



# ACRP

AIRPORT  
COOPERATIVE  
RESEARCH  
PROGRAM

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## 2013 ANNUAL REPORT OF PROGRESS

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# ACRP

AIRPORT  
COOPERATIVE  
RESEARCH  
PROGRAM

## 2013 ANNUAL REPORT OF PROGRESS

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Research sponsored by the Federal Aviation Administration

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WASHINGTON, D.C.  
2013  
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## AIRPORT COOPERATIVE RESEARCH PROGRAM

Airports are vital national resources. They serve a key role in transportation of people and goods and in regional, national, and international commerce. They are where the nation's aviation system connects with other modes of transportation and where federal responsibility for managing and regulating air traffic operations intersects with the role of state and local governments that own and operate most airports. Research is necessary to solve common operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the airport industry. The Airport Cooperative Research Program (ACRP) serves as one of the principal means by which the airport industry can develop innovative near-term solutions to meet demands placed on it.

The need for ACRP was identified in *TRB Special Report 272: Airport Research Needs: Cooperative Solutions* in 2003, based on a study sponsored by the Federal Aviation Administration (FAA). The ACRP carries out applied research on problems that are shared by airport operating agencies and are not being adequately addressed by existing federal research programs. It is modeled after the successful National Cooperative Highway Research Program and Transit Cooperative Research Program. The ACRP undertakes research and other technical activities in a variety of airport subject areas, including design, construction, maintenance, operations, safety, policy, planning, legal issues, human resources, and administration. The ACRP provides a forum where airport operators can cooperatively address common operational problems.

The ACRP was authorized in December 2003 as part of the Vision 100-Century of Aviation Reauthorization Act. The primary participants in the ACRP are (1) an independent governing board, the ACRP Oversight Committee (AOC), appointed by the Secretary of the U.S. Department of Transportation with representation from airport operating agencies, other stakeholders, and relevant industry organizations such as the Airports Council International-North America (ACI-NA), the American Association of Airport Executives (AAAE), the National Association of State Aviation Officials (NASAO), and Airlines for America (A4A) as vital links to the airport community; (2) the TRB as program manager and secretariat for the governing board; and (3) the FAA as program sponsor. In October 2005, the FAA executed a contract with the National Academies formally initiating the program.

The ACRP benefits from the cooperation and participation of airport professionals, air carriers, shippers, state and local government officials, equipment and service suppliers, other airport users, and research organizations. Each of these participants has different interests and responsibilities, and each is an integral part of this cooperative research effort. Research problem statements for the ACRP are solicited periodically but may be submitted to the TRB by anyone at

any time. It is the responsibility of the AOC to formulate the research program by identifying the highest priority projects and defining funding levels and expected products.

Once selected, each ACRP project is assigned to an expert panel, appointed by the TRB. Panels include experienced practitioners and research specialists; heavy emphasis is placed on including airport professionals, the intended users of the research products. The panels prepare project statements (requests for proposals), select contractors, and provide technical guidance and counsel throughout the life of the project. The process for developing research problem statements and selecting research agencies has been used by TRB in managing cooperative research programs since 1962. As in other TRB activities, ACRP project panels serve voluntarily without compensation.

Primary emphasis is placed on disseminating ACRP results to the intended end-users of the research: airport operating agencies, service providers, and suppliers. The ACRP produces a series of research reports for use by airport operators, local agencies, the FAA, and other interested parties, and industry associations may arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by airport-industry practitioners.

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# **THE NATIONAL ACADEMIES**

## *Advisers to the Nation on Science, Engineering, and Medicine*

The **National Academy of Sciences** is a private, nonprofit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. On the authority of the charter granted to it by the Congress in 1863, the Academy has a mandate that requires it to advise the federal government on scientific and technical matters. Dr. Ralph J. Cicerone is president of the National Academy of Sciences.

The **National Academy of Engineering** was established in 1964, under the charter of the National Academy of Sciences, as a parallel organization of outstanding engineers. It is autonomous in its administration and in the selection of its members, sharing with the National Academy of Sciences the responsibility for advising the federal government. The National Academy of Engineering also sponsors engineering programs aimed at meeting national needs, encourages education and research, and recognizes the superior achievements of engineers. Dr. C. D. Mote, Jr., is president of the National Academy of Engineering.

The **Institute of Medicine** was established in 1970 by the National Academy of Sciences to secure the services of eminent members of appropriate professions in the examination of policy matters pertaining to the health of the public. The Institute acts under the responsibility given to the National Academy of Sciences by its congressional charter to be an adviser to the federal government and, on its own initiative, to identify issues of medical care, research, and education. Dr. Harvey V. Fineberg is president of the Institute of Medicine.

The **National Research Council** was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and advising the federal government. Functioning in accordance with general policies determined by the Academy, the Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, the public, and the scientific and engineering communities. The Council is administered jointly by both Academies and the Institute of Medicine. Dr. Ralph J. Cicerone and Dr. C. D. Mote, Jr., are chair and vice chair, respectively, of the National Research Council.

The **Transportation Research Board** is one of six major divisions of the National Research Council. The mission of the Transportation Research Board is to provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal. The Board's varied activities annually engage about 7,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest. The program is supported by state transportation departments, federal agencies including the component administrations of the U.S. Department of Transportation, and other organizations and individuals interested in the development of transportation. **[www.TRB.org](http://www.TRB.org)**

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## Letter From the AOC Chair

This year marks the completion of eight years for the Airport Cooperative Research Program, producing practical near-term research results to help the airport industry. It is also a major milestone for the ACRP Oversight Committee (AOC) as several colleagues and I, who were appointed to the AOC at its onset, leave after completing our second full term to make room for new voices to lead the AOC.

Since the program's inception in late 2005, ACRP has directed more than \$86 million to the research and development of practical solutions to real-world problems that airports face every day. We do not do this alone. To guide this research, ACRP has engaged thousands of airport industry practitioners who have collectively submitted more than 1,100 problem statements, volunteered for 381 research projects, and contributed to the production of nearly 200 publications. This work is very important and both necessary and timely for our industry.



The theme of this year's annual progress report is "Reaching the Airport Community with the Information It Needs." We always seek ways to improve and extend ACRP's value and effectiveness for airports and this past year was no exception. Our efforts to connect with the airport industry involve expanded dissemination and engagement to make our program stronger and better serve their needs.

Today the airport industry faces an array of complexities—economic shocks, emergency preparedness, air carrier mergers, climate change and sustainability, new commercial and economic development opportunities, evolving government regulations, and the like. We see significant change to the commercial airline industry and general aviation. From an industry standpoint, these factors result in a shift from historically predictable trends and reliable revenue streams, to an industry characterized by economic threat and uncertainty.

Our work is most useful when it is in the hands of those who need it most—airport practitioners—and when they are able to put the results into practice. So the AOC directed ACRP resources to take a close look at our library of publications to develop new strategic ideas for research, look for ways to help airports get the results, and share successful implementations when we hear of them.

We refined methods by which practitioners could author problem statements of improved quality and relevance to the ACRP. We also designed a new collaborative process by which the AOC could identify one or more grand challenges—current or emerging issues of strategic importance regarding which ACRP could make meaningful contributions to the airport industry. The AOC intended that these initiatives support and extend the ACRP's value to the industry as the program matures into an increasingly effective research program. ACRP continues with dissemination efforts to reach out to industry practitioners. Highlights include an expanded webinar series, recruiting and training a second cohort of ACRP Ambassadors, producing new e-videos, publishing four more Impacts on Practice, and participating in key industry conferences, workshops, and events.

We could not do this without the strong support and active participation of the Federal Aviation Administration, along with the highly professional and committed efforts of the TRB staff. Those of us departing the AOC leave knowing the next group of leaders has a well-functioning research program serving our airport community.

Sincerely,

A handwritten signature in black ink that reads "James Wilding". The signature is fluid and cursive, with the first name being more prominent.

James Wilding





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# AIRPORT COOPERATIVE RESEARCH PROGRAM

## Annual Report of Progress

December 31, 2013

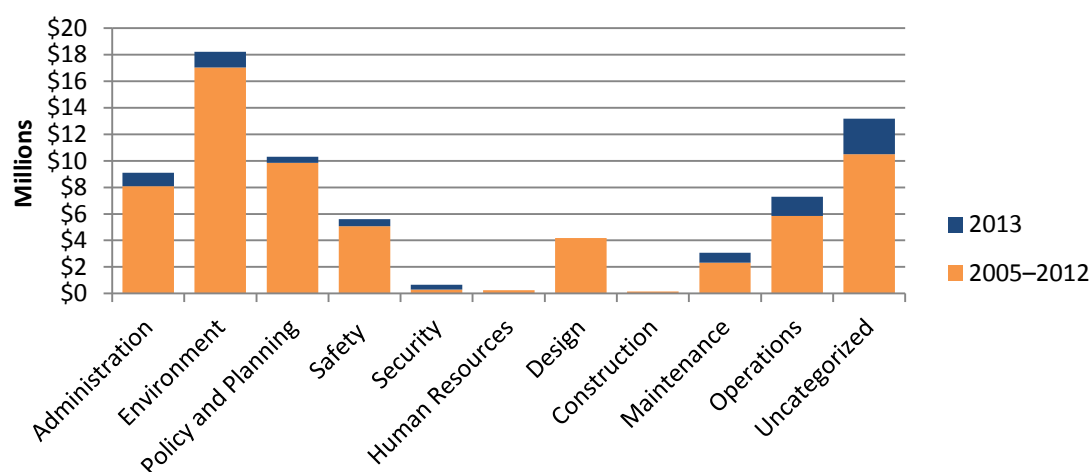
### Introduction

Today's airports face a myriad of challenges: regulatory developments at the local, state, and national levels; increased energy costs; tight capital markets and budgetary uncertainties; extreme weather events and climate change; growing surface transportation needs; customer service obligations; and more. Now, more than ever, airport practitioners need workable, proven solutions and sound data and information to steer policies, decisions, and best practices to stay on track and remain competitive.

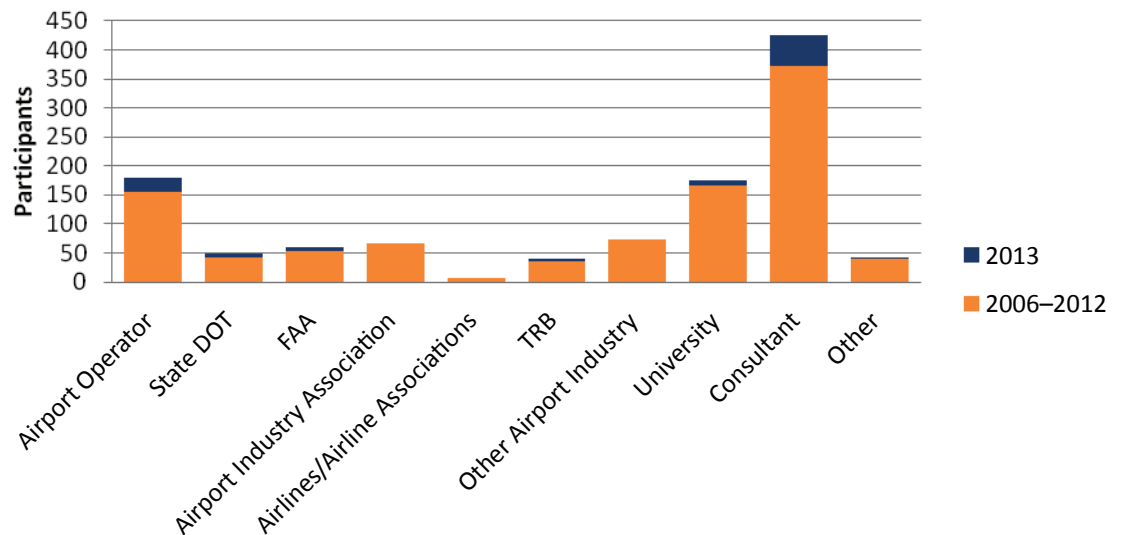
The Airport Cooperative Research Program (ACRP) is a national resource for the airport industry, fulfilling the vital needs of airport practitioners by providing industry-driven research at no cost to airports of all sizes across the country and beyond. After eight years in operation, ACRP has engaged thousands of public- and private-sector airport practitioners, academicians, consultants, advocates, and students to identify the airport industry's most pressing challenges and fund research to document, mitigate, and create tools to help surmount and avoid those challenges.

Since its establishment in 2005, ACRP has authorized more than \$86 million for 381 projects to generate nearly 250 research products in the form of reports, digests, syntheses, CDs, and web documents addressing problems in every area of the airport organization (see Figure 1). To do so, ACRP has convened hundreds of panels with thousands of industry experts to obtain research ideas (see Figure 2) and ensure that each research product is guided by a relevant yet diverse set of perspectives and expertise.

**Figure 1: Funding Across ACRP Research Fields**

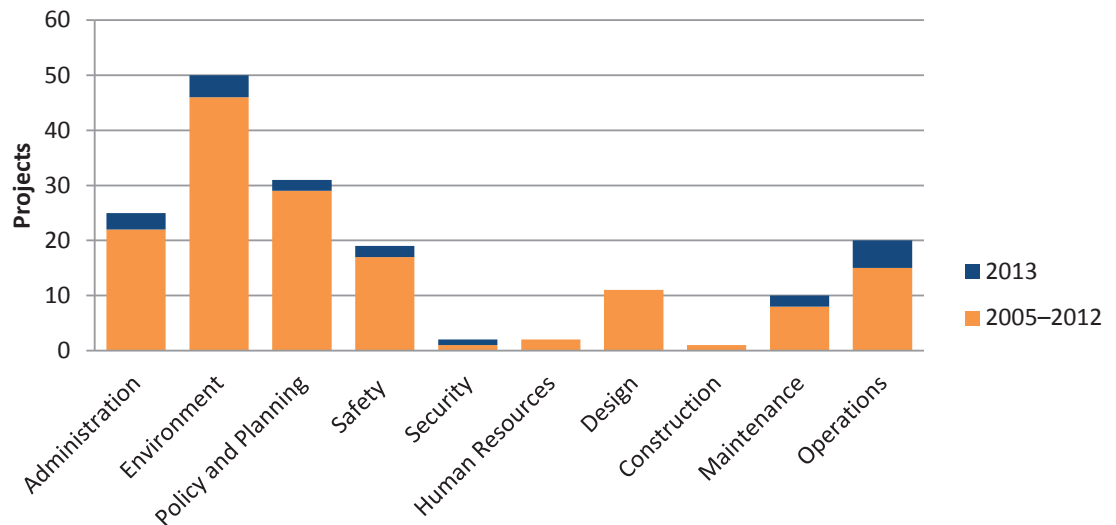


**Figure 2: Sources of Problem Statements by Sector**



As a result, more airport practitioners are getting involved in ACRP—participating in panels, proposing on RFPs, downloading reports, applying research results—which in turn creates a sharper, more robust, and more relevant program for all. The quantity and breadth of ACRP’s research spans 10 fields of interest (see Figure 3).

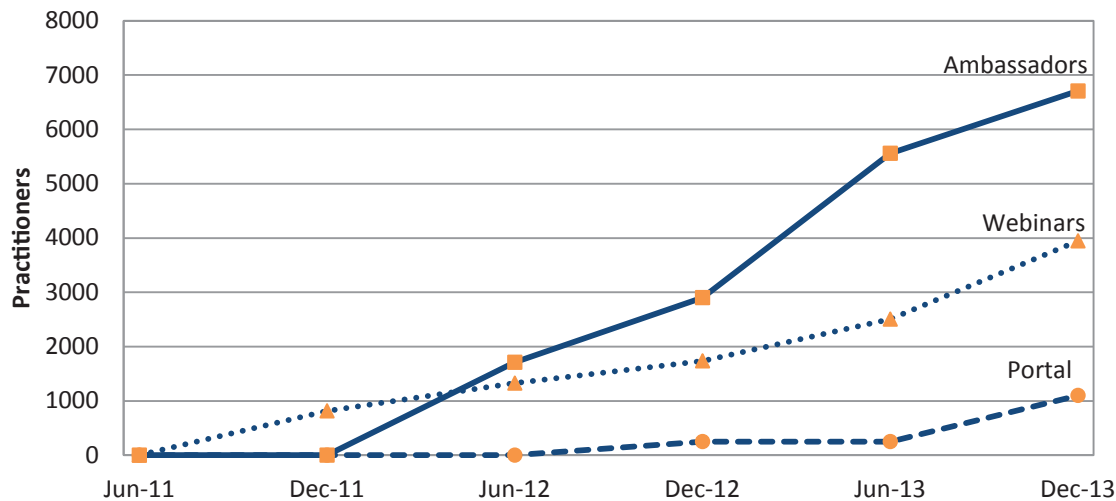
**Figure 3: Projects Across ACRP’s Research Fields\***



\*Uncategorized projects have been excluded.

In addition to publishing reports on industry-driven research priorities, ACRP works to ensure that these products reach those who need them most. In 2013, ACRP’s dissemination efforts reached a respectable “cruising altitude” through several coordinated outreach initiatives, including e-videos, webinars, workshops, speaker presentations, publications on applied results, ACRP Ambassadors, conference exhibits, and more. Together, these efforts reached several thousand stakeholders (see Figure 4).

