ACRP
AIRPORT COOPERATIVE RESEARCH PROGRAM

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PROGRESS REPORT
Reaching the Airport Community with the Information It Needs

The airport industry today is dynamic and characterized by perpetual threats and opportunities. The combination of economic shocks, high fuel prices, air carrier mergers, and industry consolidations has brought significant change to the commercial airline industry and general aviation. From an industry standpoint, these factors have resulted in a shift from historically predictable traffic and passenger levels (and the reliable revenue streams to support them) to an industry characterized by economic threat and uncertainty. In this environment, many small commercial service and general aviation airports have experienced severe losses in service, even as other airports have found themselves dealing with capacity constraints and congestion. Today's airport practitioners need easy access to the tools and information that will help them to manage these and other challenges and ensure that their airports are consistently operating safely and efficiently. The Airport Cooperative Research Program (ACRP) is uniquely positioned to meet the vital need for such resources and provide the airport community with unbiased, proven solutions.
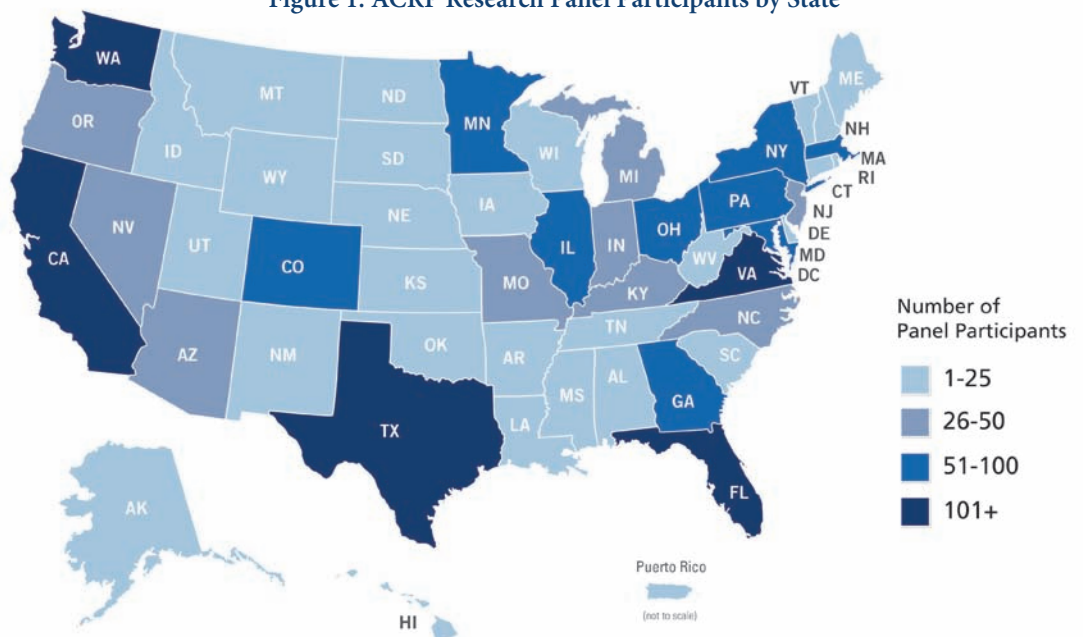
Established in 2005, ACRP is an applied research program that develops near-term practical solutions to problems faced by airport operators and their stakeholders and provides research publications (online) at no additional cost to the industry. The program is managed by the Transportation Research Board of the National Academies and is sponsored by the FAA. ACRP undertakes research and other

technical activities across a diverse set of industry disciplines, including airport design, construction, legal issues, maintenance, operations, safety, policy, planning, human resources, and administration. The research aims to fill voids in knowledge and practice, tackle persistent problem areas, and provide guidance on new issues to help spur innovation in airport management.

Through its library of more than 200 publications and engagement with stakeholders, ACRP plays a key role in helping airports collaborate and share lessons learned, fulfill their environmental responsibilities, and operate safely and efficiently. ACRP ensures its work reaches the right audience by participating in conferences, hosting workshops and webinars, facilitating a speakers' bureau, and managing the ACRP Ambassador program. The ACRP website also serves as a valuable tool for sharing information, offering airport practitioners easy access to all ACRP publications. Overall visits to the website increase each year and in 2012 alone, the site saw more than 54,000 publication downloads.

