goals of the Illinois Long Range Transportation Plan (see **Related Research and Resources** on page 50).

Louisiana Department of Transportation and Development	
Topic	**Description**
Stakeholders	Airport sponsors, airport management, FAA, aviation consultants and aviation educational institutions.
Stakeholder Engagement Practices and Strategies	• Conducts surveys. • Gives presentations. • Holds meetings and conference calls.
Intergovernmental Collaboration and Coordination	• Hosts conferences. • Holds quarterly meetings. • Conducts monthly conference calls.
Intergovernmental Coordination Practices	• Conducts surveys. • Gives presentations. • Holds meetings and conference calls.
Plan Implementation Tools and Methods	DOT holds capital improvement planning meetings with stakeholders and staff.

Massachusetts Department of Transportation

Topic	Description
Stakeholders	Airport stakeholders; state legislators; Massachusetts Office of Travel and Tourism; industry organizations, such as Aircraft Owners and Pilots Association and National Business Aviation Association; and the general public.
Stakeholder Engagement Practices and Strategies	• Conducts surveys and interviews. • Holds public meetings. • Shares information (e.g., mail executive summaries to stakeholders).
Intergovernmental Collaboration and Coordination	• Includes the FAA as part of the project management team. • Briefs state agencies (such as the Massachusetts Office of Business Development and Massachusetts Office of Travel and Tourism) and state legislators.
Intergovernmental Coordination Practices	• DOT sends executive summaries to legislators. • DOT holds an Aviation on the Hill Day with state legislators at the Statehouse. • Airport managers share studies with local representatives.
Plan Implementation Tools and Methods	The state aviation program does not have a formal process for ensuring proper implementation of its SASP's goals, objectives and policies.

Minnesota Department of Transportation

Topic	Description
Stakeholders	Airport sponsors, FAA, Metropolitan Airports Commission, MPOs, regional development commissions, tribal governments and state aviation trade associations. (See public involvement plan on page 50.)
Stakeholder Engagement Practices and Strategies	• Four advisory committees: policy, technical, consultants and aeronautics. • Focus groups with pilots. • Surveys of pilots and the public at events such as airshows. • Specific groups targeted, such as businesses with flight departments and tribal governments. • Needs meetings with airports. • Web site and targeted Facebook ad.

Minnesota Department of Transportation

Topic	Description
Intergovernmental Collaboration and Coordination	Works closely with the FAA ADO; offices and divisions within MnDOT; and other state agencies, including the departments of Revenue, Tourism, Natural Resources, and Employment and Economic Development.
Intergovernmental Coordination Practices	The agency's tribal liaison consults with Native American tribes in the state as needed.
Plan Implementation Tools and Methods	The agency is developing a continuous SASP that will deliver up-to-date data. Having better knowledge of the state of the system during interim SASP publication years will allow the agency to better track progress toward its goals.

Montana Department of Transportation

Topic	Description
Stakeholders	County commissioners, airport managers and others associated with the airport.
Stakeholder Engagement Practices and Strategies	• Encourages airport sponsors to be engaged and take ownership of their airports. • Invites county commissioners, airport managers and others associated with the airport, including sponsors' engineering firms, to attend CIP presentations.
Intergovernmental Collaboration and Coordination	The state loan and grant program is the primary channel for coordinating with FAA, the state and airport sponsors.
Intergovernmental Coordination Practices	N/A
Plan Implementation Tools and Methods	N/A

Nevada Department of Transportation

Topic	Description
Stakeholders	Aircraft Owners and Pilots Association, Aerospace States Association, NASAO and drone users (drone use is highly encouraged in state).
Stakeholder Engagement Practices and Strategies	Efforts to engage stakeholders are limited because Nevada's aviation program is small. An airport advisory council sets up grants and approves grant packages for the following year. Other practices focus on promoting the airport for educational purposes.
Intergovernmental Collaboration and Coordination	• Coordinates with the FAA ADO on airspace issues. • Provides written comment on environmental and land use issues. • Attends annual FAA ADO conference. • Manages the runway safety program.
Intergovernmental Coordination Practices	N/A.
Plan Implementation Tools and Methods	The Aviation program would like to include heliports and emergency medical services in its new system plan to obtain funding for these services. (The respondent noted that the current system plan available online is outdated.)