**Figure 4: Practitioners Reached Through ACRP Outreach**



## What Is ACRP?

ACRP is an industry-driven, applied research program that develops near-term practical solutions to problems faced by airport operators. ACRP is managed by the Transportation Research Board of the National Academies and sponsored by the FAA. The research is conducted by contractors who are selected on the basis of competitive proposals.

The need for ACRP was identified in TRB's *Special Report 272: Airport Research Needs: Cooperative Solutions* in 2003, a study sponsored by the FAA. ACRP carries out applied research on problems that are shared by airport operating agencies and are not being adequately addressed by existing federal research programs. It is modeled after the successful National Cooperative Highway Research Program and Transit Cooperative Research Program. ACRP undertakes research and other technical activities in a variety of airport subject areas, including design, construction, maintenance, operations, safety, legal issues, policy, planning, human resources, and administration. ACRP provides a forum in which airport operators can cooperatively share lessons learned and address common operational problems and opportunities.

ACRP was authorized in December 2003 as part of the Vision 100-Century of Aviation Reauthorization Act. The primary participants in ACRP are:

- An independent governing board, the AOC, appointed by the Secretary of the U.S. Department of Transportation with representation from airport operating agencies, other stakeholders, and partner industry organizations;
- TRB as program manager and secretariat for the governing board; and
- FAA as program sponsor.



### ACRP Partner Industry Organizations

ACRP partners with leading airport industry associations, including:

- Airports Council International-North America (ACI-NA)
- American Association of Airport Executives (AAAE)
- National Association of State Aviation Officials (NASAO)
- Airport Consultants Council (ACC)
- Airlines for America (A4A)

In October 2005, the FAA executed a contract with the National Academies to formally initiate the program.

## How ACRP Works

Core to ACRP's success is the way in which the program engages airport practitioners to help identify gaps in knowledge and practice facing airports every day. For industry transparency and to facilitate practitioner involvement, ACRP follows an established research cycle that offers multiple points of entry and engagement (see Figure 5). The resulting cooperative process is proven and has been used successfully for more than 50 years by other TRB programs. It produces easy-to-use research products (in the form of reports, guidebooks, manuals, CDs, and other publications and tools) of immediate, relevant, and long lasting value to the airport industry.

Figure 5: ACRP Annual Research Cycle



The ACRP annual research cycle unfolds as follows:

- At the beginning of the year, ACRP solicits “problem statements” from the airport community, which identify issues and data gaps facing airport practitioners.
- In the spring, with problem statements in hand, ACRP volunteers meet to conduct a comprehensive review of the statements, ultimately selecting the most promising and worthwhile research ideas for funding.
- In the summer, the AOC meets to select problem statements for funding. Then, ACRP forms project panels of individuals with expertise and interest in the topic areas.



- In the early fall, project panels meet and are asked to use the original problem statements to develop detailed scopes of work that serve as a basis for requests for proposals (RFPs). They then prepare the RFPs, which ACRP distributes to the airport community through a variety of channels.
- In the winter, individuals and agencies respond to the RFPs by submitting proposals to perform the work. The project panels review the proposals and select contractors to perform the work.
- The project panels then provide technical guidance, review deliverables, and provide general oversight throughout the research phase of the projects.

Since 2005, ACRP has received more than 1,100 problem statements, covering a wide range of concerns. Over the past eight years, these problem statements submitted by industry practitioners have helped ACRP produce more than 200 research products.

## Serving and Involving Airport Practitioners

ACRP's broad mission is to provide resources to support applied research on a wide variety of issues faced by airport practitioners, including all levels of professional staff within the airport community, from CEOs, airport managers, and executive directors to mid-level managers and nonsupervisory technical and professional staff to trainees, students, and interns. These professionals represent airports, suppliers, public safety agencies, airlines, airport tenants, local and regional government authorities, equipment suppliers, industry associations, research and consulting firms, the media, the public, and many other stakeholders in the airport community. Each of these practitioners has different interests and responsibilities, and each is an integral part of this cooperative research effort.

Nobody is as focused on the needs of aviation as ACRP is, and that's why I see value in the program. I've used ACRP products, webinars, guidebooks, and synthesis reports. I have served on a panel, and now I'm serving as an Ambassador. What drives me is that I get to work with the finest aviation infrastructure in the world, and helping to improve on our system through the dissemination of ACRP research products is an honor for me.

– Vivek Khanna,  
Oklahoma Aeronautics Commission

ACRP offers many opportunities for airport practitioners to support and benefit from its work.

### *Problem Statements*

ACRP invites all stakeholders to submit problem statements at any time. Information on how to submit a problem statement and a list of previously funded projects are available on the ACRP homepage ([www.TRB.org/ACRP/ACRP.aspx](http://www.TRB.org/ACRP/ACRP.aspx)).

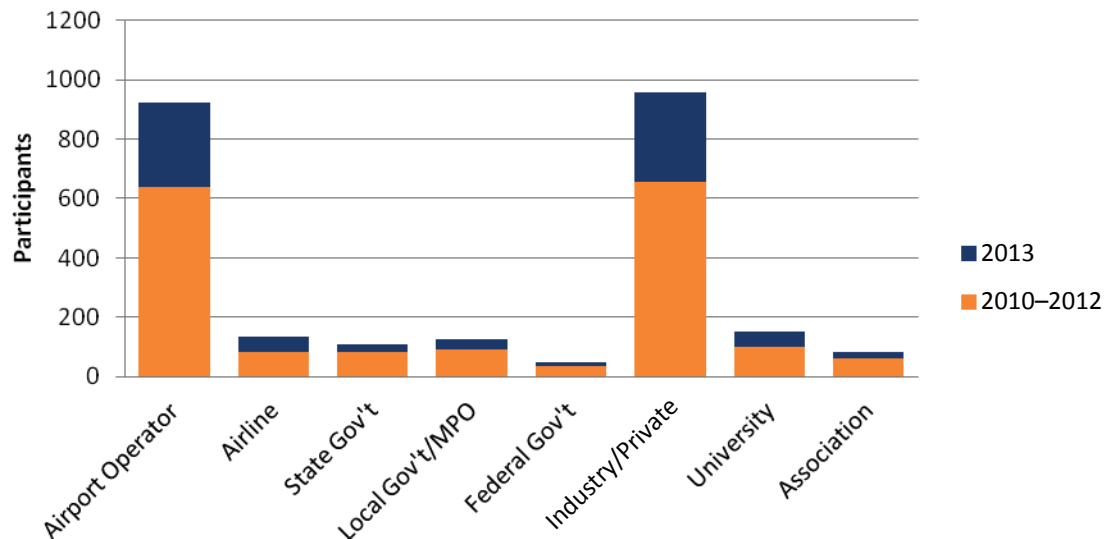
### *Volunteer Opportunities*

Airport practitioners are invited to volunteer in many ACRP activities to help peers learn about and understand the value of ACRP research products. For example, ACRP works with practitioners who volunteer to participate on project panels, serve as ACRP Ambassadors, present as a member of the ACRP Speaker's Bureau, and present on a webinar. As partners in dissemination, these individuals are critical to ACRP's mission.

- *Project Panels.* As part of the publication development process, ACRP recruits airport professionals to participate on project panels to provide techni-

cal guidance and counsel to research teams. Project panels must convene around topics ranging from customer service and community involvement to environmental issues, emergency response, and airport infrastructure (see Figure 6 for participation by sector). They help guide ACRP research by preparing project statements (RFPs), selecting contractors, and providing technical guidance and counsel throughout the life of the project.

**Figure 6: Panel Participation by Sector**



- *ACRP Ambassadors.* The Ambassador Program strengthens ACRP's connection to the airport industry and improves stakeholder awareness of, and access to, ACRP's solutions-based research products. Ambassadors serve as liaisons between TRB and ACRP audiences. In concert with ACRP, Ambassadors identify, select, and attend industry events within their geographic regions, staff the ACRP exhibit booth, describe and promote solutions (in the form of ACRP research products) to a wide array of issues affecting airports, and, as opportunities arise, present on other topics as needed.
- *Speaker's Bureau.* Airport practitioners and experts who conduct research on behalf of ACRP are also encouraged to present at industry forums by participating in ACRP's Speaker's Bureau. Speakers represent ACRP and increase awareness of its research products and value to the industry at regional conferences and workshops around the country.

The value of *ACRP Report 65* is that it is scalable to all airports, organizing important documented plans of cooperating organizations into one, easy-to-use resource.

– Daniel Rak,  
Terminal Services Supervisor,  
Fort Wayne International Airport

### **Conducting and Applying Research**

Once ACRP issues RFPs, airport professionals may become involved by directly conducting research. Since its founding in 2005, ACRP has funded hundreds of research projects across 11 research fields, distributing over \$86 million in funds to support the development of more than 200 publications.

All airport practitioners are encouraged to apply the research results from ACRP's ever-expanding library of

research reports, syntheses, and digests. All of these resources are available on the ACRP website and may be downloaded for free.

### **Graduate Award Program**

ACRP's Graduate Award Program was reintroduced in 2008 to encourage applied research on airport and related aviation system issues and to foster the next generation of aviation community leaders. The program is intended to stimulate thought, discussion, and research by those who may become future airport managers, operators, designers, and policy makers in aviation. Each year, ACRP selects applicants to participate in the program and conduct applied research to help the public sector continue to improve the quality, reliability, safety, and security of the U.S. civil aviation system into the foreseeable future. Appropriate topics may be drawn from a wide range of subjects of interest to the U.S. public-sector airport/aviation community. Applicants present their papers at TRB's Annual Meeting. Papers are included as part of the Compendium of Papers for TRB's Annual Meeting, and are considered for publication in the *Transportation Research Record*. From 2008 to 2013, 52 students participated, representing 25 different universities.



### **Dissemination**

To share how ACRP's research is applied in real-world conditions, ACRP publishes the Impacts on Practice (IOPs) series. Each issue highlights airports using solutions from ACRP research. ACRP encourages airport practitioners to submit examples of how they are using ACRP research results for inclusion in upcoming IOPs.

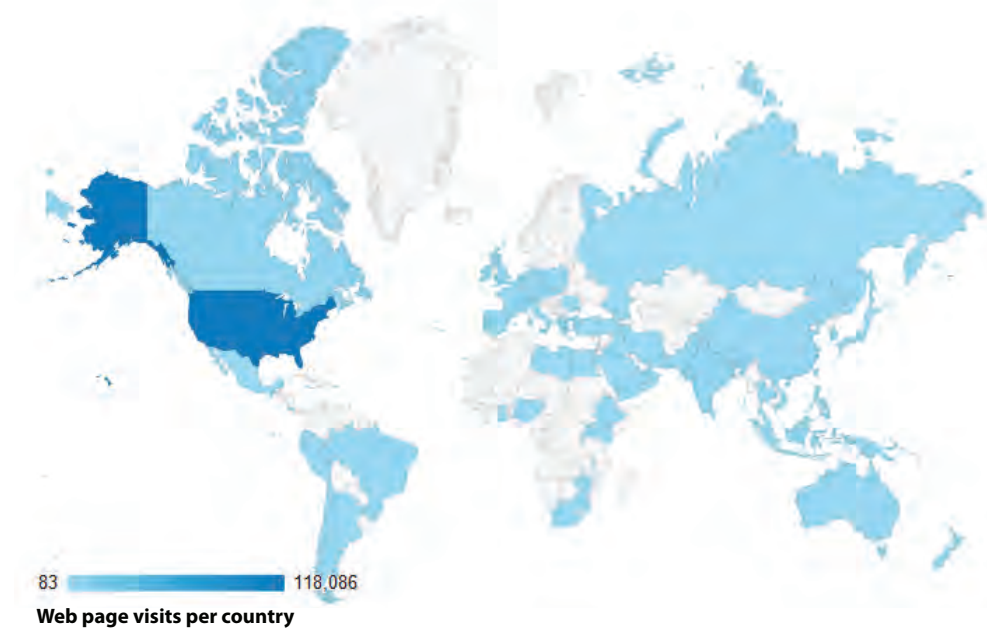
ACRP has a history of sharing information and research results through webinars. Past webinars are available online (<http://www.TRB.org/Aviation1/ElectronicSessions.aspx>). ACRP held its first webinars in 2011. Since then, ACRP has hosted 27 webinars reaching more than 5,000 practitioners.

New media, including social media outlets such as LinkedIn, Facebook, and Twitter, as well as e-videos and webinar technology, have revolutionized how individuals across the globe obtain information and interact with others who share their interests—at little or no costs beyond development. ACRP has been at the forefront of using this technology to serve its mission.

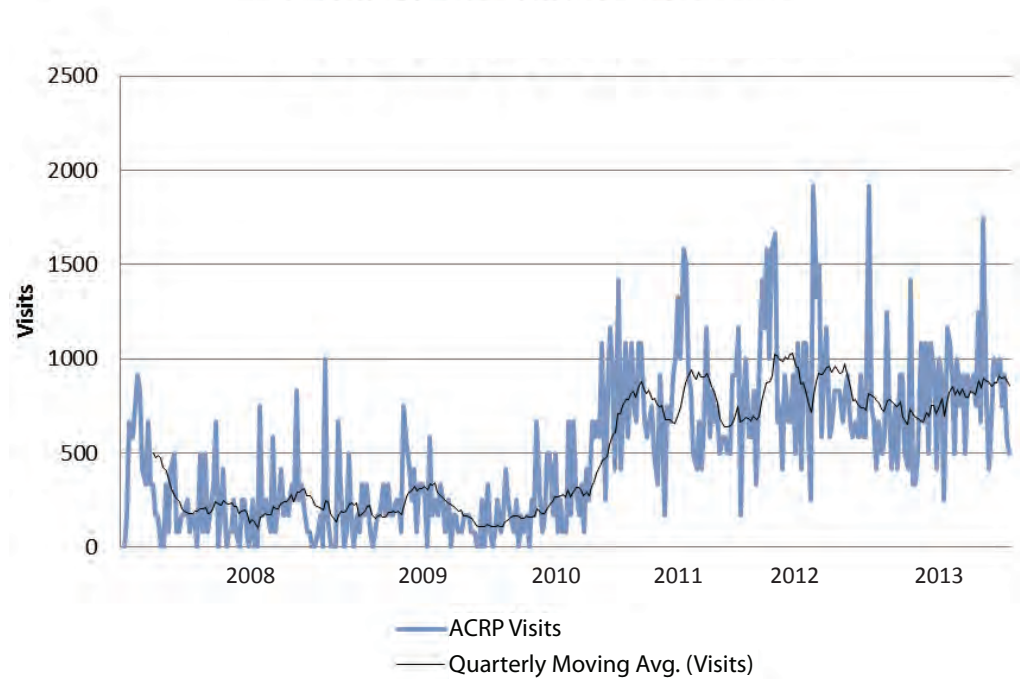
Started in late 2010, ACRP's LinkedIn discussion group now includes more than 2,200 members, more than half of whom are at a senior or managerial level within their organizations. ACRP established a Facebook page a year later and currently has several hundred "likes." Social media tools continue to serve as an important and interactive source of information and announcements on news relating to new publications, events, and opportunities to engage in the program.

ACRP's web pages serve as one of its primary tools for sharing information with airport practitioners. Housed under TRB's website ([www.TRB.org](http://www.TRB.org)), ACRP's pages attract visitors from all 50 states and many foreign countries, including Canada, India, United Kingdom, Brazil, China, and France (Figure 7). While most of ACRP's visitors come via Google searches, 25 percent of ACRP's total web visitors come directly to the site, not through a search engine or third-party referral, indicating a strong awareness of the site on the part of many web visitors. Since the launch of the ACRP web pages in 2007, visits overall have been increasing from year to year, and in 2013 total visits exceeded 170,000, of which more than 112,000 were unique visits (Figure 8).

**Figure 7: Worldwide Web Coverage for ACRP Publications**



**Figure 8: Growth of Visits to ACRP Website since 2007**



## Major Accomplishments of 2013

### *Reaching the Airport Community with the Information It Needs*

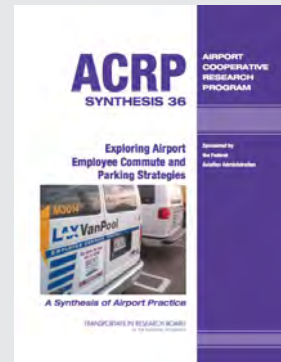
ACRP's research products and publications have greatly contributed to and enhanced solutions to real-world airport problems. ACRP publications include project reports, synthesis reports, research digests, and the Impacts on Practice series.

In 2013, ACRP produced 39 publications, including 19 reports, one research digest, four legal digests, and 11 syntheses. Some of the most frequently downloaded reports include:

- *ACRP Synthesis 40: Issues with Airport Organization and Reorganization* examines organizational design and features a Flight Plan of critical considerations that airport managers use when organizing or reorganizing their airport functions for maximum effectiveness.
- *ACRP Synthesis 46: Conducting Airport Peer Reviews* reveals a range of peer review formats being used at airports when faced with challenging circumstances and the need to reach out to those in similar situations for workable solutions.
- *ACRP Synthesis 43: Environmental Assessment of Air and High-Speed Rail Corridors* provides examples of where the modes are compared through academic research and NEPA impact reports for specific environmental effects, and where additional research can improve the ability to assess the environmental outcomes of these two systems.