Over the past eight years, ACRP has built a network of industry experts representing all fifty states, Washington, D.C., and Puerto Rico who contribute to the program's research (see Figure 1). A recent survey of airport practitioners confirms ACRP has made meaningful inroads to penetrate the airport industry. Among the practitioners that used ACRP publications in the past year, 49% used them as

> " The value that ACRP brings the airports industry is to identify, and at times develop, best practices for airport managers to implement at their airports. "
>
> *- James M. Crites, Executive VP of Operations, Dallas/Fort Worth International Airport*

Figure 1. ACRP Research Panel Participants by State

Number of Panel Participants
- 1-25
- 26-50
- 51-100
- 101+

Puerto Rico

(not to scale)

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references and sources for identifying best practices, 24% used them to help improve airport operations, and another 23% used them as part of a planning process or to set benchmarks.

ACRP has authorized more than 381 projects (see Figure 2), resulting in reports, syntheses, CDs, and digests. Each research project is scoped and guided by a small panel of industry experts. ACRP has engaged thousands of public- and private-sector stakeholders—airport practitioners, academicians, consultants, advocates, and students—to identify problem areas and develop innovative publications that provide guidance, extend knowledge, identify best practices, and offer practical tools to overcome the many challenges faced by airports today. ACRP applies a grass-roots approach to engage practitioners, thereby ensuring that its research continues to capture the issues most relevant to the airport industry.

Practical Solutions and Tools

ACRP's dedication to providing airport practitioners with practical, hands-on tools and resources means industry stakeholders have a reliable source of information when looking to innovate and improve the way they conduct airport business. Across ACRP's research fields, its growing library offers software guidance, modeling tools, sample planning documents, best practices, worksheets, checklists, and more.

One of the most popular and widely used reports is *ACRP Report 25: Airport Passenger Terminal Planning and Design* (Volumes 1 and 2), which provides guidance to airport operators on common issues related to the planning and design of airport passenger
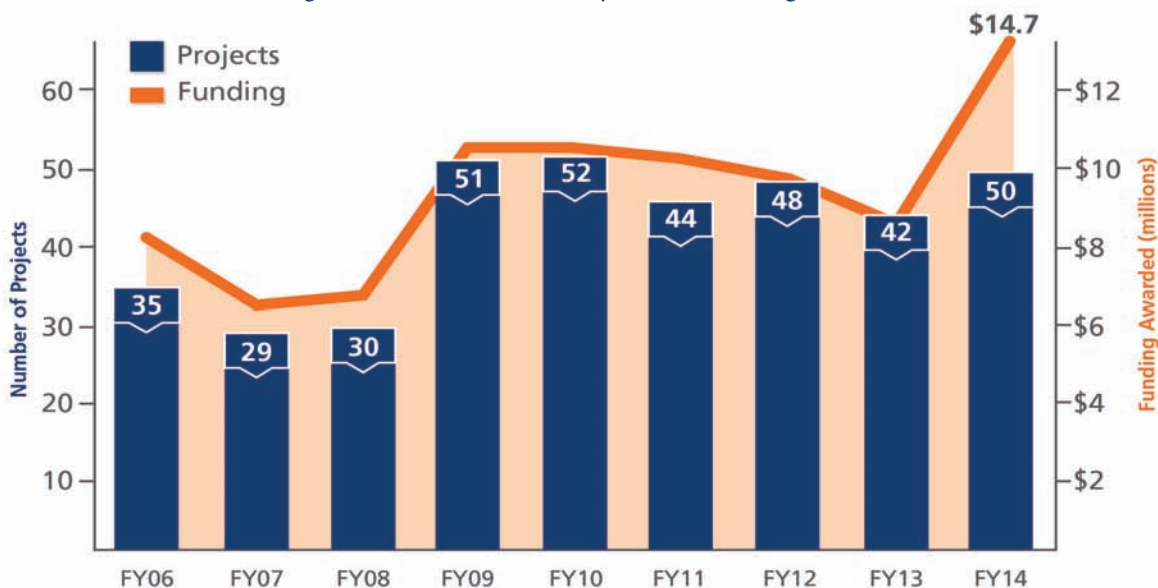
terminals. Planners and designers for airports of all sizes seek to design passenger terminals that provide value and high-quality service for the many components of their complex airport facilities. Prior to the release of *ACRP Report 25*, information about terminal planning existed in dozens of different documents across the industry. It proved time consuming and burdensome for planners to seek out the specific resources that were most applicable to their airport's situation. ACRP collected these disparate documents, synthesized them, and consolidated the knowledge into a convenient resource. In addition to the planning guidance, the report contains models with practical learning exercises, several airport-specific sample data sets, and a user's guide to assist in the correct use of each model. This work had a positive impact on the industry by addressing the comprehensive nature of terminal planning and making it easily accessible to the wide range of stakeholders involved. Year after year, *ACRP Report 25* continues to be one of the most downloaded reports from the ACRP website.