New Hampshire Department of Transportation

Topic	Description
Stakeholders	Airport owners, pilots, aviation organizations, government agencies, corporations, teachers, students, STEM organizations, airport neighbors and the general public.
Stakeholder Engagement Practices and Strategies	• Aeronautics web page. • Social media. • Letters and mailings. • Public notices (locally and statewide). • Face-to-face meetings. • Listening sessions.
Intergovernmental Collaboration and Coordination	The bureau has built relationships with municipalities, airport owners, FAA, other state DOT aviation units, state and federal environmental regulatory agencies, state fish and game department, state and federal legislative delegations, National Guard, state police aviation unit and Civil Air Patrol.

New Hampshire Department of Transportation

Topic	Description
Intergovernmental Coordination Practices	- Presentations. - Regular meetings and phone conversations. - Emails and letters.
Plan Implementation Tools and Methods	The bureau supports outreach efforts with state, regional and national aviation organizations; coordination with airport owners; collaboration with other state aviation programs; and pursuit of research funding through state and federal opportunities.

Oklahoma Aeronautics Commission

Topic	Description
Stakeholders	State Legislature; primary, secondary and postsecondary schools; and the general public in communities with airports.
Stakeholder Engagement Practices and Strategies	- Significant social media presence. - Formal, in-person speeches and presentations.
Intergovernmental Collaboration and Coordination	FAA recognizes the commission's responsibility to direct federal funding for large discretionary and state apportionment projects.
Intergovernmental Coordination Practices	Hosts airport strategic planning meetings to engage local governments and FAA.
Plan Implementation Tools and Methods	The commission conducts FAA Form 5010 airport safety and standards inspections and pavement inspections, and ensures proper documentation is in place for grant assurances.

Pennsylvania Department of Transportation

Topic	Description
Stakeholders	State Transportation Commission, MPOs, rural planning organizations and Aviation Council of Pennsylvania.
Stakeholder Engagement Practices and Strategies	- Notifies stakeholders of regional airport planning sessions. - Attends the annual state aviation conference.
Intergovernmental Collaboration and Coordination	- Coordinates with FAA continuously through the State Block Grant Program. - Relies on and encourages airports to engage with local municipalities.

Pennsylvania Department of Transportation

Topic	Description
Intergovernmental Coordination Practices	Except for FAA, the bureau has little intergovernmental coordination.
Plan Implementation Tools and Methods	The SASP update identified two airport categories: core and system. At *core airports*, the agency would support expansion that is justifiable and feasible. At *system airports*, the agency would support projects that help sustain the airport (mainly system preservation and economic development). (*Note*: According to the respondent, the current plan is being finalized and will be available online soon.)

Utah Department of Transportation

Topic	Description
Stakeholders	Utah Airport Operators Association, Utah Business Aviation Association, state association for aviation educators and the Governor's Office of Economic Development.
Stakeholder Engagement Practices and Strategies	- Place phone calls and texts. - Forward interesting articles to aviation staff.
Intergovernmental Collaboration and Coordination	- Meets with FAA twice each year to collaborate and coordinate the ACIP. - Coordinates with the state highway patrol and local law enforcement. - Supports educational outreach by coordinating field trips with area schools.
Intergovernmental Coordination Practices	Requires all airport managers and mayors to meet with FAA twice each year. (Utah DOT coordinates these meetings.)
Plan Implementation Tools and Methods	State legislation has standardized the infrastructure investment processes and allows Utah DOT to enforce the SASP at the state level, ensuring that the SASP is the guiding document for all 46 airports. The legislation requires all municipalities to send business grant requests to Aeronautics, which forwards them to FAA for approval. All federal funds then flow through Aeronautics, which coordinates project activity. (*Note*: According to the respondent, the SASP will be updated in about two years.)