Many of ACRP's products offer innovations and new tools that serve airport practitioners. The documents listed here illustrate some of ACRP's innovative reports and tools that were developed this year.

- *ACRP Report 93: Operational and Business Continuity Planning for Prolonged Airport Disruptions* provides a guidebook and business continuity software tool for airport operators to assist, plan, and prepare for disruptive and catastrophic events that have the potential for causing prolonged airport closure that result in adverse impacts to the airport and the local, regional, and national economies.



This year, *ACRP Synthesis 36: Exploring Airport Employee Commute and Parking Strategies* was awarded the Association for Commuter Transportation 2013 Excellence in Scholarship Award. *ACRP Synthesis 36* addresses alternatives to the drive-alone commute for airport employees, the effectiveness and challenges of airport employee commute options programs, and commute options programs offered by non-airport employers that might be applicable to the airport environment.







- *ACRP Report 83: Assessing Opportunities for Alternative Fuel Distribution Programs* provides a guidebook and toolkit for airports to introduce and market alternative fuels to their airport community that includes tenants and consumers off airport.

In 2013, ACRP published four IOPs.



- *Contingency Planning for Unexpected Passenger Delays* describes how Fort Wayne International Airport and Buffalo Niagara International Airport have developed and implemented IROPS plans based on *ACRP Report 65: Guidebook for Airport Irregular Operations (IROPS) Contingency Planning*.

- *Maximizing Airport Facility Utilization and Efficiency with Common-Use Resources* describes how the San Diego County Regional Airport Authority implemented common-use systems using techniques presented in *ACRP Report 30: Reference Guide on Understanding Common Use at Airports*.

- *Implementing Effective Airport Marketing Approaches to Tenants and the Community* shares lessons learned by Fort Wayne International Airport as it implemented the seven easy-to-follow steps presented in *ACRP Report 28: Marketing Guidebook for Small Airports*.



- *Evaluating Terminal Renewal and Replacement Options* describes how airport personnel from the Port Authority of New York and New Jersey used *ACRP Report 68: Guidebook for Evaluating Terminal Renewal Versus Replacement Options* for Terminal A at Newark Liberty International Airport.

## Delivering Research into the Hands of Those Who Need It Most: Airport Practitioners

ACRP hit a high point for dissemination in 2013, as many of the dissemination activities it previously launched began to bear results. Whether through face-to-face interactions, presentations at industry gatherings, or leveraging new media channels, ACRP is making sure that its research is being disseminated to airport practitioners, that they are using it, and that they are becoming more engaged with ACRP. Highlights include launching the ACRP Ambassador Program, revitalizing the ACRP Speaker's Bureau, sustaining ACRP's presence at key industry conferences and events, hosting information sessions and workshops at major airports, expanding the ACRP webinar series, and creating ACRP e-videos.

## Reaching Airport Practitioners Face-to-Face

ACRP recognizes that one of the most effective ways to reach airport practitioners is through in-person interactions. In 2013, ACRP's Ambassador Program helped disseminate ACRP results and engagement opportunities to airport professionals around the country.



The second year of the ACRP Ambassador Program saw the installation of eight new airport professionals as the 2013 ACRP Ambassador cohort. ACRP conducted an Ambassador orientation program in March 2013 to provide Ambassadors with information on the ACRP research process, familiarize them with the policies and procedures of the program, and summarize recent and ongoing ACRP research projects. For most of 2013, ACRP had a total of 16 Ambassadors serving the program. These Ambassadors attended 29 airport industry events across the country, reaching approximately 5,000 practitioners through direct Ambassador–practitioner interactions.

### ***Attending Industry Conferences and Events, Leveraging Airports and Other Organizations***

ACRP staff attend, participate in, and present at airport industry events throughout the year, and these events present valuable opportunities to reach practitioners and distribute ACRP research results during formal presentations and informal interactions. In 2013, staff attended more than a dozen industry events, interacting with thousands of attendees over the course of the year. In 2013, more than 600 individuals volunteered to serve as panel members. ACRP also hosts information sessions and workshops at major airports across the country to publicize its research.

In 2013, the Speaker’s Bureau included 25 individuals with affiliations in the private sector, academia, and state and federal government. ACRP continually looks for areas of improvement across its various dissemination programs and activities. In 2013, ACRP conducted a survey of Speaker’s Bureau representatives to gather valuable feedback and determine areas for development and improvement within the program, which it will begin to implement in 2014.

### ***Leveraging New Media to Scale Dissemination Efforts***

In 2013, ACRP established an ACRP Ambassador Twitter account (@ACRPambassadors) to enhance recruiting, program name recognition, and event-specific Ambassador activities. The account uses conference, event, and industry hashtags to develop searchable ACRP content on Twitter and to publicize Ambassador activities. By the end of 2013, the ACRP Ambassador Twitter account already had 300 followers.

ACRP continues to exploit web technology to deliver and publicize ACRP research results and activities via LinkedIn and Facebook. Building on its success of previous years, ACRP launched an expanded webinar series in 2013, producing 10 webinars that in total attracted more than 2,200 participants and involved 36 key researchers of ACRP publications as speakers and moderators. Speakers presented 26 different ACRP reports that supported the following themes.

### **ACRP’s Ambassadors for 2013–2014**

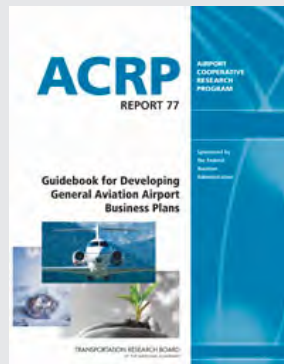


From left to right: Christopher Willenborg, Alex Kashani, Gary Shafer, Dan Frazee, Linda Howard, Frederick Busch, and Craig Williams.



### **ACRP’s Ambassador Twitter Page**

- *Environmental planning for airport winter conditions.* Safe winter operations are critical to airports. ACRP research and a 2013 webinar examined aircraft deicing materials and stormwater management.
- *Airport organization and workforce development.* ACRP supports practitioners and managers with guidance on trends and effective organizational practices, including in-depth case studies. A 2013 webinar related to *ACRP Synthesis 40* and received the highest satisfaction rating of all webinars in 2013.
- *Managing small airports.* ACRP has developed resources to provide a range of practical guidance to small-airport managers on financial, administrative, operational, and technical issues as well as airport business plans.



*ACRP Report 77: Guidebook for Developing General Aviation Airport Business Plans*, one of the most frequently downloaded reports produced in 2012, continued to be popular in 2013. The report was featured in ACRP's 2013 spring webinar, "Managing Small Airports."

- *Airport planning with uncertainty in traffic and fuel price forecasting.* ACRP shares strategies to help address fluctuations in traffic and fuel price for airport managers.
- *Airport emergency management and IROPS.* Practitioners at all airports require tools for managing emergencies and IROPS. ACRP research has developed step-by-step templates and customizable resources to help airport managers during these unexpected events.
- *Airport legal research digests.* Since 2006, ACRP has focused on providing legal research and reports on topics of interest including federal, state, and local regulations; day-to-day operations and tenant activities; and airport governance.
- *Understanding and mitigating disease transmission at airports.* Research provides practitioners with prevention and control strategies to reduce exposure of transmittable diseases.
- *Capital planning considerations for airport improvements.* Publications on airport planning, as well as design, are commonly used ACRP resources. For example, *ACRP Report 25: Airport Passenger Terminal Planning and Design* contains spreadsheet models and sample data sets to assist planners.
- *Airport emissions inventories and reduction strategies.* Regulations and best practices are researched and shared to help practitioners meet requirements.
- *Airport sustainability practices and strategies.* ACRP oversees research projects focusing on sustainability to educate airport managers on alternatives fuels and products in order to minimize the environmental impact of airports and support the values of customers and local communities.

ACRP's webinars attracted attendees representing executive, technical, and administrative level airport employees from airports of all sizes in nearly every state. In post-webinar surveys, 88 percent of webinar attendees reported that they were "greatly satisfied" or "satisfied" with the ACRP webinar they attended.

In 2013, ACRP also produced an e-video on problem statement development. The e-video guides airport practitioners through the process of creating and submitting a problem statement and encourages members of the airport industry to use problem statements as a tool to suggest research topics for ACRP. The e-video, titled “Developing an ACRP Problem Statement,” is posted to the ACRP web site (<http://www.trb.org/ACRP/ACRP.aspx>).



ACRP e-video, “Developing an ACRP Problem Statement,” with Craig Williams.



## Contingency Planning for Unexpected Passenger Delays

**S**afety and reliability are critical issues in the airport industry just as price and location are in retail sales. However, unlike location, airport reliability is consistently under siege from unexpected events such as extreme weather, geological events, power outages, and security threats. Any of these can result in excessive passenger delays and irregular operations (IROPS). Appropriate planning and coordination between the various organizations involved in air transportation can mitigate the severity of irregular operations. IROPS require non-standard actions from a variety of aviation service providers. *ACRP Report 65: Guidebook for Airport Irregular Operations (IROPS) Contingency Planning* (2012) is a resource to assist

airports in the development of irregular operations contingency plans in close collaboration with all service providers. *ACRP Report 65* features numerous resources that can be customized to the user's specific airport. These resources include guidance on the topics to include in a plan, checklists, worksheets, sample agendas, and a sample IROPS plan. As with any successful initiative, the development and usefulness of an IROPS plan require a point person, or IROPS Champion, to facilitate the coordination between all service providers and the creation of an airport's IROPS plan. An IROPS plan is a dynamic plan that should grow and change over time as new situations are encountered and lessons are learned that can improve future actions.

quick response when an event occurs. Additionally, Mr. Rak remarked that "*ACRP Report 65* is scalable to all airports organizing important documented plans of cooperating organizations into one, easy-to-use resource." The IROPS Plan for FWA includes a checklist for diverted aircraft, gate use plans, runway use plans, aircraft specifications, and individual plans for airlines and concessionaires. The FWA IROPS Plan was developed for numerous unexpected events; however, one event type was a regular occurrence – flight diversions – that could benefit from formalized plans. The formal documented plan was seen as an opportunity to provide quality customer service while streamlining communication efforts as the situation develops. Particularly during a diversion event, this plan ensures a high level of service to existing airport customers as well as those on the diverted aircraft. FWA schedules post-event conference calls with stakeholders to review lessons learned during the event that will later be incorporated into a bi-annual review of the plan and an annual IROPS workshop – these activities ensure that the IROPS plan is relevant, current, and state of the art.



Airport staff at Fort Wayne International Airport (FWA) in Indiana have developed and implemented an IROPS plan based on *ACRP Report 65*. Daniel Rak, terminal services supervisor for FWA, noted that the value of *ACRP Report 65* is that it enables diverse airport stakeholders to document their individual plans and develop a cohesive, comprehensive plan for the airport that would allow for a

Buffalo Niagara International Airport (BNIA) has also developed and implemented an IROPS plan based on *ACRP Report 65*. The IROPS Plan for BNIA includes a communication flow chart for information sharing, consolidated tracking of actions during the event, defined support for passengers, and resources. The defined areas of coordinated support for passengers include: (1) support for deplaning passengers, (2) sharing facilities, and (3) providing a sterile area for passengers who have not cleared U.S. Customs and Border Protection.

Right:  
Aircraft diversion to  
Fort Wayne International  
Airport on July 5, 2012.

Photo courtesy of Dan Rak.





The passenger support defines roles and activities for airlines, airport staff, the FBO, concessionaires, and the FAA while the passengers are onboard, deplaning, and in the terminal. A resource inventory beyond the initial planned shared use includes a listing of ground equipment, mats, food, water, and fuel that can be requested during an IROPS event.

Tom Dames, airfield superintendent at BNIA, values the role of contingency planning and communication: “Before the plan, many of our associates were not well prepared for irregular operations. The contingency plan has eliminated the fear of having to support an IROP activity alone and with little experience. Now, the amount and frequency of communication across the airport’s departments, the airlines, and supporting resources has increased for each diverted flight. This communication flow has led to several well-supported diverted flights that probably would have

been delayed on the apron for additional minutes under the inefficient practice.”

Understanding an airport’s current response capabilities is an important step in the development of an IROPS plan. *ACRP Report 65* provides detailed checklists and tables to assist with the compilation of existing IROPS event response capabilities. The following topics and related components provide a summary of the type of information that should be included in the capability documentation:

*Availability of Services during an IROPS Event*

- Existing procedures.
- Airport’s goals for service to passengers and other customers.
- Contingency response procedures.
- Coordination with other local service providers.

*Coordination of Services during an IROPS Event*

- Challenges of coordination between two or more service providers.
- Challenges dependent on whether it is a departure or arrival.
- Steps to improve the availability of service.

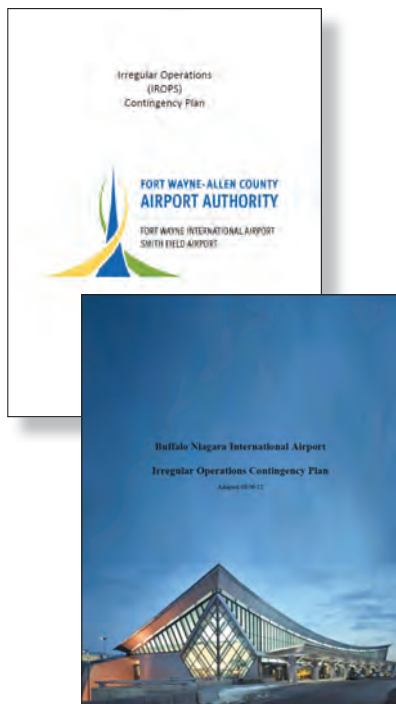
*Pre-position of Resources Required during an IROPS Event*

- Necessary resources.
- Arrangements/procedures for shared resources.
- Steps to ensure passenger’s needs are met during extended stays in the terminal.

*Sharing Situational Information during an IROPS Event*

- Type of information being shared.
- Mechanism for sharing information.
- Use of the information by each service provider.

*Left:*  
*Irregular Operations Contingency Plan* report covers for Fort Wayne International Airport (top image) and Buffalo Niagara International Airport (bottom image).



## Better Customer Service through Collaboration

“The purpose of the Buffalo Niagara International Airport IROPS response management process is to identify and document actions requiring coordination between two or more aviation service providers. Joint actions are identified that reflect both current individual contingency plans and areas of recommended communication, collaboration, and coordination between service providers.”

*Buffalo Niagara International Airport  
Irregular Operations Contingency Plan*

- Additional beneficial shared information.
- Coordination procedures for service providers to assist each other during an extended delay, diversion, or special mobility event.
- Procedure to report the effectiveness of the response to meeting passenger needs during an event by each service provider, individually and collectively, to establish lessons learned and improve response.

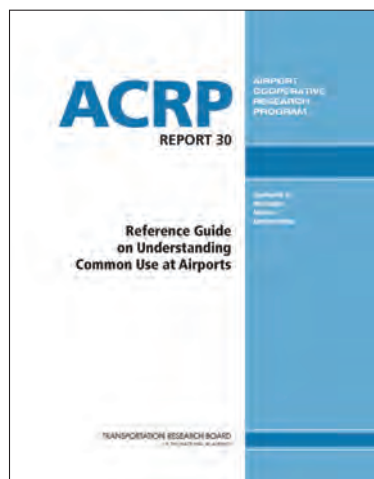
**ACKNOWLEDGMENT OF SPONSORSHIP:** This work was sponsored by the Federal Aviation Administration and was conducted in the Airport Cooperative Research Program, which is administered by the Transportation Research Board of the National Academies.

**DISCLAIMER:** The opinions and conclusions expressed or implied in ACRP publications are those of the research agencies. They are not necessarily those of the Transportation Research Board, the National Research Council, or the program sponsors.



# Maximizing Airport Facility Utilization and Efficiency with Common-Use Resources

**T**he common-use facility allocation and management approach is an alternative to the traditional reliance on exclusive-use facilities. Common-use systems can increase the utilization and flexibility of a facility, and subsequently reduce costs, by providing an interface that allows the use of proprietary systems from multiple airlines. Although the principles and benefits involved in common-use resources are apparent, the application of common use should be carefully designed to optimize results. *ACRP Report 30: Reference Guide on Understanding Common Use at Airports* (2010) addresses the various business aspects, provides feasibility assessment techniques, and details standard practices of common use.



Right:  
San Diego County Regional  
Airport Authority Action  
Committee for Common  
Use kickoff meeting.

Photo courtesy of SDCRAA.

*ACRP Report 30* details the essential considerations for implementation of common use in the operational areas of planning, design and construction, terminal operations, airside operations, facilities maintenance, and technology. The areas emphasize the importance of business justifications for common use, cooperation and trust among agencies and businesses, consideration of the effects of airport characteristics, common goals, and required resources.

One popular and typically effective common-use function is gate operation. Common-use gates can add value, provide flexibility and functionality, increase gate position utilization, lower airline facility costs, and accommodate temporary needs. However, for these advantages to be realized, airlines must cooperate and coordinate activities, which can be encouraged by airport operator installations that are consistent with airline desires. Other examples of common-use airport applications include check-in counters, passenger processing, terminal services, curbside services, janitorial services, ramp control, cargo operations, ramp and ground handling, communications infrastructure, and business software systems.