> " *ACRP provides important information to people who need that kind of support, by providing practical, user-friendly guidebooks to airport managers to help them deal with airport challenges.* "
>
> *- Jeff Hamiel, Executive Director, Minneapolis-St. Paul Metropolitan Airports Commission*

Airport reliability is consistently affected by unexpected events, any one of which can cause passenger delays or irregular operations. *ACRP Report 65: Guidebook for Airport Irregular Operations (IROPS) Contingency Planning* includes step-by-step templates that aid in the preparation of contingency plans outlining necessary communications, collaboration, and coordination to address customer needs. It features numerous customizable resources, including guidance on the topics needed for an IROPS plan: checklists, worksheets, sample agendas, and a sample plan.

Figure 2. ACRP Research Projects and Funding Awarded

On topics ranging from sustainability to weather events, to managing economic growth on airport property, ACRP shares practical solutions to help the industry evolve in today's changing environment. One example is the recent *ACRP Report 79: Evaluating Airfield Capacity*. This report assists planners with airfield and airspace capacity determination by assessing relevant methods and modeling techniques for evaluating existing and future capacity for airports. Another example is *ACRP Report 93: Operational and Business Continuity Planning for Prolonged Airport Disruptions*, which provides a guidebook and a business continuity software tool for airport operators to assist, plan, and prepare for disruptive and catastrophic events that have the potential to cause prolonged airport closure.

Safe and Efficient Operations

Maintaining safe and efficient operations is critical to the successful transportation of people and goods. ACRP stands as a trusted resource with the guidance to help airport practitioners anticipate, prepare for, and implement solutions to meet new challenges. Safety, policy and planning, and operations are three key research fields in ACRP and cover passenger service, airport capacity, fuel price uncertainties, emergency management, wildlife hazards, winter operations, airport parking, and more. ACRP recognizes that streamlined management of an airport requires constant coordination between airport staff and other affiliated organizations, and its guidebooks are designed to highlight best practices for strengthening those relationships and communicating clearly both within the airport and to the broader community.

> " **ACRP Report 16: Guidebook for Managing Small Airports** *has proved to be an invaluable tool at the Eugene Airport. At a small airport, many of our incoming management employees are new to the aviation industry and this guidebook provides a solid foundation for them to begin their professional development. For my team it's required reading.* "
>
> *- Cathryn Stephens, Deputy Airport Director, Airport Services, Eugene, OR, Airport*

One area where ACRP research continues to resonate is the management of small airports. *ACRP Report 16: Guidebook for Managing Small Airports* compiles information on the many issues faced by practitioners of these airports. Managers of the nation's small airports have varied backgrounds and wear many hats depending on whether they are dealing with budgets, debris on the runway, customer service, or emergency management plans. *ACRP Report 16* is a comprehensive resource for airport managers and includes practical guidance on a range of financial, administrative, operational, and technical areas. As part of its ongoing outreach to managers of small airports, ACRP hosted a webinar on the topic in June 2013. With more than 300 attendees, this webinar was

95%
of practitioners' overall-view of ACRP is positive.

one of ACRP's most popular sessions. By providing guidance that offers a national perspective on airport management, ACRP gives managers a place to start when looking to better understand airport issues and to think creatively about ways to improve services.

Airport practitioners strive to maintain reliability for the passengers traveling through their terminals and are constantly on the lookout for those unexpected events that can result in excessive passenger delays and IROPS. Research has shown that negative impacts to passengers are minimized by a contingency plan to address inefficiencies related to IROPS. By utilizing the practical tools in *ACRP Report 65: Guidebook for Airport Irregular Operations (IROPS) Contingency Planning,* personnel from passenger airports of all sizes can effectively develop their own IROPS contingency plans to enhance operational efficiency and improve safety.

ACRP also helps keep airports informed about up-to-date research on critical airport operations issues. *ACRP Synthesis 40: Issues with Airport Organization and Reorganization* examines organizational design and current trends and practices in airport management, including a review of past and present practices in operational design. It helps managers look to the future by providing specific, effective organizational practices and exploring those practices through in-depth case studies. *ACRP Synthesis 40* is one of the program's most frequently downloaded reports and was featured in a recent webinar that received high satisfaction ratings from participants.