Related Research and Resources

Below is a sampling of publicly available resources about state agency efforts to prepare SASPs. These publications are organized into three topic areas:

- Federal guidance.
- Published plans.
- Plan updates in progress.

Federal Guidance

Anticipated Project: Guidebook for Developing State Aviation System Plans, ACRP Project 01-36.
Project description at http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4416
The web site indicates that "this project has been tentatively selected and a project statement (request for proposals) is expected in November 2017." *From the project description*:

> Managing state aviation systems includes activities that vary by state. The FAA requires states to produce a system plan that addresses their aviation needs in order to obtain federal dollars to meet those needs. FAA Advisory Circular 150/5070-7, the airport system planning process, outlines the basic requirements and components of a system plan. While this publication provides a good base from which to work, a need for additional guidance on how system plans can better meet states' needs has been identified.
>
> The objective of this research is to provide guidance that can be used by state aviation agencies to identify the roles and responsibilities in managing state aviation systems and scope system plans that meet the unique needs of each state.

Related Problem Statements:

ACRP Problem Statement 18-01-16, Guidebook for Developing State Aviation System Plans, Airport Cooperative Research Program, March 2017.
http://onlinepubs.trb.org/onlinepubs/acrp/FY2018PS/18-01-16NASAO.pdf
The review panel comments for this project recommend that this research effort include the efforts associated with ACRP Problem Statement 18-01-19 (see below).

ACRP Problem Statement 18-01-19, Guidebook for Managing State Aviation Systems, Airport Cooperative Research Program, March 2017.
http://onlinepubs.trb.org/onlinepubs/acrp/FY2018PS/18-01-19Stambaugh.pdf
From the objective: The primary objective of this study is to develop a guidebook and accompanying digital repository that: 1) identifies the variety of roles, responsibilities and other topics in managing state aviation systems; and, 2) directs individuals of all levels of experience and responsibility on a given topic towards appropriate background information as well as, but not limited to, research products, best management practices, tooling and benchmarking resources.

The Airport System Planning Process, Advisory Circular No. 150/5070-7, Federal Aviation Administration, January 15, 2015.
https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5070-7-change1.pdf
This advisory circular includes changes that apply to all new system plan studies initiated after its issuance. In addition to updating web addresses appearing in the document, changes include:

- A new checklist for FAA personnel to use when reviewing system plans.

- Identification of elements of a system plan study that the system study sponsor must coordinate with the FAA.

- The recommendation "that system plan study sponsors ensure certain airport development projects are reflected in the system plan and in other local, regional and state transportation plans."

Published Plans

Below are published SASPs, including plans from states participating in the survey for this report.

Note: NASAO provides a web library of SASPs (see http://www.nasao.org/resources/state-system-plan-library/). Some of the most recently published plans may not appear on this site.

Arizona

State Aviation System Plan Update: 2018 Technical Report, Aeronautics Group, Arizona Department of Transportation, October 2018.
https://azdot.gov/docs/default-source/planning/SASP/2018-arizona-sasp-update-technical-report.pdf?sfvrsn=0
From the document: The ADOT Aeronautics Group designed the 2018 SASP Update to analyze a number of specific issues currently affecting the aviation system, such as funding, existing and future levels of service, available facilities, and nonaviation influences on airports (e.g., land use around airports, highway development, and UAS). Yet more broadly, understanding each of these issues helps to answer several questions posed by ADOT Aeronautics in the 2018 SASP Update:

1. Is the airport system performing at its optimal level?

2. What enhancements will improve overall system performance while ensuring a continual process for system optimization over the planning horizon?

These questions serve as the guiding principles of this study and inform all subsequent analyses leading to the system recommendations developed as the final step of the SASP Update.

Kansas

Kansas Aviation System Plan, Division of Aviation, Kansas Department of Transportation, 2016.
https://www.ksdot.org/Assets/wwwksdotorg/bureaus/divAviation/pdf/2016KASPupdate.pdf
This plan is an update of the agency's 2008 plan. *From the document*: This document explains the airport system planning process and how it achieves the listed objectives. Additionally, much of this information has been incorporated into the Kansas Aviation Portal, a web-based tool that makes use of an airspace awareness tool and additional data layers—including pavement conditions, economic impact and other useful information—to increase awareness of airports in Kansas. Access to the Kansas Aviation Portal is available at http://ksaviationportal.ksdot.org.