*ACRP Report 30* provides a roadmap for practitioners to implement the principles of common use. San Diego International Airport (SAN) is one airport that utilized the report to implement new business models for common use. The roadmap provides essential information about the basics of common-use practices for communicating with stakeholders, specifies assessment processes for common-use capabilities, and describes necessary steps to develop strategies for implementation.

Airport management at SAN convened the first meeting of their Action Committee for Common Use in January 2011. The purpose of the committee was to provide a forum for discussion and information exchange among the airport management, aviation consultants, airlines using the airport, and common-use experts (including one of the authors of *ACRP Report 30*). The initial committee meeting included 33 individuals and served as the opener for nine additional meetings.

In consonance with *ACRP Report 30*, the committee established goals to: 1) provide an effective communication forum; 2) outline policies and procedures; 3) ensure common-use implementation aligns with business strategies and goals; 4) establish criterion and measures; and 5) account for all stakeholders' interests. As a final product, the committee developed a comprehensive set of recommendations and considerations for common-use implementations.

In response to their use of the report, Peter Aarons, program manager of Airport Design and Construction at San Diego County Regional Airport Authority, remarked that, "*ACRP Report 30* was

*continued on page 2*

instrumental in our process for common use. Having a nationally recognized model to follow gave us the confidence and background information needed to assemble stakeholders, lead the discussion of implementing common-use business models, and move towards achieving our goals. The roadmap proved to be especially helpful for our airport.”

The steps followed by SAN (consistent with *ACRP Report 30*) for common-use implementation include:

1. Conduct an audit of current activities and review common-use criteria.
2. Establish a committee comprised of stakeholders.
3. Perform cost-benefit analyses.
4. Formulate an implementation decision.
5. Create and refine common-use strategies.
6. Provide training and education.
7. Execute common-use strategies.
8. Review and refine strategies.
9. Document lessons learned.
10. Reconvene committee to review initial common-use implementation.
11. Reunite committee at regular intervals to improve common-use processes.
12. Disseminate findings to the aviation community to improve the state of the practice.

SAN has completed the majority of the process with ongoing efforts in Step 11 and a future goal of disseminating lessons learned in Step 12. The image below illustrates the steps of the roadmap for developing common-use processes.

The roadmap process can support an airport in developing and adapting common-use approaches into its own unique airport environment. Successful realization of common-use advantages is possible through open and effective communication with all users and by exploring qualitative and quantitative benefits for all stakeholders. Airport staff and businesses must understand the value and benefit of common-use approaches for processing passengers, receive support from executive leaders, and have processes in place to support collaborative decision making.

Legal and business arrangements are critical for airport operators who manage common-use facilities. *ACRP Report 30* provides essential details about fee structures and considerations for usage of the facilities. The considerations include cost distribution (by square footage or other measure), rates and charges (by landed weight, passengers, turns, or use),

### The following business drivers need to be considered when looking at common-use implementation:

- Maximize existing facility utilization
- Avoid or defer capital costs
- Maximize facility flexibility
- Decrease the airport's cost of doing business
- Decrease the airline's cost of doing business
- Improve the quality of service to airlines
- Improve the quality of service to passengers
- Increase opportunities for airlines to add or expand service
- Gain a competitive advantage over other airports

*ACRP Report 30: Reference Guide on Understanding Common Use at Airports*



leasing arrangements and preferences, liability and safety, assets, competitive factors, customer service, marketing, and sustainability. Airport operators might also consider minimum use or take-back criteria, such as operations per gate per day, passengers per gate, seats, or departures per gate per day, which would set a minimum level of use for an airline to sustain gate usage.

Left:  
Illustration of the steps of the roadmap for developing common-use processes at airports.

**ACKNOWLEDGMENT OF SPONSORSHIP:** This work was sponsored by the Federal Aviation Administration and was conducted in the Airport Cooperative Research Program, which is administered by the Transportation Research Board of the National Academies.

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## APPENDIX A. Publications of the Airport Cooperative Research Program

Reports		
No.	Proj. No.	Title, Pages, Publication Year
1	11-02/Task 04	Safety Management Systems for Airports, Vol. 1: Overview, 40 p. (2007)
1	04-05	Safety Management Systems for Airports, Vol. 2: Guidebook, 174 p. (2009)
2	11-02/Task 03	Evaluation and Mitigation of Aircraft Slide Evacuation Injuries, 86 p. (2008)
3	04-01	Analysis of Aircraft Overruns and Undershoots for Runway Safety Areas, 58 p. (2008)
4	11-02/Task 02	Ground Access to Major Airports by Public Transportation, 214 p. (2008)
5	11-02/Task 05	Quarantine Facilities for Arriving Air Travelers: Identification of Planning Needs and Costs, 34 p. (2008)
6	02-04	Research Needs Associated with Particulate Emissions at Airports, 64 p. (2008)
7	02-03	Aircraft and Airport-Related Hazardous Air Pollutants: Research Needs and Analysis, 64 p. (2008)
8	04-02	Lightning-Warning Systems for Use by Airports, 80 p. (2008)
9	02-04A	Summarizing and Interpreting Aircraft Gaseous and Particulate Emissions Data, 90 p. (2008)
10	07-01	Innovations for Airport Terminal Facilities, 78 p. (2008)
11	02-06	Guidebook on Preparing Airport Greenhouse Gas Emissions Inventories (& WOD 2), 62 p. (2009)
12	05-01	An Airport Guide for Regional Emergency Planning for CBRNE Events, 52 p. (2009)
13	01-03	Integrating Airport Information Systems, 98 p. (2009)
14	02-02	Deicing Planning Guidelines and Practices for Stormwater Management Systems, 208 p. (2009)
15	02-05	Aircraft Noise: A Toolkit for Managing Community Expectations (& CD 70), 162 p. (2009)
16	01-01	Guidebook for Managing Small Airports (& WOD 5), 140 p. (2009)
17	10-04	Airports and the Newest Generation of General Aviation Aircraft, Vol. 1: Forecast, 36 p. (2009)
17	10-04	Airports and the Newest Generation of General Aviation Aircraft, Vol. 2: Guidebook, 124 p. (2009)
18	03-08	Passenger Air Service Development Techniques, 168 p. (2009)
19	01-06	Developing an Airport Performance Measuring System (& CD 79), 154 p. (2010)
19A	01-09	Resource Guide to Airport Performance Indicators (& CD 94), 288 p. (2011)
20	03-09	Strategic Planning in the Airport Industry (& CD 73), 136 p. (2009)
21	01-05	A Guidebook for Selecting Airport Capital Project Delivery Methods, 100 p. (2009)
22	06-01	Helping Airport and Air Carrier Employees Cope with Traumatic Events, 82 p. (2009)
23	03-02	Airport Passenger-Related Processing Rates Guidebook, 126 p. (2009)
24	10-03	Guidebook for Evaluating Airport Parking Strategies and Supporting Technologies, 162 p. (2009)
25	07-05	Airport Passenger Terminal Planning and Design, Vol. 1: Guidebook, 426 p. (2010)
25	07-04	Airport Passenger Terminal Planning and Design, Vol. 2: Spreadsheet Models and User's Guide (& CD 75), 82 p. (2010)
26	03-04	Guidebook for Conducting Airport Users Surveys, 256 p. (2009)
27	03-03	Enhancing Airport Land Use Compatibility, Vol. 1: Land Use Fundamentals and Implementation Resources, 316 p. (2010)
27	03-03	Enhancing Airport Land Use Compatibility, Vol. 2: Land Use Survey and Case Study Summaries, 296 p. (2010)
28	01-04	Marketing Guidebook for Small Airports, 196 p. (2010)
29	07-03	Developing Improved Civil Aircraft Arresting Systems, 206 p. (2010)
30	10-05	Reference Guide on Understanding Common Use at Airports (& CD 74), 244 p. (2010)
31	03-10	Innovative Approaches to Addressing Aviation Capacity Issues in Coastal Mega-regions, 178 p. (2010)
32	04-06	Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airports, 192 p. (2010)
33	01-02	Guidebook for Developing and Managing Airport Contracts (& CD 81), 82 p. (2011)
34	10-06	Handbook to Assess the Impacts of Constrained Parking at Airports (& CD 80), 112 p. (2010)
35	10-02	Planning for Offsite Airport Terminals, 94 p. (2010)
36	01-07	Airport/Airline Agreements--Practices and Characteristics, 112 p. (2010)

<b>Reports</b>		
No.	Proj. No.	Title, Pages, Publication Year
37	03-06	Guidebook for Planning and Implementing Automated People Mover Systems at Airports (& CD 82), 226 p. (2010)
37A	03-07	Guidebook for Measuring Performance of Automated People Mover Systems at Airports, 134 p. (2012)
38	03-13	Understanding Airspace, Objects, and Their Effects on Airports, 164 p. (2010)
39	09-01	Recommended Guidelines for the Collection and Use of Geospatially Referenced Data for Airfield Pavement Management, 108 p. (2010)
40	07-02	Airport Curbside and Terminal Area Roadway Operations, 40 p. (2010)
41	10-07	Guide to the Decision-Making Tool for Evaluating Passenger Self-Tagging (& CD 83; & WOD 10), 70 p. (2011)
42	08-01	Sustainable Airport Construction Practices (& CD 88), 320 p. (2011)
43	02-13	Guidebook of Practices for Improving Environmental Performance at Small Airports (& CD 89), 364 p. (2011)
44	03-11	A Guidebook for the Preservation of Public-Use Airports (& CD 102), 62 p. (2011)
45	10-01	Optimizing the Use of Aircraft Deicing and Anti-Icing Fluids, 180 p. (2011)
46	02-07	Handbook for Analyzing the Costs and Benefits of Alternative Aviation Turbine Engine Fuels at Airports (& CD 91), 78 p. (2011)
47	01-08	Guidebook for Developing and Leasing Airport Property, 140 p. (2011)
48	03-15	Impact of Jet Fuel Price Uncertainty on Airport Planning and Development (& CD 93), 72 p. (2011)
49	01-10	Collaborative Airport Capital Planning Handbook, 136 p. (2011)
50	04-08	Improved Models for Risk Assessment of Runway Safety Areas (& CD 98), 182 p. (2011)
51	04-09	Risk Assessment Method to Support Modification of Airfield Separation Standards, 136 p. (2011)
52	07-06	Wayfinding and Signing Guidelines for Airport Terminals and Landside, 252 p. (2011)
53	02-11	A Handbook for Addressing Water Resource Issues Affecting Airport Development Planning, 170 p. (2011)
54	01-11	Resource Manual for Airport In-Terminal Concessions, 268 p. (2011)
55	03-05	Passenger Level of Service and Spatial Planning for Airport Terminals, 70 p. (2011)
56	02-10	Handbook for Considering Practical Greenhouse Gas Emission Reduction Strategies for Airports (& CD 95), 158 p. (2011)
57	11-02/Task 18	The Carbon Market: A Primer for Airports, 80 p. (2011)
58	11-02/Task 15	Airport Industry Familiarization and Training for Part-Time Airport Policy Makers, 64 p. (2011)
59	01-12	Information Technology Systems at Airports: A Primer, 108 p. (2012)
60	02-18	Guidelines for Integrating Alternative Jet Fuel into the Airport Setting, 136 p. (2012)
61	10-09	Elimination or Reduction of Baggage Recheck for Arriving International Passengers, 142 p. (2012)
62	04-07	Airport Apron Management and Control Programs, 64 p. (2012)
63	02-03A	Measurement of Gaseous HAP Emissions from Idling Aircraft as a Function of Engine and Ambient Conditions, 112 p. (2012)
64	02-25	Handbook for Evaluating Emissions and Costs of APU's and Alternative Systems (& CD 113), 90 p. (2012)
65	10-10	Guidebook for Airport Irregular Operations (IROPS) Contingency Planning, 258 p. (2012)
66	01-14	Considering and Evaluating Airport Privatization (& CD 109), 124 p. (2012)
67	03-14	Airport Passenger Conveyance Systems Planning Guidebook (& CD 110), 68 p. (2012)
68	07-07	Guidebook for Evaluating Terminal Renewal Versus Replacement Options (& CD 112), 152 p. (2012)
69	01-16	Asset and Infrastructure Management for Airports: Primer and Guidebook, 136 p. (2012)
70	10-08	Guidebook for Implementing Intelligent Transportation Systems Elements to Improve Airport Traveler Access Information (& CD 114), 138 p. (2012)
71	02-08	Guidance for Quantifying the Contribution of Airport Emissions to Local Air Quality (& CD 115), 76 p. (2012)
72	02-14	Guidebook for Selecting Methods to Monitor Airport and Aircraft Deicing Materials, 276 p. (2012)
73	04-10	Airport-to-Airport Mutual Aid Programs, 192 p. (2012)
74	01-18	Application of Enterprise Risk Management at Airports (& CD 117), 72 p. (2012)



## Reports

No.	Proj. No.	Title, Pages, Publication Year
75	06-02	Airport Leadership Development Program (& CD 133), 334 p. (2013)
76	03-22	Addressing Uncertainty about Future Airport Activity Levels in Airport Decision Making, 152 p. (2012)
77	01-17	Guidebook for Developing General Aviation Airport Business Plans (& CD 119), 174 p. (2012)
78	02-16	Airport Ground Support Equipment (GSE): Emission Reduction Strategies, Inventory, and Tutorial (& CD 123), 114 p. (2012)
79	03-17	Evaluating Airfield Capacity (& CD 124), 172 p. (2012)
80	02-22	Guidebook for Incorporating Sustainability into Traditional Airport Projects (& CD 125), 104 p. (2012)
81	02-19	Winter Design Storm Factor Determination for Airports, 60 p. (2012)
82	03-12	Preparing Peak Period and Operational Profiles—Guidebook (& CD 126; & WOD 14), 146 p. (2013)
83	02-36	Assessing Opportunities for Alternative Fuel Distribution Programs (& CD 129), 128 p. (2013)
84	02-21	Guidebook for Preparing Airport Emissions Inventories for State Implementation Plans (& CD 131), 68 p. (2013)
85	03-21	Developing and Maintaining Support for Your Airport Capacity Project, 40 p. (2013)
86	02-12	Environmental Optimization of Aircraft Departures: Fuel Burn, Emissions, and Noise (& CD 136), 104 p. (2013)
87	01-20	Procuring and Managing Professional Services for Airports, 120 p. (2013)
88	04-11	Guidebook on Integrating GIS in Emergency Management at Airports (& CD 139), 138 p. (2013)
89	02-24	Guidelines for Airport Sound Insulation Programs, 324 p. (2013)
90	03-25	Impact of Regulatory Compliance Costs on Small Airports (& WOD 15 Vol. 1; & WOD 15 Vol. 2), 92 p. (2013)
91	02-20A	Infectious Disease Mitigation in Airports and on Aircraft, 38 p. (2013)
92	10-11	Guidebook to Creating a Collaborative Environment Between Airport Operations and Maintenance, 148 p. (2013)
93	03-18	Operational and Business Continuity Planning for Prolonged Airport Disruptions (& CD 140), 152 p. (2013)
94	04-12	Integrating Web-Based Emergency Management Collaboration Tools into Airport Operations—A Primer, 56 p. (2013)
95	04-13	Integrating Community Emergency Response Teams at Airports, 168 p. (2013)
96	07-09	Apron Planning and Design Guidebook, 168 p. (2013)
97	02-17	Measuring PM Emissions from Aircraft Auxiliary Power Units, Tires, and Brakes, 52 p. (2013)
98	03-26	Understanding Airline and Passenger Choice in Multi-Airport Regions, 98 p. (2013)
99	02-29	Guidance for Treatment of Deicing-Impacted Airport Stormwater, 330 p. (2013)

## Research Results Digests

No.	Proj. No.	Title, Pages, Publication Year
1	11-03	Synthesis of Information Related to Airport Practices, 4 p. (2007)
2	11-02/Task 01	Model for Improving Energy Use in U.S. Airport Facilities, 20 p. (2007)
3	11-03	Synthesis of Information Related to Airport Practices, 4 p. (2007)
4	11-03	Synthesis of Information Related to Airport Practices, 4 p. (2009)
5	11-02/Task 07	Current and Emerging Issues Facing the Airport Industry, 32 p. (2009)
6	04-03	Guidance for Identifying and Mitigating Approach Lighting System Hazards, 16 p. (2009)
7	11-02/Task 11	A Summary of How Proposed Firefighting Standards Would Impact Airports, 20 p. (2009)
8	11-03	Synthesis of Information Related to Airport Practices, 4 p. (2010)
9	02-01	Alternative Aircraft and Pavement Deicers and Anti-Icing Formulations with Improved Environmental Characteristics, 12 p. (2010)
10	03-01	Light Detection and Ranging (LIDAR) Deployment for Airport Obstruction Surveys, 30 p. (2010)

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### Research Results Digests

No.	Proj. No.	Title, Pages, Publication Year
11	11-02/Task 14	Helping Airports Understand Payment Card Industry Data Security Standard (PCI DSS), 30 p. (2010)
12	11-03	Synthesis of Information Related to Airport Practices, 6 p. (2011)
13	11-03	Synthesis of Information Related to Airport Practices, 8 p. (2012)
14	11-04	Graduate Research Award Program on Public-Sector Aviation Issues, 20 p. (2012)
15	04-07A	Use of Towbarless Tractors at Airports—Best Practices, 16 p. (2012)
16	11-01	Legal Aspects of Airport Programs, 12 p. (2012)
17	11-03	Synthesis of Information Related to Airport Practices, 8 p. (2013)
18	11-03	Synthesis of Information Related to Airport Practices (In Production)
19	11-04	Graduate Research Award Program on Public-Sector Aviation Issues Update: 2008-2013 (In Production)
20	11-07	Taking Inventory of ACRP Research and the Next Challenges Facing the Airport Industry (In Production)