Environmental Sustainability and Energy Efficiency

Airport managers are now taking steps to address broader sustainability issues in addition to environmental compliance. These steps enable airports to reduce costs while addressing the evolving values of their customers, local communities, and partner organizations. ACRP has sponsored more research publications in the environmental research field than any of its other fields, and sustainability themes cut across many of ACRP's other research areas. This research has helped airports identify opportunities to become more environmentally responsible, demonstrate sensitivity to the impact of operations on surrounding communities, diversify fuel supplies, improve air quality, and implement energy efficiency measures that save money and cut greenhouse gas (GHG) emissions.

Many of ACRP's research projects focus on specific environmental management issues, such as water conservation and water quality, noise mitigation, air quality and emissions, and waste reduction. *ACRP Report 14: Deicing Planning Guidelines and Practices for Stormwater Management Systems* was one of the first industry

92%

of practitioners are satisfied with ACRP publications.

references to help airports manage stormwater runoff from aircraft and airfield deicing and anti-icing operations. Through this report and others, ACRP offers a suite of practices for cost-effective control of runoff so that airport operators can choose the solution that best meets their needs.

Airport terminals use large amounts of energy for lighting, heating and ventilation, air conditioning, and conveyance systems. By improving energy efficiency, airports are able to reduce operating costs and GHG emissions while maintaining operations and occupant comfort. *ACRP Synthesis 21: Airport Energy Efficiency and Cost Reduction* documents energy efficiency improvements being implemented at airports across the country to reduce costs and support broader maintenance and sustainability initiatives. ACRP also provides recommendations for teaming with utilities to conduct low-cost energy audits or coordinating with existing county or city projects to leverage funding opportunities.

> " *ACRP Report 15: Aircraft Noise: A Toolkit for Managing Community Expectations* **provides a toolkit and self-assessment instrument, which have helped us assess programs, sound insulation, noise metrics, and community response at San Diego....This ACRP report contains information that can help airports and communities co-exist.** "
>
> *- Dan Frazee, Director of Airport Noise Mitigation, San Diego International Airport (Retired)*

ACRP has sought to provide more comprehensive and accessible information regarding sustainable practices, methods, procedures, and technologies for an airport environment. *ACRP Report 80: Guidebook for Incorporating Sustainability into Traditional Airport Projects* identified many such strategies available to airports. The guidebook and accompanying evaluation tool, the Airport Sustainability Assessment Tool (ASAT), provide airports and their stakeholders with the information necessary to assess and judge which practices would be most applicable and useful for their individual airport situations and environments.

ACRP also identifies alternative fuels as a research topic with potential to provide significant economic and environmental benefits to airports and airlines. Fuels such as alternative jet fuel, green diesel, biodiesel, ethanol, compressed natural gas, liquefied petroleum gas, and electricity can lead to improvements in local air quality emissions and reductions in life-cycle GHGs. *ACRP Report 83: Assessing Opportunities for Alternative Fuel Distribution Programs* includes guidance and tools to assist with planning, evaluating, and assessing commercial opportunities from alternative fuels distribution.

In the dynamic environment of the airport industry, airport operators need reliable, easily accessible information to respond to diverse challenges. Through its unique engagement with stakeholders and well-established research process, ACRP consistently provides the airport community with relevant, valuable guidance and tools that have proven to help practitioners successfully manage their day-to-day operations, avoid common problems, and take advantage of new opportunities for growth and innovation.

The ACRP Ambassador Program

ACRP Ambassadors play a vital role in getting solutions into the hands of the airport practitioners who need them. Launched in 2012, the Ambassador program is composed of industry professionals who volunteer their time to represent ACRP at industry events. They share ACRP values and understand that ACRP research provides useful information to the aviation community. The Ambassador program has become an important component of ACRP's efforts to engage industry practitioners and encourage widespread use of its growing research library. Since the launch, Ambassadors have attended 41 industry conferences and events, distributed more than 1,500 ACRP publications, and helped drive traffic to the ACRP website.

> " *I've chosen to be an Ambassador for ACRP because of the wealth of knowledge and information encompassed in the program. To get that word out to practitioners, to help airports run better, and take that knowledge and help the system grow is why I'm involved in the program.* "
>
> *- Joshua Abramson, Executive Director, Tupelo Airport Authority*

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The ACRP is sponsored by the Federal Aviation Administration, research projects are selected by the ACRP Oversight Committee, and the Program is managed by the Transportation Research Board of the National Academies.

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www.TRB.org/ACRP
202-334-2277 | ACRP@nas.edu