Massachusetts

2010 Massachusetts Statewide Airport System Plan, Aeronautics Division, Massachusetts Department of Transportation, 2010.
https://www.mass.gov/files/documents/2018/02/08/TechnicalRpt_1_Entire.pdf
From the introduction: MassDOT Aeronautics has undertaken this Massachusetts Statewide Airport System Plan in order to provide an analysis of the statewide airport system that will produce an extensive assessment of the condition of the current system, as well as a plan for meeting its current and future needs. Designed and conducted appropriately, the MSASP will support MassDOT Aeronautics by providing a tool that will help facilitate the continued successful development of its aviation system, with an emphasis on planning for the airport system as a whole.

Montana

Aviation System Plans, Montana Department of Transportation, undated.
http://www.mdt.mt.gov/aviation/avsystem-plans.shtml
This web site provides links to documents for the agency's SASPs produced in 2015, 2012 and 2009. The site indicates that the "SASPs are conducted annually, depending on available financing, FAA eligibility and proposed work."

New Hampshire

New Hampshire State Airport System Plan: Technical Report and Appendices, Bureau of Aeronautics, New Hampshire Department of Transportation, February 2015.
https://www.nh.gov/dot/org/aerorailtransit/aeronautics/documents.htm
Scroll to 2015 State Airport System Plan for links to individual chapters and appendices.

Oklahoma

Executive Summary: Oklahoma Airport System Plan, Oklahoma Aeronautics Commission, 2005.
https://www.ok.gov/OAC/documents/Oklahoma%20Airport%20System%20Plan%20Revised.pdf
From the plan overview: The OASP [Oklahoma Airport System Plan] has focused particularly on the principles that airports should be safe and efficient; located at optimum sites; developed and maintained to standards; affordable to federal, state and local governments; be extensive and contribute to economic competitiveness. In addition, the OASP has focused on the need to carefully identify the function of each airport included in the system to ensure that limited federal, state and local government financial resources can be optimally allocated to achieve the greatest system benefit.

South Carolina

Executive Summary: Statewide Aviation System Plan and Economic Impact Report, South Carolina Aeronautics Commission, 2018.
http://www.scaeronautics.com/download/2018%20South%20Carolina%20Executive%20Summary-Final.pdf
From the overview: Starting in the fall of 2016, SCAC [the South Carolina Aeronautics Commission], in partnership with the Federal Aviation Administration (FAA) and public airports in South Carolina, undertook steps to estimate the annual economic impact for all study airports and to identify how each airport should be developed to meet state objectives. Details on both studies can be obtained on SCAC's web site: www.scaeronautics.com. This summary focuses on annual economic impacts associated with the state's public airport system. The summary also documents how aviation demand in South Carolina is expected to grow and how airports will need to be improved to meet established objectives for airport development and maintenance.

Statewide Aviation System Plan: Technical Report, South Carolina Aeronautics Commission, 2018.
https://dc.statelibrary.sc.gov/bitstream/handle/10827/26935/AC_Statewide_Aviation_System_Technical_Report_2018.pdf
This 2018 plan updates the state's 2008 plan.

Washington

Washington Aviation System Plan (WASP), Washington State Department of Transportation, July 2017.
https://www.wsdot.wa.gov/aviation/Planning/
This web site provides links to individual chapters of the agency's July 2017 plan, including appendices that address emerging issues.

Wyoming

2016 Wyoming State Aviation System Plan, Aeronautics Division, Wyoming Department of Transportation, 2016.
http://www.dot.state.wy.us/files/live/sites/wydot/files/shared/Aeronautics/Planning/WySASP/WYSASP%20Technical%20Report.pdf
Wyoming initiated an update of its SASP in the fall of 2015; this technical report is the result of that process. Related publications are available at
http://www.dot.state.wy.us/home/aeronautics/planning--programming-program/wyoming-statewide-aviation-system-plan---2016-update.html.