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### Legal Research Digests (Project 11-01)

No.	Topic No.	Title, Pages, Publication Year
1	01-03	Compilation of Airport Law Resources, 38 p. (2008)
2	01-02	Theory and Law of Airport Revenue Diversion, 30 p. (2008)
3	01-04	Survey of Laws and Regulations of Airport Commercial Ground Transportation, 186 p. (2008)
4	01-01	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters Through December 31, 2007 (CD 68), 3000 p. (2008)
5	01-05	Responsibility for Implementation and Enforcement of Airport Land-Use Zoning Restrictions, 68 p. (2009)
6	01-07	The Impact of Airline Bankruptcies on Airports, 62 p. (2009)
7	01-08	Airport Governance and Ownership, 72 p. (2009)
8	01-06	The Right to Self-Fuel, 82 p. (2009)
9	02-03	Case Studies on Community Challenges to Airport Development, 64 p. (2010)
10	02-04	Analysis of Federal Laws, Regulations, and Case Law Regarding Airport Proprietary Rights, 52 p. (2010)
11	03-03	Survey of Minimum Standards: Commercial Aeronautical Activities at Airports, 60 p. (2011)
12	03-01	Fair Disclosure and Airport Impact Statements in Real Estate Transfers, 70 p. (2011)
13	03-06	An Index and Digest of Decisions: Compilation of Airport Law Resources (CD 108), 0 p. (2012)
14	02-05	Achieving Airport-Compatible Land Uses and Minimizing Hazardous Obstructions in Navigable Airspace, 74 p. (2012)
15	03-02	Compilation of State Airport Authorizing Legislation, 108 p. (2012)
16	04-07	Procurement of Airport Development and Planning Contracts, 50 p. (2012)
17	03-05	State and Federal Regulations That May Affect Initiatives to Reduce Airports' GHG Emissions, 70 p. (2012)
18	04-04	Buy America Requirements for Federally Funded Airports, 72 p. (2013)
19	04-02	Legal Issues Related to Developing Safety Management Systems and Safety Risk Management at U.S. Airports, 48 p. (2013)
20	04-01	Airport Responsibility for Wildlife Management, 162 p. (2013)
21	04-05	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters Through December 2012 (CD 141), 0 p. (2013)

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### Syntheses (Project 11-03)

No.	Topic No.	Title, Pages, Publication Year
1	S01-01	Innovative Finance and Alternative Sources of Revenue for Airports, 52 p. (2007)

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## Syntheses (Project 11-03)

No.	Topic No.	Title, Pages, Publication Year
2	S03-01	Airport Aviation Activity Forecasting, 32 p. (2007)
3	S04-01	General Aviation Safety and Security Practices, 44 p. (2007)
4	S10-01	Counting Aircraft Operations at Non-Towered Airports, 33 p. (2007)
5	S03-02	Airport Ground Access Mode Choice Models, 151 p. (2008)
6	S10-03	Impact of Airport Pavement Deicing Products on Aircraft and Airfield Infrastructure, 68 p. (2008)
7	S03-03	Airport Economic Impact Methods and Models, 76 p. (2008)
8	S10-02	Common Use Facilities and Equipment at Airports, 132 p. (2008)
9	S02-01	Effects of Aircraft Noise: Research Update on Selected Topics, 100 p. (2008)
10	S02-02	Airport Sustainability Practices, 120 p. (2008)
11	S09-01	Impact of Airport Rubber Removal Techniques on Runways, 116 p. (2008)
12	S04-02	Preventing Aircraft--Vehicle Incidents during Weather Operations and Periods of Low Visibility, 80 p. (2008)
13	S03-05	Effective Practices for Preparing Airport Improvement Program Benefit-Cost Analysis, 76 p. (2009)
14	S03-04	Airport System Planning Practices, 80 p. (2009)
15	S04-03	Identification of the Requirements and Training to Obtain Driving Privileges on Airfields, 52 p. (2009)
16	S02-03	Compilation of Noise Programs in Areas Outside DNL 65, 112 p. (2009)
17	S02-04	Approaches to Integrating Airport Development and Federal Environmental Review Process, 44 p. (2009)
18	S06-01	Aviation Workforce Development Practices, 44 p. (2010)
19	S01-02	Airport Revenue Diversification, 64 p. (2010)
20	S08-01	Airport Terminal Facility Activation Techniques, 136 p. (2010)
21	S10-04	Airport Energy Efficiency and Cost Reduction, 82 p. (2010)
22	S09-02	Common Airport Pavement Maintenance Practices, 112 p. (2011)
23	S04-05	Bird Harassment, Repellent, and Deterrent Techniques for Use on and Near Airports, 40 p. (2011)
24	S02-05	Strategies and Financing Opportunities for Airport Environmental Programs, 228 p. (2011)
25	S03-06	Strategies for Reuse of Underutilized or Vacant Airport Facilities, 72 p. (2011)
26	S04-06	Current Airport Inspection Practices Regarding FOD (Foreign Object Debris/Damage), 96 p. (2011)
27	S06-02	Airport Self-Inspection Practices, 122 p. (2011)
28	S10-06	Investigating Safety Impacts of Energy Technologies on Airports and Aviation, 48 p. (2011)
29	S10-05	Ramp Safety Practices, 68 p. (2011)
30	S01-03	Airport Insurance Coverage and Risk Management Practices, 60 p. (2011)
31	S01-04	Airline and Airline-Airport Consortium to Manage Terminals and Equipment, 102 p. (2011)
32	S04-08	Managing Aerial Firefighting Activities on Airports, 44 p. (2012)
33	S02-06	Airport Climate Adaptation and Resilience, 96 p. (2012)
34	S09-03	Subsurface Utility Engineering Information Management for Airports, 58 p. (2012)
35	S09-04	Issues with Use of Airfield LED Light Fixtures, 44 p. (2012)
36	S06-03	Exploiting Airport Employee Commute and Parking Strategies, 70 p. (2012)
37	S04-07	Lessons Learned from Airport Safety Management Systems Pilot Studies, 72 p. (2012)
38	S10-07	Expediting Aircraft Recovery at Airports, 108 p. (2012)
39	S10-09	Airport Wildlife Population Management, 78 p. (2013)
40	S01-05	Issues with Airport Organization and Reorganization, 40 p. (2013)
41	S10-08	Conducting Aeronautical Special Events at Airports, 130 p. (2013)
42	S02-07	Integrating Environmental Sustainability into Airport Contracts, 76 p. (2013)
43	S02-08	Environmental Assessment of Air and High-Speed Rail Corridors, 44 p. (2013)
44	S02-09	Environmental Management System Development Process, 58 p. (2013)
45	S04-09	Model Mutual Aid Agreements for Airports, 64 p. (2013)
46	S01-07	Conducting Airport Peer Reviews, 48 p. (2013)
47	S09-05	Repairing and Maintaining Airport Parking Structures While In Use, 54 p. (2013)
48	S01-06	How Airports Measure Customer Service Performance, 102 p. (2013)

## Syntheses (Project 11-03)

No.	Topic No.	Title, Pages, Publication Year
49	S06-04	Helping New Maintenance Hires Adapt to the Airport Operating Environment, 60 p. (2013)

## Web-Only Documents

No.	Proj. No.	Title, Pages, Publication Year
1	01-03	Analysis and Recommendations for Developing Integrated Airport Information Systems, 80 p. (2009)
2	02-06	Appendices to ACRP Report 11: Guidebook on Preparing Airport GHG Emissions Inventories (& Rep. 11), 87 p. (2009)
3	02-01	Formulations for Aircraft and Airfield Deicing and Anti-Icing: Aquatic Toxicity and Biochemical Oxygen Demand, 121 p. (2009)
4	04-03	Guidance for Identifying and Mitigating Approach Lighting System Hazards, 88 p. (2009)
5	01-01	Development of a Guidebook for Managing Small Airports (& Rep. 16), 124 p. (2009)
6	01-05	Evaluation and Selection of Airport Capital Project Delivery Methods, 213 p. (2009)
7	11-02/Task 11	How Proposed ARFF Standards Would Impact Airports, 115 p. (2009)
8	02-01	Alternative Aircraft Anti-Icing Formulations With Reduced Aquatic Toxicity and Biological Oxygen Demand, 141 p. (2010)
9	11-02/Task 08	Enhanced Modeling of Aircraft Taxiway Noise, Vol. 1: Scoping, 153 p. (2009)
9	02-27	Enhanced Modeling of Aircraft Taxiway Noise, Vol. 2: Aircraft Taxi Noise Database and Development Process, 138 p. (2013)
10	10-07	Appendix to ACRP Report 41 (self-tagging) (& CD 83; & Rep. 41), 85 p. (2011)
11	02-09	A Comprehensive Development Plan for a Multimodal Noise and Emissions Model, 296 p. (2010)
12	11-02/Task 17	Risk Assessment of Proposed ARFF Standards, 105 p. (2011)
13	02-23	Alternative Fuels as a Means to Reduce PM2.5 Emissions at Airports, 175 p. (2012)
14	03-12	Guidelines for Preparing Peak Period and Operational Profiles (& CD 126; & Rep. 82), 316 p. (2013)
15	03-25	Data Supporting the Impact of Regulatory Compliance on Small Airports, Vol. 1: Appendixes A, B, & C (& Rep. 90), 121 p. (2013)
15	03-25	Data Supporting the Impact of Regulatory Compliance on Small Airports, Vol. 2: Technical Appendixes (& Rep. 90), 151 p. (2013)

## CDs

No.	Proj. No.	Title, Publication Year
68	11-01/Topic 04-05	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters Through December 31, 2007 (LRD 4) (2008)
70	02-05	ACRP Report 15 Toolkit (& Rep. 15) (2009)
73	03-09	Workbook for ACRP Report 20: Strategic Planning in the Airport Industry (& Rep. 20) (2009)
74	10-05	Supplemental Materials for ACRP Report 30 (& Rep. 30) (2010)
75	07-04	Airport Passenger Terminal Planning Spreadsheet Models for ACRP Report 25, Volume 2 (& Rep. 25 Vol. 2) (2010)
79	01-06	Workbook for ACRP Report 19: Developing an Airport Performance-Measurement System (& Rep. 19) (2010)
80	10-06	Parking Forecast Model and Instructions for Use: Supplemental Materials for ACRP Report 34 (& Rep. 34) (2010)
81	01-02	Appendixes to ACRP Report 33 (& Rep. 33) (2011)
82	03-06	Database of APM Systems for ACRP Report 37 (& Rep. 37) (2010)
83	10-07	Decision-Making Tool for Evaluating Passenger Self-Tagging (& Rep. 41; & WOD 10) (2011)
88	08-01	Collection of Practices for ACRP Report 42 (& Rep. 42) (2011)
89	02-13	Practices That Enhance Environmental Stewardship (& Rep. 43) (2011)

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**CDs**

No.	Proj. No.	Title, Publication Year
91	02-07	The Alternative Fuels Investigation Tool (AFIT) for ACRP Report 46 (& Rep. 46) (2011)
93	03-15	Airport Forecasting Risk Assessment Program for ACRP Report 48 (& Rep. 48) (2011)
94	01-09	Interactive Resource Guide for ACRP Report 19A (& Rep. 19A) (2011)
95	02-10	AirportGEAR and Supplemental Material (& Rep. 56) (2011)
98	04-08	Runway Safety Area Risk Analysis Tool for ACRP Report 50 (& Rep. 50) (2011)
102	03-11	Supplemental Materials for ACRP Report 44 (& Rep. 44) (2011)
108	11-01/Topic 03-06	An Index and Digest of Decisions: Compilation of Airport Law Resources (LRD 13) (2012)
109	01-14	Appendices for ACRP Report 66 (& Rep. 66) (2012)
110	03-14	Resource CD for ACRP Report 67 (& Rep. 67) (2012)
112	07-07	Analysis Templates for ACRP Report 68 (& Rep. 68) (2012)
113	02-25	Tools for Evaluating Emissions and Costs of APUs and Alternative Systems (TEECAAS) for ACRP Report 64 (& Rep. 64) (2012)
114	10-08	Applying Intelligent Transportation Systems to Improve Airport Traveler Access Information (& Rep. 70) (2012)
115	02-08	Appendixes to ACRP Report 71 (& Rep. 71) (2012)
117	01-18	Airport ERM Tool for ACRP Report 74 (& Rep. 74) (2012)
119	01-17	Digital Files for ACRP Report 77: Guidebook for Developing General Aviation Airport Business Plans (& Rep. 77) (2012)
123	02-16	Airport Ground Support Equipment: Tutorial and Database (& Rep. 78) (2012)
124	03-17	Supplemental Material to ACRP Report 79: Prototype Airfield Capacity Spreadsheet Model (& Rep. 79) (2012)
125	02-22	Evaluation Tool to Supplement ACRP Report 80 (& Rep. 80) (2012)
126	03-12	Guidebook and Toolboxes for ACRP Report 82 (& Rep. 82; & WOD 14) (2013)
129	02-36	Toolkit for Evaluating Alternative Fuel Distribution Programs and Appendixes to ACRP Report 83 (& Rep. 83) (2013)
131	02-21	Airport Emissions Estimator Tool and Other Support Material for ACRP Report 84 (& Rep. 84) (2013)
133	06-02	Supplemental Materials for ACRP Report 75: Airport Leadership Development Program (& Rep. 75) (2013)
136	02-12	Departure Optimization Investigation Tool (DOIT) (& Rep. 86) (2013)
137	02-20	The Vector-Borne Disease Airport Importation Risk Tool (2013)
139	04-11	Tool Set for Integrating GIS in Emergency Management at Airports (& Rep. 88) (2013)
140	03-18	Airport Business Continuity Planning Software Tool (& Rep. 93) (2013)
141	11-01/Topic 04-05	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters Through December 2012 (LRD 21) (2013)

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**Conference Proceedings**

No.	Proj. No.	Title, Pages, Publication Year
41	11-02	Interagency-Aviation Industry Collaboration on Planning for Pandemic Outbreaks, 52 p. (2008)
47	11-02/Task 13	Research on the Transmission of Disease in Airports and on Aircraft, 70 p. (2010)

**Note**

Publications in parentheses with an ampersand (&) are companion publications.

Publications in parentheses without an ampersand are reports or digests published as stand-alone CDs.



## APPENDIX B - SUMMARY OF PROJECT STATUS THROUGH DECEMBER 31, 2013

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
<b>01: Administration</b>									
01-01	Guidebook for Managing Small Airports	\$400,000(06)	\$397,230	University of Minnesota	1/24/2007	3/31/2009	Completed - Published as Report 16 and Web-Only Document 5		
01-02	Guidebook for Developing and Managing Airport Contracts	\$400,000(07)	\$315,000	HNTB	4/24/2007	2/28/2010	Completed - Published as Report 33		
01-03	Integrating Airport Information Systems	\$300,000(07)	\$300,000	Aero Tech Consulting	8/10/2007	11/22/2008	Completed - Published as Report 13 and Web-Only Document 1		
01-04	Marketing Guidebook for Small Airports	\$200,000(07)	\$200,000	Eclat Consulting	10/26/2007	9/30/2009	Completed - Published as Report 28		
01-05	Guidebook for Airport Capital Project Delivery Systems	\$100,000(07) \$25,000(08) \$70,000(10)	\$194,994	Northeastern University	4/4/2007	7/30/2009	Completed - Published as Report 21		
01-06	A Guidebook for Developing an Airport Performance Measurement System	\$400,000(08)	\$400,000	Infrastructure Management Group	5/6/2008	4/2/2010	Completed - Published as Report 19		
01-07	Airport/Airline Agreements - Practices and Characteristics	\$400,000(08)	\$393,005	Ricondo & Associates	5/30/2008	4/5/2010	Completed - Published as Report 36		
01-08	Guidebook for Developing and Leasing Airport Property	\$400,000(08)	\$350,000	R.W. Armstrong and Associates	6/24/2008	9/30/2010	Completed - Published as Report 47		
01-09	Resource Guide to Airport Performance Indicators	\$400,000(09)	\$400,000	Oliver Wyman, Inc.	5/8/2009	12/31/2010	Completed - Published as Report 19A		
01-10	A Handbook for Developing, Implementing and Overseeing Airport Capital Plans	\$400,000(09)	\$399,955	HNTB	7/10/2009	12/31/2010	Completed - Published as Report 49		
01-11	Understanding Airport In-Terminal Concession Programs	\$350,000(09)	\$350,000	Leigh Fisher	6/17/2009	5/31/2011	Completed - Published as Report 54		

## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
01-12	A Primer for Information Technology Systems at Airports	\$350,000(09)	\$348,843	Faith Group, LLC	7/7/2009	5/31/2011	Completed - Published as Report 59		
01-13	Developing a Database-Driven Web Application for Benchmarking Airport Performance	\$500,000(09A) \$100,000(10)	\$549,727	Amadeus Consulting	9/30/2010	12/31/2014	Research in Progress	D. Duchow	M. Salamone
01-14	Considering and Evaluating Airport Privatization	\$500,000(09A)	\$500,000	Leigh Fisher	5/10/2010	12/31/2011	Completed - Published as Report 66		
01-15	Assessing and Implementing Innovative Revenue Strategies - A Guide for Airports	\$400,000(10)	\$400,000	Kramer Aerotech, Inc.	5/14/2010	1/31/2014	Research in Progress	G. Fahnestock	L. Goldstein
01-16	Asset and Infrastructure Management for Airports	\$400,000(10)	\$400,000	GHD Consulting	6/16/2010	12/1/2011	Completed - Published as Report 69		
01-17	Guidebook for Developing General Aviation Airport Business Plans	\$400,000(10)	\$398,350	Aviation Management Consulting Group	6/28/2010	6/1/2012	Completed - Published as Report 77		
01-18	Application of Enterprise Risk Management at Airports	\$350,000(10)	\$350,000	Marsh, USA	6/30/2010	3/30/2012	Completed - Published as Report 74		
01-19	Airport Capital Improvements: Developing a Cost-Estimating Model and Database	\$400,000(11)	\$400,000	MCR Federal, LLC	7/13/2011	5/23/2014	Research in Progress	J. Breedon R. Samis	L. Goldstein
01-20	Procuring and Managing Professional Services for Airports	\$350,000(11)	\$350,000	HNTB	6/15/2011	1/20/2013	Completed - Published as Report 87		
01-21	A Guidebook for Airport-Airline Consortiums	\$400,000(12)	\$387,642	AVAirPros	6/1/2012	3/1/2014	Research in Progress	K. Brockman	T. Schatz
01-22	Guidebook for Successfully Assessing and Managing Risks in Airport Capital and Maintenance Projects	\$300,000(12)	\$300,000	Direct Effect Solutions, Inc.	8/14/2012	5/14/2014	Research in Progress	D. Fish N. Wills	M. Greenberger
01-23	Mitigating Disruptive WiFi Interference at Airports	\$350,000(13)	\$349,489	System Planning Corp.	5/2/2013	8/1/2014	Research in Progress	K. Hoang	T. Schatz



## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
01-24	Renewable Energy as an Airport Revenue Source	\$400,000(13)	\$399,612	Harris Miller Miller & Hanson	8/13/2013	12/12/2014	Research in Progress	C. Hugunin S. Swigart	J. Navarrete
01-25	A Guidebook for Increasing Diversity and Small Business Participation in Airport Business Opportunities	\$250,000(13)	\$250,000	Exstare Federal Services, LLC	8/13/2013	12/12/2014	Research in Progress	C. Ma S. Moore	T. Schatz
01-26	Improving the Airport Customer Experience	\$400,000(14)					In Development	J. Raymond	T. Schatz
01-27	NextGen - A Primer	\$750,000(14)					In Development	T. Diana B. White	M. Salamone
01-28	NextGen - Guidance for Engaging the Airport Community	\$300,000(14)					In Development	H. Callon D. Scata	T. Schatz
<b>02: Environment</b>									
02-01	Alternative Aircraft and Pavement Deicers and Anti-Icing Formulations with Improved Environmental Characteristics	\$600,000(06)	\$600,000	University of South Carolina	11/1/2006	2/28/2010	Completed - Interim report published as Web-Only Document 3; summary of final report published as Research Results Digest 9; full final report published as Web-Only Document 8		
02-02	Deicing Planning Guidelines and Practices for Stormwater Management Systems	\$300,000(06)	\$300,000	CH2M Hill	10/9/2006	9/12/2008	Completed - Published as Report 14 and Deicing Practices 1-41		
02-03	Aircraft and Airport-Related Hazardous Air Pollutants: Research Needs and Analysis	\$100,000(06)	\$100,000	Aerodyne Research, Inc.	12/19/2006	12/18/2007	Completed - Published as Report 7		
02-03A	Measurement of Gaseous HAP Emissions from Idling Aircraft as a Function of Engine and Ambient Conditions	\$500,000(06)	\$499,741	Aerodyne Research, Inc.	1/12/2009	3/30/2012	Completed - Published as Report 63		

## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-04	Research Needs Associated with Particulate Emissions at Airports	\$100,000(06)	\$99,897	Environmental Consulting Group, Inc.	1/2/2007	3/1/2008	Completed - Published as Report 6		
02-04A	Summarizing and Interpreting Aircraft Gaseous and Particulate Emissions Data	\$350,000(07)	\$349,470	University of Missouri-Rolla	4/12/2007	7/11/2008	Completed - Published as Report 9		
02-05	Aircraft Noise: A Toolkit for Managing Community Expectations	\$500,000(07)	\$399,982	Landrum & Brown	4/20/2007	3/31/2009	Completed - Published as Report 15		
02-06	Guidebook on Preparing Airport Greenhouse Gas (GHG) Emissions Inventories	\$200,000(07)	\$199,403	Wyle Laboratories, Inc.	10/9/2007	9/8/2008	Completed - Published as Report 11 and Web-Only Document 2		
02-07	Handbook for Analyzing the Costs and Benefits of Alternative Turbine Engine Fuels at Airports	\$500,000(07)	\$499,960	CSSI, Inc.	10/22/2007	10/29/2010	Completed - Published as Report 46		
02-08	Quantifying Contributions to Local Air Quality Impacts from Airport-Related Emissions	\$600,000(08)	\$599,970	Wyle Laboratories, Inc.	6/4/2008	4/30/2012	Completed - Published as Report 71		
02-09	A Comprehensive Development Plan for a Multimodal Noise and Emissions Model	\$200,000(08)	\$199,630	Wyle Laboratories, Inc.	7/7/2008	10/29/2010	Completed - Published as Web-Only Document 11		
02-10	Handbook for Considering Practical Greenhouse Gas Emission Reduction Strategies for Airports	\$500,000(09)	\$499,921	CDM	6/9/2009	6/9/2011	Completed - Published as Report 56		
02-11	A Handbook for Addressing Water Resource Issues Affecting Airport Capacity Enhancement Planning	\$150,000(09)	\$150,000	Gresham, Smith and Partners	5/11/2009	5/31/2011	Completed - Published as Report 53		
02-12	Environmental Optimization of Aircraft Departures: Fuel Burn, Emissions, and Noise	\$300,000(09)	\$300,000	Wyle Laboratories, Inc.	4/20/2009	3/29/2013	Completed - Published as Report 86		
02-13	Guidebook of Practices for Improving Environmental Performance at Small Airports	\$200,000(09) \$75,000(08)	\$200,000	Gresham, Smith and Partners	6/16/2009	8/20/2010	Completed - Published as Report 43		

## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-14	Guidebook for Selecting Methods to Monitor Airport and Aircraft Deicing Materials	\$200,000(09A)	\$150,000	Gresham, Smith and Partners	6/3/2010	2/28/2012	Completed - Published as Report 72		
02-15	Recycling Strategies for the Airport Industry	\$300,000(09A)	\$300,000	Cascadia Consulting Group	9/22/2010	7/15/2013	Completed - Publication Pending	J. Barrow S. Urlass	M. Salamone
02-16	Airport Ground Support Equipment (GSE) Inventory and Emission Reduction Strategies	\$600,000(09A)	\$599,717	CDM	6/18/2010	6/30/2012	Completed - Published as Report 78		
02-17	Measuring PM Emissions from Auxiliary Power Units, Tires and Brakes	\$500,000(09A)	\$500,000	Missouri University of Science and Technology	9/3/2010	5/31/2013	Completed - Published as Report 97		
02-18	Guidelines for Integrating Alternative Jet Fuel Into the Airport Setting	\$250,000(09A)	\$249,982	Metron Aviation	6/17/2010	10/16/2011	Completed - Published as Report 60		
02-19	Winter Design Storm Factor Determination for Airports	\$300,000(09A)	\$249,999	CH2M Hill	6/24/2010	12/1/2012	Completed - Published as Report 81		
02-20	The Role of Air Travel in the Transmission and Spread of Insect-Borne Diseases	\$250,000(10)	\$249,995	University of Florida	9/7/2010	9/30/2013	Completed - Published as CRP-CD-137		
02-20A	Infectious Disease Mitigation in Airports and on Aircraft	\$200,000(11)	\$200,000	Environmental Health & Engineering	7/6/2011	5/31/2013	Completed - Published as Report 91		
02-21	Guidebook for Preparing Airport Emissions Inventories for State Implementation Plans	\$500,000(10)	\$499,805	KB Environmental Sciences	8/31/2010	2/28/2013	Completed - Published as Report 84		
02-22	Incorporating Sustainability into Traditional Airport Projects	\$300,000(09A)	\$300,000	Landrum & Brown	7/12/2010	5/31/2012	Completed - Published as Report 80		
02-23	Alternative Fuels as a Means to Reduce PM2.5 Emissions at Airports	\$500,000(10)	\$499,798	Project Performance Corp.	7/6/2010	4/30/2012	Completed - Published as Web-Only Document 13		
02-24	Guidelines for Airport Sound Insulation Programs	\$200,000(10)	\$200,000	Jones Payne Group	8/27/2010	3/8/2013	Completed - Published as Report 89		

## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-25	Handbook for Evaluating Emissions and Costs of APU's and Alternative Systems	\$200,000(10)	\$199,773	Environmental Science Associates	7/7/2010	12/31/2011	Completed - Published as Report 64		
02-26	Assessing Aircraft Noise Conditions Affecting Student Learning	\$450,000(10)	\$449,672	Wyle Laboratories, Inc.	6/26/2010	11/30/2013	Completed - Publication Pending	V. Catlett J. DiPardo	L. Goldstein
02-27	Aircraft Taxi Noise Database for Airport Noise Modeling	\$150,000(10)	\$149,779	Wyle Laboratories, Inc.	6/11/2010	3/29/2013	Completed - Published as Web-Only Document 9, Volume 1		
02-27A	Developing a Generic Commercial Jet Taxi Noise Directivity Pattern for AEDT	\$75,000(12)	\$74,767	Wyle Laboratories, Inc.	2/22/2012	3/29/2013	Completed - Published as Web-Only Document 9, Volume 2		
02-28	Airport Sustainability Practices: Tools for Evaluating, Measuring, and Implementing	\$800,000(11) \$87,104(14)	\$599,874	Vanasse Hangen Brustlin, Inc.	6/27/2011	12/31/2014	Research in Progress	D. Scata R. Thompson	J. Navarrete
02-29	Guidance for Treatment of Deicing-Impacted Airport Stormwater	\$600,000(11)	\$500,000	Gresham, Smith and Partners	5/31/2011	9/30/2013	Completed - Published as Report 99		
02-30	Enhancing the Airport-Industry Database of Sustainable Practices	\$500,000(11) \$196,320(14)	\$500,000	CDM	7/18/2011	12/31/2014	Research in Progress	P. Magnotta	J. Navarrete
02-31	Assessment of Sound Insulation Treatments	\$350,000(11)	\$349,980	Wyle Laboratories, Inc.	7/8/2011	9/15/2013	Completed - Publication Pending	J. Byers B. He	M. Greenberger
02-32	Understanding Nuisance Microbial Biofilms in Receiving Waters Impacted by Airport Deicing Activities	\$400,000(11)	\$300,000	CH2M Hill	7/20/2011	2/28/2014	Research in Progress	A. Fenedick C. Pociask	J. Navarrete
02-33	Guidance for Estimating Airport Construction Emissions	\$350,000(11)	\$349,980	Wyle Laboratories, Inc.	7/1/2011	9/30/2013	Completed - Publication Pending	A. Fisher D. Perkins	T. Schatz
02-34	Quantifying Aircraft Lead Emissions at Airports	\$500,000(11)	\$500,000	Sierra Research, Inc.	6/3/2011	4/1/2014	Research in Progress	J. Byers W. Gillette	M. Greenberger

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No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-35	Research Methods for Understanding Aircraft Noise Annoyance and Sleep Disturbance	\$600,000(11)	\$599,993	Harris Miller Miller & Hanson	9/20/2011	3/31/2014	Research in Progress	A. Hanson N. Sizov	J. Navarrete
02-36	Assessing Opportunities for Alternative Fuel Distribution Programs	\$500,000(11)	\$400,000	Metron Aviation	5/26/2011	12/6/2012	Completed - Published as Report 83		
02-37	Integrated Noise Model Accuracy for General Aviation Aircraft	\$400,000(11)	\$350,000	Harris Miller Miller & Hanson	6/13/2011	3/31/2014	Research in Progress	B. He G. Helm	J. Navarrete
02-38	Guidance for Energy Facilities Compatibility with Airports and Aerospace	\$450,000(12)	\$449,850	Harris Miller Miller & Hanson	5/2/2012	11/2/2013	Completed - Publication Pending	A. Hanson	T. Schatz
02-39	Applying Whole Effluent Toxicity Testing to Evaluate Airport Runoff	\$500,000(12)	\$339,603	NewFields Government Services, LLC	10/5/2012	1/4/2014	Research in Progress	A. Fenedick	J. Navarrete
02-40	Climate Change Risk Assessment and Adaptation Planning at Airports	\$500,000(12)	\$491,923	Dewberry & Davis, LLC	11/20/2012	3/19/2014	Research in Progress	T. Cuddy A. Freeburg	M. Salamone
02-41	Estimating Takeoff Thrust Settings for Airport Emissions Inventories	\$450,000(12)	\$449,998	The Cadmus Group	9/1/2012	4/30/2014	Research in Progress	J. DiPardo	J. Navarrete
02-42	Understanding Air Quality and Public Health Studies Related to Airports	\$200,000(12)	\$199,675	Wyle Laboratories, Inc.	9/25/2012	4/30/2014	Research in Progress	K. Delaney C. Sequelra	J. Navarrete
02-43	Development of NOx Chemistry Module for EMDS/AEDT to Predict NO2 Concentrations	\$400,000(13)	\$399,577	KB Environmental Sciences	7/10/2013	1/9/2015	Research in Progress	P. Wade	J. Navarrete
02-44	Guidance for Helicopter Noise Community Noise Prediction	\$250,000(13)	\$249,811	Wyle Laboratories, Inc.	5/2/2013	9/1/2014	Research in Progress	B. He F. Smigelski	J. Navarrete
02-45	Methodology to Improve EMDS/AEDT Quantification of Aircraft Taxi/Idle Emissions	\$250,000(13)	\$249,959	KB Environmental Sciences	7/8/2013	10/8/2014	Research in Progress	C. Sequeria P. Wade	J. Navarrete

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No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-46	Improving Ground Support Equipment (GSE) Operational Data for Airport Emissions Modeling	\$275,000(13)	\$275,000	KB Environmental Sciences	7/5/2013	11/14/2014	Research in Progress	A. Fisher P. Wade	T. Schatz
02-47	Assessing Aircraft Noise Conditions Affecting Student Achievement--Case Studies	\$600,000(14)					In Development	J. Beyers J. Dipardo	L. Goldstein
02-48	Assessing Annoyance of Helicopter Noise Compared with Jet Aircraft Noise	\$700,000(14)					In Development	N. Sizov	J. Navarrete
02-49	Addressing Significant Weather Impacts on Airports	\$550,000(14)					In Development	T. Cuddy	T. Schatz
02-50	Deriving Benefits from Alternative Aircraft-Taxi Systems	\$300,000(14)					In Development	C. Dorbian	M. Salamone
02-51	Evaluating Methods for Determining Interior Noise Levels Used in Airport Sound Insulation Programs	\$300,000(14)					In Development	B. He	T. Schatz
02-52	Hard and Soft Ground Sound Absorption Methodology	\$250,000(14)					In Development	J. Pietrak	J. Navarrete
02-53	Interpreting Airport Water Monitoring Results	\$250,000(14)					In Development	C. Pociask	M. Salamone
02-54	Measuring Aircraft Emissions at Regional Airports	\$500,000(14)					In Development	C. Ma P. Wade	M. Greenberger
02-55	Modeling Noise for Non-Standard Aircraft Profiles	\$350,000(14)					In Development	J. Pietrak	J. Navarrete
02-56	Planning Compatible Renewable Energy Opportunities that Maximize Benefits for Airports	\$300,000(14)					In Development	R. Solomon	T. Schatz
02-57	Understanding Lead Emission Reductions at Airports	\$200,000(14)					In Development	P. Wade	M. Greenberger