Plan Updates in Progress

Highlighted below are efforts underway to update SASPs in six states: Alaska, California, Florida, Georgia, Illinois and Minnesota.

Alaska

Alaska's Aviation System, Division of Statewide Aviation, Alaska Department of Transportation and Public Facilities, undated.
www.alaskaasp.com
This web page summarizes the state's aviation system and includes the goals of the SASP. The Documents tab provides links to various reports and publications, including the 2017 SASP executive summary; the Schedule tab summarizes the work of Phase II of the system update.

Executive Summary: Alaska Aviation System Plan, Division of Statewide Aviation, Alaska Department of Transportation and Public Facilities, 2017.
http://www.alaskaasp.com/media/2008/aasp-layout_exsum-forweb_3.26.18.pdf
In addition to a timeline for 2018 projects, the executive summary highlights projects completed in 2017, including "an updated digital airport project prioritization process for the department, an expanded Airport Needs Directory, and further improvements to the Capital Improvement and Maintenance Program."

Phase II (2013-2018) Project Schedule: Alaska Aviation System Plan Update, Alaska Aviation System Plan, Alaska Department of Transportation and Public Facilities, 2018.
http://www.alaskaasp.com/Schedule.aspx
From the web site:

> **Prior AASP Work**
> The Alaska Aviation System Plan (AASP) updates were completed in 1986 and 1996. In 2008, the DOT&PF [Alaska Department of Transportation and Public Facilities] began a continuous aviation system planning process, where ongoing airport system planning is conducted, prior work updated and emerging issues are addressed. Phase I of the plan spanned 2008 to 2013, with a wide range of topics addressed, and Phase II is underway from 2013 through 2018. Phase I topics are addressed at Deliverables 2008-2013 and documents can be downloaded from the Documents Tab of this site.
> ….

> **Ongoing 2018 Work:**
>
> - Complete web site facelift.
>
> - Update to the 2011 Economic Impact Study with new data and trends for Alaska's rural and international aviation systems.
>
> - Conversion of current CIMP [Capital Improvement and Maintenance Program] application from Microsoft Surface Pro to Apple iPad.
>
> - Additional CIMP inspections to assist the Department in prioritizing airport capital improvement projects.
>
> - Final Phase II system planning report will be available end of 2018!

California

California Aviation System Plan (CASP) Elements, Caltrans, 2018.
http://dot.ca.gov/hq/planning/aeronaut/documents/casp/index.htm
This web site provides links to components of the CASP, including the 2017–2026 CIP, 2016 policy element and the general aviation system needs assessment.

California Transportation Plan 2040, Caltrans, June 2016.
http://www.dot.ca.gov/hq/tpp/californiatransportationplan2040/Final%20CTP/FINALCTP2040-Report-WebReady.pdf
From the preface: The CTP 2040 outlines goals and recommendations to achieve a vision for a safe, sustainable, universally accessible, and globally competitive transportation system that provides reliable and efficient mobility for people, goods and services, and information, while meeting the state's GHG [greenhouse gas] emission reduction goals and preserving the unique character of California's communities.

Florida

"FASP and the Continuing Florida Aviation System Planning Process (CFASPP)," Jim Halley, Florida Department of Transportation, November 6, 2017.
http://floridatransportationplan.com/pdf/imp-nov17/FASP%20and%20CFASPP%20Presentation%20for%20FTP%20IC.pdf
CFASPP web site: http://www.cfaspp.com/
This presentation describes efforts associated with Florida's SASP and the Continuing Florida Aviation System Planning Process (CFASPP), which will provide continuous input into the SASP.

Georgia

GDOT Project Schedule, Georgia Statewide Aviation System Plan, Georgia Department of Transportation, November 2016.
http://www.dot.ga.gov/InvestSmart/Aviation/Documents/GSASP/GSASPSchedule.pdf
While this project schedule indicates that Georgia DOT's key deliverables for its SASP update will be available February 2018, the agency's web site does not offer public access to all of these documents. See below for what appears to be an exception.

Chapter 3, Forecasts, Statewide Aviation System Plan 2017, Georgia Department of Transportation, December 2017.
http://www.dot.ga.gov/InvestSmart/Aviation/Documents/GSASP/Chapter3-Forecast.pdf
This chapter appears to be the only publicly available document associated with the agency's plan update in progress. *From the document*:

> This chapter discusses methodologies used to project aviation demand for system airports. Forecasts developed in the Georgia Statewide Airport System Plan (GSASP) provide a framework to guide analysis for future system development. It should be recognized that there are always short- and long-term fluctuations in demand projections due to a variety of factors that cannot always be anticipated.

> Projections of aviation activity for the state were prepared for the near-term (2020), mid-term (2025), and long-term (2035) time frames.

Illinois

Long Range Transportation Plan, Draft Report, Illinois Department of Transportation, 2018.
http://www.idot.illinois.gov/transportation-system/transportation-management/planning/index
Illinois DOT is starting a continual SASP process and developing the scope for a SASP report with economic analysis. The report's goals, objectives and policies will align with the overarching goals of the Illinois Long Range Transportation Plan. A draft of the statewide transportation plan is available at this web site.

Minnesota

Continuous State Aviation System Plan, Minnesota Department of Transportation, undated.
http://www.dot.state.mn.us/aero/planning/sasp.html
Minnesota DOT's SASP update web site provides links to various resources, including its public involvement plan and a digital toolkit that includes many of the agency's presentations about the report's progress.

Public Involvement Plan; Draft for Public Comment: State Aviation System Plan Update, Minnesota Department of Transportation, October 2017.
http://www.dot.state.mn.us/aero/planning/sasp/SASP%20Public%20Involvement%20Plan.pdf
Minnesota's Aeronautics Division developed an extensive public involvement plan to encourage "anyone and everyone" to become involved in its current SASP update. The plan provides "a framework for how public involvement activities will be conducted during the plan update process." A discussion of the project development process begins on page 6. Table 4.1 (page 7 of the plan) is a comprehensive list of potential advisory stakeholder groups.

SASP Digital Toolkit, Minnesota Department of Transportation, undated.
http://www.dot.state.mn.us/aero/planning/sasp/digital-toolkit.html
The toolkit is a repository for presentations, handouts and other meeting materials related to the SASP update.

Contacts

CTC contacted the individuals below to gather information for this investigation.

State Agencies

Alaska

Rebecca Douglas
Statewide Aviation/Aviation System Planner
Alaska Department of Transportation and
  Public Facilities
907-269-0328, rebecca.douglas@alaska.gov

Arizona

Donald Kriz
Manager, Aeronautics Group
Arizona Department of Transportation
602-712-8333, dkriz@azdot.gov

Colorado

David Ulane
Director, Division of Aeronautics
Colorado Department of Transportation
303-512-5254, david.ulane@state.co.us

Georgia

Joseph Robinson
Manager, Aviation Planning
Georgia Department of Transportation
404-631-1788, jorobinson@dot.ga.gov

Illinois

Clayton Stambaugh
Bureau of Planning, Aviation
Illinois Department of Transportation
217-782-4981,
clayton.stambaugh@illinois.gov

Kansas

Dennis O'Connor
Manager, Federal and State Affairs,
  Aviation Division
Kansas Department of Transportation
785-296-2553, dennis.oconnor@ks.gov

Louisiana

Michael Burrows
Assistant Director, Aviation
Louisiana Department of Transportation and
  Development
225-379-3045, michael.burrows@la.gov

Massachusetts

Denise Garcia
Director, Aviation Planning,
  Aeronautics Division
Massachusetts Department of Transportation
617-412-3688, denise.garcia@state.ma.us

Minnesota

Rylan Juran
Office of Aeronautics
Minnesota Department of Transportation
651-234-7190, rylan.juran@state.mn.us

Montana

Wade Cebulski
Chief, Airports/Airways Bureau,
  Aeronautics Division
Montana Department of Transportation
406-444-9581, wcebulski@mt.gov

Nevada

Kurt Haukohl
State Aviation Manager, Aviation Program
Nevada Department of Transportation
775-888-7353, khaukohl@dot.nv.gov

New Hampshire

Carol Niewola
Senior Aviation Planner, Bureau of
  Aeronautics
New Hampshire Department of Transportation
603-271-1675, carol.niewola@dot.nh.gov

Oklahoma

Jennifer Bishop
Manager, Aviation Program
Oklahoma Aeronautics Commission
405-604-6916, jbishop@oac.ok.gov

Pennsylvania

Tom Tomczyk
Planning Manager, Bureau of Aviation
Pennsylvania Department of Transportation
717-705-1246, ttomczyk@pa.gov

Utah

Jared Esselman
Director, Division of Aeronautics
Utah Department of Transportation
801-715-2260, jesselman@utah.gov

Appendix A: Survey Questions

The following survey was distributed to members of the AASHTO Aviation Council and aviation executives from selected state transportation agencies to gather information about their state aviation system plans.

Economics and Funding

1. Has your state aviation program partnered with state or local economic development programs to bolster general aviation (GA) airport economic sustainability? Please describe the partnership(s) and the outcome(s).

2. Please describe the innovative ideas your state has implemented to increase funding for GA airports.

3. Please describe your state's practices to better align state aviation funding programs with Federal Aviation Administration grant opportunities.

4. Please describe your state's efforts that have produced the best results in the categories listed below:

   - Economic development strategies.
   - Partnerships.
   - Funding opportunities.
   - Other practices (please describe).

Infrastructure and Safety

1. Please describe the criteria your state aviation program uses to prioritize GA infrastructure and safety projects.

2. Please describe how your state's project prioritization practices maximize federal and state aviation grant funding.

Land Use and Environmental Sustainability

1. Please describe your state's efforts to champion sustainability at GA airports in the areas listed below.

   - Water conservation and water quality.
   - Air quality.
   - Reducing greenhouse gas emissions.
   - Contaminated land.
   - Nonlethal bird techniques.
   - Habitat protection or enhancement.
   - Use of construction materials.
   - Management of hazardous or toxic products.
   - Waste minimization, disposal and management.
   - Recycling.
   - Noise reduction.
   - Aesthetics.
   - Energy efficiency.
   - Green building.

2. Please describe how your state promotes compatible land uses within the airport influence area (land within 2 miles of a public airport).

3. Please identify your state aviation program's top three priorities for addressing the implications of climate change.

- Priority One.

- Priority Two.

- Priority Three.

Mobility and Access

1. Please describe how your state aviation program has encouraged the incorporation of multimodal access in to and out of GA airports for the transportation modes listed below.

- Roadways (local and state).

- Transit (taxi, rideshare, bus, light rail).

- Walking/bicycling.

- Rail (commuter rail, freight).

- High-speed rail.

- Other modes.

Performance Metrics, Trends and Needs

1. Does your state use performance metrics to track federal and state investments in aviation? Please describe these metrics.

2. Please identify the three most significant trends your state is monitoring that could improve GA airports for the airport and/or its customers.

- Trend One.

- Trend Two.

- Trend Three.

3. Please identify your state's top three priorities to bring airports back online following a significant incident, including natural disasters. Please frame your response in the context of post-disaster recovery efforts.

- Priority One.

- Priority Two.

- Priority Three.

Outreach, Intergovernmental Coordination and Implementation

1. Please identify the stakeholders that your state aviation program attempts to engage as part of outreach or public participation.

2. Please describe the practices and strategies employed to engage stakeholders.

3. Please identify the collaboration or coordination your state aviation program has engaged in with federal, state and local agencies.

4. Please describe the practices and strategies employed to support intergovernmental coordination.

5. Please describe the methodologies, mechanisms, systems and tools your state aviation program employs to ensure proper implementation of your SASP's goals, objectives and policies.

Completing the Survey

1. If available, please provide links to documentation related to your SASP update. Send any files not available online to carol.rolland@ctcandassociates.com.

2. Please use this space to provide any comments or additional information about your previous responses.