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No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-58	Understanding Potential Benefits of Time-Varying Atmospheric Dispersion Models to Airports	\$400,000(14)					In Development	C. Sequeira	J. Navarrete
02-59	Water Conservation Strategies at Airports	\$450,000(14)					In Development	T. Cuddy	T. Schatz
<b>03: Policy and Planning</b>									
03-01	Light Detection and Ranging (LIDAR) Deployment for Airport Obstructions Surveys	\$350,000(06)	\$350,000	University of Mississippi	1/30/2007	12/31/2009	Completed - Published as Research Results Digest 10		
03-02	Airport Passenger-Related Processing Rates Guidebook	\$200,000(06)	\$200,000	HNTB	1/16/2007	6/30/2009	Completed - Published as Report 23		
03-03	Enhancing Airport Land Use Compatibility	\$500,000(06)	\$500,000	Mead & Hunt	12/28/2006	9/15/2009	Completed - Published as Report 27, Volumes 1 and 2		
03-04	Guidebook for Airport-User Survey Methodology	\$250,000(06)	\$249,350	Jacobs Consultancy	1/16/2007	8/31/2009	Completed - Published as Report 26		
03-05	Passenger Space Allocation Guidelines for Planning and Design of Airport Terminals	\$400,000(07)	\$399,928	Trans Solutions, LLC	6/28/2007	5/31/2011	Completed - Published as Report 55		
03-06	Guidebook for Planning and Implementing Automated People Mover Systems at Airports	\$500,000(07)	\$395,341	Lea & Elliott	6/12/2007	3/30/2010	Completed - Published as Report 37		
03-07	Guidebook for Measuring Performance of Automated People Mover Systems at Airports	\$300,000(07)	\$300,000	Lea & Elliott	6/13/2007	1/31/2012	Completed - Published as Report 37A		
03-08	Passenger Air-Service Development Techniques	\$300,000(07)	\$300,000	InterVISTAS Consulting	6/21/2007	5/15/2009	Completed - Published as Report 18		
03-09	Guidebook for Strategic Planning in the Airport Industry	\$425,000(07)	\$321,049	Ricondo & Associates	6/27/2007	6/15/2009	Completed - Published as Report 20		

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No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-10	Innovative Approaches to Addressing Aviation Capacity Issues in Coastal Mega-Regions	\$300,000(07)	\$300,000	Resource Systems Group	2/6/2008	9/30/2009	Completed - Published as Report 31		
03-11	A Guidebook for the Preservation of Public-Use Airports	\$600,000(08)	\$522,430	L. Robert Kimball & Associates	6/23/2008	1/15/2011	Completed - Published as Report 44		
03-12	Preparing Peak Period and Operational Profiles - Guidebook	\$350,000(08)	\$347,044	HNTB	8/13/2008	10/30/2012	Completed - Published as Report 82		
03-13	Understanding Airspace, Objects, and Their Effects on Airports	\$200,000(08)	\$199,938	Jacobs Consultancy	7/11/2008	4/30/2010	Completed - Published as Report 38		
03-14	Airport Passenger Conveyance System Planning Guidebook	\$300,000(08)	\$300,000	Trans Solutions, LLC	8/26/2008	3/30/2012	Completed - Published as Report 67		
03-15	Impact of Jet Fuel Price Uncertainty on Airport Planning and Development	\$400,000(09)	\$399,970	GRA, Inc.	3/4/2009	2/28/2011	Completed - Published as Report 48		
03-16	Guidebook for Estimating the Economic Impact of Air Cargo at Airports	\$500,000(09)	\$499,860	Battelle Memorial Institute	6/5/2009	3/1/2014	Research in Progress	J. Herbert R. Samis	L. Goldstein
03-17	Evaluating Airfield Capacity	\$525,000(09)	\$525,000	Leigh Fisher	6/29/2009	6/30/2012	Completed - Published as Report 79		
03-18	Operational and Business Continuity Planning for Prolonged Airport Disruptions	\$350,000(10)	\$348,292	Risk Solutions International, LLC	6/3/2010	6/28/2013	Completed - Published as Report 93		
03-19	Passenger Value of Time, Benefit-Cost Analysis, and Capital Investment Decisions	\$350,000(10)	\$349,944	Economic Development Research Group	7/26/2010	1/31/2014	Research in Progress	R. Samis D. Walsh	L. Goldstein
03-20	Defining and Measuring Aircraft Delay and Airport Capacity Thresholds	\$250,000(10)	\$250,000	Trans Solutions, LLC	8/30/2010	12/31/2013	Completed - Publication Pending	E. Hernandez	J. Navarrete
03-21	Developing and Maintaining Support for Your Airport Capacity Project	\$300,000(10)	\$299,980	Mead & Hunt	6/3/2010	3/29/2013	Completed - Published as Report 85		

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No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-22	Addressing Uncertainty About Future Airport Activity Levels in Airport Decision Making	\$350,000(10)	\$350,000	InterVISTAS Consulting	7/15/2010	7/31/2012	Completed - Published as Report 76		
03-23	Integrating Aviation and Passenger Rail Planning	\$400,000(10)	\$399,452	Resource Systems Group	7/29/2010	4/30/2014	Research in Progress	C. Hugunin	T. Schatz
03-24	Guidelines for Air Cargo Facility Planning and Development	\$400,000(11)	\$400,000	CDM/Wilbur Smith	7/17/2011	4/30/2014	Research in Progress	C. Hugunin	L. Goldstein
03-25	Impact of Regulatory Compliance Costs on Small Airports	\$300,000(11)	\$299,987	Unison Consulting, Inc.	6/3/2011	1/31/2013	Completed - Published as Report 90 and Web-Only Document 15		
03-26	Understanding Airline and Passenger Choice in Regions with Multiple Airports	\$250,000(11)	\$250,000	InterVISTAS Consulting	8/4/2011	9/30/2013	Completed - Published as Report 98		
03-27	Evaluating Methods for Counting Aircraft Operations at Non-Towered Airports	\$400,000(11)	\$400,000	Woolpert	11/21/2011	2/28/2014	Research in Progress	T. Dupree	J. Navarrete
03-28	Economic Impact of U.S. Airports	\$400,000(12)	\$399,984	Economic Development Research Group	7/17/2012	3/31/2014	Research in Progress	S. Glasgow	T. Schatz
03-29	Effects of Airline Industry Changes on Small- and Non-Hub Airports	\$300,000(13)	\$299,972	GRA, Inc.	7/22/2013	2/21/2015	Research in Progress	D. Anderson	L. Goldstein
03-30	Unmanned Aircraft Systems at Airports: A Primer	\$150,000(13) \$50,000(14)	\$199,000	Futron Corporation	8/7/2013	11/21/2014	Research in Progress	D. Rinsler C. Swider	T. Schatz
03-31	Aligning Community Expectations with Airport Roles	\$500,000(14)					In Development	K. Erhard	L. Goldstein
03-32	Guidance for Preparing and Using Airport Design Day Flight Schedules	\$400,000(14)					In Development	D. Rinsler	M. Greenberger
03-33	NextGen - Airport Planning	\$500,000(14)					In Development	K. Duffy B. McGray	J. Navarrete

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No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-34	NextGen - Understanding Optimal-Efficient Procedure Changes for Aircraft and Airspace	\$500,000(14)					In Development	H. Callon	L. Goldstein
03-35	Improving Airport Services for International Customers	\$600,000(14)					In Development	L. Miller	T. Schatz
<b>04: Safety</b>									
04-01	Analysis of Aircraft Overruns and Undershoots for Runway Safety Areas	\$250,000(06)	\$249,986	Applied Research Associates	9/19/2006	1/31/2008	Completed - Published as Report 3		
04-02	Lightning-Warning Systems for Use by Airports	\$200,000(06)	\$199,937	MDA Federal, Inc.	11/7/2006	11/7/2008	Completed - Published as Report 8		
04-03	Guidance for Identifying and Mitigating Approach Lighting System Hazards	\$300,000(07)	\$300,000	Virginia Tech	10/3/2007	2/2/2009	Completed - Published as Research Results Digest 6 and Web-Only Document 4		
04-04	Simulation-Based Training and Exercise of Civil Aviation Emergency Response Personnel	\$500,000(07)	\$499,093	Applied Research Associates	9/12/2007	12/31/2011	Completed - Results to 04-04A		
04-04A	Simulation-Based Training and Exercise of Civil Aviation Emergency Response Personnel	\$300,000(12)	\$290,000	Futron Corporation	6/18/2013	9/17/2014	Research in Progress	M. Tonnacliff	M. Greenberger
04-05	A Guidebook for Airport Safety Management Systems	\$300,000(07)	\$300,000	Applied Research Associates	5/24/2007	5/15/2009	Completed - Published as Report 1, Volume 2		
04-06	A Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airports	\$300,000(08)	\$299,905	Biozone	6/2/2008	1/15/2010	Completed - Published as Report 32		
04-07	Airport Apron Management and Control Programs	\$300,000(08)	\$300,000	Ricondo & Associates	5/8/2009	8/30/2011	Completed - Published as Report 62		
04-07A	Use of Towbarless Tractors at Airports - Best Practices	\$300,000(08)	\$38,795	Ricondo & Associates	4/20/2009	8/30/2011	Completed - Published as Research Results Digest 15		

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No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
04-08	Improved Models for Risk Assessment of Runway Safety Areas (RSA)	\$400,000(09)	\$400,000	Applied Research Associates	6/8/2009	3/31/2011	Completed - Published as Report 50		
04-09	Risk Assessment Method to Support Modification of Airfield Separation Standards	\$250,000(09)	\$250,000	Applied Research Associates	6/10/2009	2/16/2011	Completed - Published as Report 51		
04-10	Airport-to-Airport Mutual Aid Programs	\$300,000(09A)	\$300,000	Innovative Emergency Management	7/6/2010	3/1/2012	Completed - Published as Report 73		
04-11	Guidebook on Integrating GIS in Emergency Management at Airports	\$350,000(11)	\$274,949	Barich, Inc.	7/12/2011	2/28/2013	Completed - Published as Report 88		
04-12	Guidebook on Integrating Web-Based Emergency Management Collaboration Tools into Airport Operations	\$400,000(11)	\$400,000	Innovative Emergency Management	7/15/2011	7/31/2013	Completed - Published as Report 94		
04-13	Integrating Community Emergency Response Teams at Airports	\$400,000(11)	\$400,000	Innovative Emergency Management	7/26/2011	7/26/2013	Completed - Published as Report 95		
04-14	Runway Veer-Off Location Distribution Risk Assessment Model	\$200,000(12)	\$200,000	Airport Safety Management Consultants	6/6/2012	12/5/2013	Completed - Publication Pending	K. Kodsi	J. Navarrete
04-15	Tool For Developing Airport Terminal Incident Response Plans	\$325,000(12)	\$325,000	Innovative Emergency Management	7/10/2012	3/1/2014	Research in Progress	R. Pinon	T. Schatz
04-16	Safety Risk Management for Airports	\$300,000(13)	\$299,992	Futron Corporation	6/18/2013	8/17/2014	Research in Progress	K. Lyons	M. Greenberger
04-17	Applying an SMS Approach to Wildlife Hazard Management	\$250,000(13)					In Development	K. Lyons	T. Schatz
04-18	Runway Protection Zone (RPZ) Risk Assessment Tool	\$400,000(14)					In Development	S. Debban	M. Greenberger

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No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
<b>05: Security</b>									
05-01	An Airport Guide for Regional Emergency Planning for CBRNE Events	\$250,000(06)	\$248,464	System Planning Corp.	11/15/2006	10/31/2008	Completed - Published as Report 12		
05-02	Airport Cyber-Security Best Practices	\$350,000(13)	\$350,000	Grafton Technologies	8/21/2013	9/26/2014	Research in Progress	A. Tapia	M. Greenberger
<b>06: Human Resources</b>									
06-01	Airport and Air Carrier Resource Manual: Employees Coping with Traumatic Events	\$300,000(07)	\$299,416	University of North Dakota	12/5/2007	5/31/2009	Completed - Published as Report 22		
06-02	Airport Leadership Development Program	\$100,000(10)	\$100,000	Ohio State University	9/29/2010	10/30/2012	Completed - Published as Report 75		
<b>07: Design</b>									
07-01	Innovations for Airport Terminal Facilities	\$400,000(06)	\$400,000	Corgan Associates, Inc.	12/8/2006	7/8/2008	Completed - Published as Report 10		
07-02	Airport Curbside and Terminal Area Roadway Operations	\$400,000(06) \$150,000(09)	\$528,000	Jacobs Consultancy	11/15/2006	5/19/2010	Completed - Published as Report 40		
07-03	Developing Improved Civil Aircraft Arresting Systems	\$500,000(07)	\$499,455	Protection Engineering Consultants	5/23/2007	10/31/2009	Completed - Published as Report 29		
07-04	Airport Passenger Terminal Planning and Design: Spreadsheet Models and User's Guide	\$400,000(07)	\$400,000	Landrum & Brown	6/6/2007	10/31/2009	Completed - Published as Report 25, Volume 2		
07-05	Airport Passenger Terminal Planning and Design: Guidebook	\$400,000(07)	\$400,000	Landrum & Brown	6/28/2007	10/31/2009	Completed - Published as Report 25, Volume 1		
07-06	Airport Signage and Wayfinding Information Guidelines	\$250,000(08)	\$250,000	Gresham, Smith and Partners	8/21/2008	3/1/2011	Completed - Published as Report 52		



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No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
07-07	Evaluating Terminal Renewal Versus Replacement Options	\$400,000(10)	\$400,000	Ricondo & Associates	8/16/2010	3/15/2012	Completed - Published as Report 68		
07-08	Improving Terminal Design to Increase Revenue Generation and Customer Satisfaction	\$500,000(11)	\$496,888	Landrum & Brown	6/3/2011	11/30/2013	Completed - Publication Pending	J. Breeden	T. Schatz
07-09	Apron Parking and Design Guidebook	\$250,000(12)	\$250,000	Ricondo & Associates	6/15/2012	7/31/2013	Completed - Published as Report 96		
07-10	General Aviation Facility Planning	\$300,000(12)	\$300,000	Delta Airport Consultants	5/17/2012	2/28/2014	Research in Progress	C. Hugunin	J. Navarrete
07-11	Evaluation of Cost-Saving and Energy Reduction Technologies for Escalators and Moving Walks at Airports	\$250,000(12)	\$249,947	Project Performance Corp.	9/18/2012	1/17/2014	Research in Progress	J.DeLeon	J. Navarrete
07-12	Guidebook for Airport Terminal Restroom Planning and Design	\$250,000(12)	\$249,986	Architectural Alliance	3/25/2013	5/24/2014	Research in Progress	M. Sedarous	J. Navarrete
07-13	Enhancing Airport Wayfinding for the Elderly and Persons with Disabilities	\$450,000(14)					In Development	T. Mai	T. Schatz
<b>08: Construction</b>									
08-01	Sustainable Airport Construction Practices	\$150,000(09)	\$150,000	Ricondo & Associates	6/1/2009	6/22/2010	Completed - Published as Report 42		
<b>09: Maintenance</b>									
09-01	Recommended Guidelines for the Collection and Use of Geospatially Referenced Data for Airfield Pavement Management	\$350,000(06)	\$299,636	Applied Research Associates	11/6/2006	4/30/2010	Completed - Published as Report 39		
09-02	Best Practices for Working in or Near Airport Movement Areas	\$500,000(11)	\$325,000	Ricondo & Associates	8/31/2011	11/30/2013	Completed - Publication Pending	T. Mai	M. Greenberger

## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
09-03	Airport Parking Garage Lighting Solutions	\$300,000(12)	\$300,000	Virginia Polytechnic Institute & State University	6/4/2012	3/31/2014	Research in Progress	T. Mai	J. Navarrete
09-04	Airport Building Operations and Maintenance (O&M) Optimization and Recommissioning: A Whole Systems Approach	\$250,000(12)	\$249,835	Sebesta Blomberg & Associates	12/14/2012	4/13/2014	Research in Progress	K. Slusarski	J. Navarrete
09-05	Guidance on Successful Computer Maintenance Management Systems (CMMS) Selection and Practices	\$300,000(12)	\$300,000	Ross & Barrunzini	7/12/2012	7/1/2014	Research in Progress	R. Zee	M. Greenberger
09-06	Evaluating Impacts of Sustainability Practices on Airport Operations Maintenance	\$300,000(12)	\$300,000	Booz Allen	9/27/2012	1/30/2014	Research in Progress	T. Trang	M. Greenberger
09-07	Airport Maintenance Roles in Planning, Design, Construction, Commissioning, and Activation	\$200,000(12)	\$200,000	Michigan State University	11/13/2012	5/31/2014	Research in Progress	P. Whealan	M. Salamone
09-08	Balancing Airport Stormwater and Wildlife Management: Analysis Tools and Guidance	\$250,000(12)	\$249,209	Environmental Resource Solutions	10/1/2012	1/31/2014	Research in Progress	J. Robinson	J. Navarrete
09-09	LED Airfield Lighting System Operation and Maintenance	\$340,000(13)	\$340,000	Burns Engineering	8/9/2013	2/8/2015	Research in Progress	A. Logan T. Mai	J. Navarrete
09-10	Benchmarking and Profiling Airport Terminal Energy End Uses	\$400,000(13)	\$399,331	Texas A&M University	9/16/2013	3/15/2015	Research in Progress	P. Magnotta	M. Greenberger
09-11	Pavement Maintenance Guidelines for General Aviation Airport Management	\$350,000(14)					In Development	G. Cline	M. Greenberger
09-12	NextGen - Information Sharing and GIS Workshop	\$200,000(14)					In Development	M. McNerney R. Solomon	M. Greenberger

## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
<b>10: Operations</b>									
10-01	Optimizing the Use of Aircraft Deicing and Anti-Icing Fluids	\$300,000(06) \$50,000(08) \$100,000(08)	\$349,030	APS Aviation, Inc.	3/20/2007	7/31/2010	Completed - Published as Report 45		
10-02	Planning for Offsite Airport Terminals	\$350,000(06)	\$350,000	MarketSense	12/18/2006	9/1/2009	Completed - Published as Report 35		
10-03	Guidebook for Evaluating Airport Parking Strategies and Supporting Technologies	\$300,000(07)	\$300,000	Jacobs Consultancy	9/14/2007	9/1/2009	Completed - Published as Report 24		
10-04	Airports and the Newest Generation of General Aviation Aircraft	\$500,000(07)	\$496,390	GRA, Inc.	6/27/2007	5/31/2009	Completed - Published as Report 17, Volumes 1 and 2		
10-05	Reference Guide on Understanding Common Use at Airports	\$500,000(08)	\$399,981	Barich, Inc.	5/30/2008	9/29/2009	Completed - Published as Report 30		
10-06	Handbook to Assess the Impacts of Constrained Parking at Airports	\$400,000(08)	\$398,563	Ricondo & Associates	6/16/2008	3/8/2010	Completed - Published as Report 34		
10-07	Current Status and Future Implications of Passenger Self-Tagging	\$350,000(09)	\$350,000	Barich, Inc.	6/16/2009	7/30/2010	Completed - Published as Report 41 and Web-Only Document 10		
10-08	Applying Intelligent Transportation Systems to Improve Airport Traveler Access Information	\$350,000(09)	\$350,000	Gresham, Smith and Partners	4/13/2009	4/30/2012	Completed - Published as Report 70		
10-09	Elimination or Reduction of Baggage Recheck for Arriving International Passengers	\$400,000(09)	\$400,000	InterVISTAS Consulting	7/22/2009	10/31/2011	Completed - Published as Report 61		
10-10	Guidebook for Airport Irregular Operations (IROPS) Contingency Planning	\$600,000(10)	\$599,976	Mead & Hunt	8/26/2010	2/24/2012	Completed - Published as Report 65		

## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
10-10A	Guidebook for Airport Irregular Operations (IROPS) Contingency Planning - Training Sessions	\$300,000(12)	\$151,053	Mead & Hunt	2/24/2012	1/31/2013	Completed - Training Sessions Held		
10-11	Creating a Collaborative Environment Between Airport Operations and Maintenance Departments	\$500,000(11)	\$399,840	Amadeus Consulting	7/27/2011	4/30/2013	Completed - Published as Report 92		
10-12	Guidebook for Managing Through the Fence (TTF) Operations at Airports	\$350,000(12)	\$350,000	Mead & Hunt	7/30/2012	1/31/2014	Research in Progress	J. Briggs	M. Greenberger
10-13	Integrating NIMS for Personnel and Resources at Airports	\$200,000(12)	\$200,000	System Planning Corp.	5/23/2012	8/24/2013	Completed - Publication Pending	M. Tonnaciff	M. Greenberger
10-14	Being Prepared for IROPS: A Business Planning and Decision Making Approach	\$300,000(12)	\$299,395	MCR Federal, LLC	8/2/2012	11/4/2013	Completed - Publication Pending	T. Madison	T. Schatz
10-15	Guidebook for Airport Winter Operations	\$400,000(12)	\$400,000	Gresham, Smith and Partners	6/25/2012	5/5/2014	Research in Progress	M. Hovan	T. Schatz
10-16	Ground Transportation at Airports: Best Practices	\$300,000(13)	\$300,000	Leigh Fisher	7/10/2013	11/9/2014	Research in Progress	P. Lo	T. Schatz
10-17	Implementing Integrated Self-Service at Airports	\$450,000(13)	\$449,980	Barich, Inc.	8/5/2013	2/4/2015	Research in Progress	D. Rinsler	T. Schatz
10-18	Guidebook on Preventative Maintenance at General Aviation Airports	\$400,000(13)	\$299,496	Delta Airport Consultants	9/18/2013	2/18/2015	Research in Progress	R. Moseng	M. Greenberger
10-19	Advancing Collaborative Decision Making (CDM) at Airports	\$300,000(13)	\$299,783	Mosaic ATM, Inc.	9/3/2013	12/3/2014	Research in Progress	K. Duffy S. Gardner	M. Greenberger
10-20	Guidance for Planning, Design, and Operations of Airport Communications	\$300,000(13)	\$299,281	TranSecure, Inc.	8/9/2013	11/8/2014	Research in Progress	F. James	M. Greenberger

## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
10-21	Complying with Federal Regulations: An Integrated Approach	\$350,000(14)					In Development		M. Greenberger
10-22	Improving Stakeholder Engagement in Aircraft Accident Planning	\$500,000(14)					In Development	M. Tonnaciff	M. Greenberger
10-23	IROPS Stakeholder Communication and Coordination	\$400,000(14)					In Development	L. Miller	T. Schatz
<b>11: Special Projects</b>									
11-01	Legal Aspects of Airport Programs	\$200,000(06) \$475,000(07) \$300,000(08) \$600,000(09) \$500,000(10) \$50,000(11) \$200,000(12) \$50,000(13) \$200,000(14)		Transportation Research Board	2/1/2006		Continuing Project: See 11-01 Table	D. Fuller F. SanMartin	M. Greenberger
11-02	Quick Response for Special Needs	\$590,000(06) \$467,000(07) \$1,000,000(08) \$25,000(09) \$250,000(10) \$100,000(11) \$40,000(12) \$216,000(13) \$123,576(14)		Various	2/1/2006		Continuing Project: See 11-02 Table	L. Miller	M. Salamone
11-03	Synthesis of Information Related to Airport Practices	\$500,000(06) \$700,000(07) \$500,000(08) \$500,000(09) \$900,000(10) \$700,000(11) \$1,270,000(12) \$1,160,000(13) \$1,053,000(14)		Transportation Research Board	2/1/2006		Continuing Project: See 11-03 Table	P. Devoti	M. Salamone

## APPENDIX B (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
11-04	Graduate Research Award Program on Public-Sector Aviation Issues	\$100,000(08) \$100,000(09) \$100,000(10) \$140,000(11) \$140,000(12) \$140,000(13) \$140,000(14)		Transportation Research Board			Continuing Project: Papers published as TRB TRR 2184, 2206, 2266, and 2325; Status Report Published as Research Results Digest 14	R. Samis	L. Goldstein
11-04A	Airport Research Competition for Universities	\$200,000(14)					In Development	R. Samis	L. Goldstein
11-05	Dissemination of ACRP Research Results	\$600,000(10) \$148,947(11) \$200,000(12) \$600,000(13) \$600,000(14)		Various			Continuing Project	J. Showalter	M. Salamone
11-06	Evaluating ACRP Processes	\$250,000(10)	\$0	Transportation Research Board			Completed - Results to AOC		
11-07	ACRP Problem Statement Development	\$500,000(13) \$300,000(14)		Transportation Research Board			Research in Progress		M. Salamone



**APPENDIX B (continued)**  
**ACRP PROJECT 11-01**  
**Legal Aspects of Airport Programs**

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
01-01	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters through December 31, 2007	Spiegel & McDiarmid LLP	December 2006	Completed - Published as Legal Research Digest 4 (CRP-CD-68)	
01-02	Theory and Law of Airport Revenue Diversion	Paul Dempsey	January 2007	Completed - Published as Legal Research Digest 2	
01-03	Compilation/List of Airport Law Resources	McGill University	January 2007	Completed - Published as Legal Research Digest 1	
01-04	Survey of Airport Laws and Regulation of Commercial Ground Transportation	Smith Armundsen	April 2007	Completed - Published as Legal Research Digest 3	
01-05	Responsibility for Implementation and Enforcement of Airport Land-Use Zoning Restrictions	William V. Cheek & Associates	April 2007	Completed - Published as Legal Research Digest 5	
01-06	The Right to Self-Fuel	C. Daniel Prather, Ph.D.	January 2008	Completed - Published as Legal Research Digest 8	
01-07	The Impact of Airline Bankruptcies on Airports	Jocelyn Waite	October 2007	Completed - Published as Legal Research Digest 6	
01-08	Airport Governance and Ownership	Daniel S. Reimer	February 2008	Completed - Published as Legal Research Digest 7	
01-09	Survey of Elements of Disparity Studies for Airport Disadvantaged Business Enterprise Programs			Cancelled	
02-01	Obstructions Affecting Navigable Airspace	Cheek & Associates	July 2008	Incorporated into 02-05	
02-02	Use and Success of Avigation Easement and Other Tools for Airport-Compatible Land Use and Development of Model Language	Lemongrass Consulting	June 2008	Incorporated into 02-05	
02-03	Case Studies on Community Challenges to Airport Development	Jaye Pershing Johnson	October 2008	Completed - Published as Legal Research Digest 9	
02-04	Analysis of Federal Laws, Regulations, and Case Law Regarding Airport Proprietary Rights	Jodi Howick, Esq.	October 2008	Completed - Published as Legal Research Digest 10	

## APPENDIX B (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
02-05	Achieving Airport-Compatible Land Uses and Minimizing Hazardous Obstruction in Navigable Airspace	Jocelyn Waite	August 2010	Completed - Published as Legal Research Digest 14	
03-01	Fair Disclosure and Airport Impact Statements in Real Estate Transfers	Larry Thomas, Esq.	July 2009	Completed - Published as Legal Research Digest 12	
03-02	Compilation of State Aviation Authorizing Legislation	Jodi Howick, Esq.	August 2009	Completed - Published as Legal Research Digest 15	
03-03	Survey of Minimum Standards: Commercial Aeronautical Activities at Airports	Kaplan Kirsch Rockwell, LLP	July 2009	Completed - Published as Legal Research Digest 11	
03-04	Airport Rates and Charges: Law and Policy	Spiegel & McDiarmid LLP	November 2009	Completed - Incorporated into 4-05	
03-05	State and Federal Regulations That May Affect Initiatives to Reduce Airports' GHG Emissions	Kaplan Kirsch Rockwell, LLP	November 2009	Completed - Published as Legal Research Digest 17	
03-06	An Index and Digest of Decisions: Compilation of Airport Law Resources	Kaplan Kirsch Rockwell, LLP	December 2009	Completed - Published as Legal Research Digest 13 (CRP-CD-108)	
04-01	Airport Responsibility for Wildlife Management	Broad and Cassell	April 2011	Completed - Published as Legal Research Digest 20	
04-02	Legal Issues Related to Developing Safety Management Systems and Safety Risk Management at U.S. Airports	Foley & Lardner	December 2011	Completed - Published as Legal Research Digest 19	
04-03	Analysis of Federal Laws, Regulations, Case Law, and Survey of Existing Airport NPDES Permits Regarding Tenant-Operator Responsibilities Under NPDES and Storm Water Management BMP's Under Owner/Airport's Operating Permits	CDM	October 2012	Research in Progress	M. Greenberger
04-04	Buy America Requirements for Federally Funded Airports	Conner Gwyn Schenk	March 2011	Completed - Published as Legal Research Digest 18	
04-05	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters Through December 2012	Spiegel & McDiarmid LLP	February 2012	Completed - Published as Legal Research Digest 21 (CRP-CD-141)	

## APPENDIX B (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
04-06	The Role of the Airport Sponsor in Airport Planning and Environmental Reviews of Proposed Development Projects Under the National Environmental Policy Act (NEPA) and State Mini-NEPA Laws	Conner Gwyn Schenk	March 2012	Completed - Publication Pending	M. Greenberger
04-07	Procurement of Airport Development and Planning Contracts	Broad and Cassell	April 2011	Completed - Published as Legal Research Digest 16	
05-01	Regulations Affecting the Exercise of First Amendment Activities at Airports	Jodi Howick, Esq.	August 2013	Research in Progress	M. Greenberger
05-02	Sovereign Immunity and Applicability to Airports	Seay Law International, PA	November 2013	Research in Progress	M. Greenberger
05-03	The Fourth Amendment and Airports			In Development	M. Greenberger
05-04	A Guide for Compliance with Grant Agreement Obligations to Provide Reasonable Access to an AIP-Funded Public Use General Aviation Airport	Kaplan Kirsch Rockwell, LLP	July 2013	Research in Progress	M. Greenberger
06-01	Operational and Legal Issues with Fuel Farms			In Development	M. Greenberger
06-02	Contract Risk Management for Airport Agreements			In Development	M. Greenberger
06-03	Impact of Firearms Laws on Airports			In Development	M. Greenberger

## APPENDIX B (continued)

### ACRP PROJECT 11-02 Quick Response for Special Needs

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
Task 01	Model for Improving Energy Use in U.S. Airport Facilities	Texas A&M University Energy Systems Laboratory	10/13/2006	7/31/2007	Completed - Published as Research Results Digest 2	
Task 02	Ground Access to Major Airports by Public Transportation	Matthew Coogan	8/16/2006	9/30/2007	Completed - Published as Report 4	
Task 03	Evaluation and Mitigation of Aircraft Slide Evacuation Injuries	George Washington University	10/9/2006	12/15/2007	Completed - Published as Report 2	
Task 04	Airport Safety Management Systems for Airports: Overview	MITRE Corporation	1/2/2007	11/2/2007	Completed - Published as Report 1, Volume 1	
Task 05	Quarantine Facilities for Arriving Air Travelers: Identification of Planning Needs and Costs	System Planning Corp.	3/28/2007	11/3/2007	Completed - Published as Report 5	
Task 06	Interagency-Industry Collaboration on Pandemic Planning for Aviation: A Workshop	Transportation Research Board	2/15/2007	9/15/2007	Completed - Workshop Held - Published as TRB Conference Proceedings 41	
Task 07	Current and Emerging Issues Facing the Airport Industry	Transportation Research Board	8/1/2007	1/31/2009	Completed - Published as Research Results Digest 5	
Task 08	Enhanced Modeling of Aircraft Taxiway Noise - Scoping	Wyle Laboratories, Inc.	2/14/2008	8/31/2009	Completed - Published as Web-Only Document 9, Volume 1	
Task 09	Visibility of Airfield Signs and Markings from Aircraft and Ground Vehicles				Cancelled	
Task 10	Estimate of National Use of Aircraft and Airfield Deicing Materials	CH2M Hill	10/16/2007	6/15/2008	Completed - Results to ACI-NA, AAEE, ATA	
Task 11	A Summary of How Proposed Firefighting Standards Would Impact Airports	GRA, Inc.	12/23/2008	6/15/2009	Completed - Published as Web-Only Document 7 and Research Results Digest 7	
Task 12	Ramp Incident Data from Selected Large and Medium Hub Airports	Ricondo & Associates	4/17/2009	8/30/2011	Completed - Results to FAA	
Task 13	Research Symposium on the Transmission of Disease in Airports and on Aircraft	Transportation Research Board			Completed - Symposium Held - Published as TRB Conference Proceedings 47	

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No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
Task 14	Helping Airports Understand the Payment Card Industry Data Protection Standard (PCI DSS)	Barich, Inc.	10/15/2009	5/15/2010	Completed - Published as Research Results Digest 11	
Task 15	Aviation Industry Familiarization and Training for Part-Time Airport Policymakers	Delta Airport Consultants	1/19/2010	11/18/2010	Completed - Published as Report 58	
Task 16	Analysis, Scoping, and Prioritizing ACRP Deicing Problem Statements				Cancelled	
Task 17	Risk Assessment of Proposed ARFF Standards	Robert David & Assoc.	2/19/2010	1/4/2011	Completed - Published as Web-Only Document 12	
Task 18	The Carbon Market: A Primer for Airports	Pace Global Energy Services	11/2/2010	8/30/2011	Completed - Published as Report 57	
Task 19	Symposium on Air Travel and the Spread of Disease				In Development	J. Navarrete
Task 20	Developing Problem Statements on Information Technology Issues at Airports	Transportation Research Board	12/1/2011	12/1/2011	Completed - Workshop Held - Results to AOC	
Task 21	Innovative Airport Response to Threatened/Endangered Species	Environmental Science Associates	4/22/2013	3/21/2014	Research in Progress	J. Navarrete
Task 22	Best Practices for General Aviation Aircraft Fuel-Tank Sampling	Hagerty Environmental LLC	8/14/2013	4/13/2014	Research in Progress	T. Schatz
Task 23	Alternative IT Delivery Methods and Best Practices for Small Airports	Barich, Inc.	8/5/2013	6/4/2014	Research in Progress	M. Greenberger

## APPENDIX B (continued)

### ACRP PROJECT 11-03

#### Synthesis of Information Related to Airport Practices

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
<b>01: Administration</b>						
S01-01	Innovative Finance and Alternative Sources of Revenue for Airports	Jacobs Consultancy	July 2006	Completed - Published as Synthesis 1		
S01-02	Airport Revenue Diversification	Kramer Aerotech, Inc.	March 2009	Completed - Published as Synthesis 19		
S01-03	Airport Insurance Coverage and Risk Management Practices	Ron Rakich & Assoc.	April 2010	Completed - Published as Synthesis 30		
S01-04	Airline and Airline-Airport Consortiums to Manage Terminals and Equipment	AvAirPros	April 2010	Completed - Published as Synthesis 31		
S01-05	Issues with Airport Organization and Reorganization	Kim Kenville Consulting	February 2012	Completed - Published as Synthesis 40		
S01-06	How Airports Measure Customer Service Performance	Kramer Aerotech, Inc.	February 2012	Completed - Published as Synthesis 48		
S01-07	Conducting Airport Peer Reviews	CTC & Associates	February 2012	Completed - Published as Synthesis 46		
S01-08	Understanding the Value of Social Media at Airports for Customer Engagement	Leigh Fisher	March 2013	Research in Progress	M. Adams	G. Staba
S01-09	Practices to Develop Effective Stakeholder Relationships at Airports			In Development		G. Staba
S01-10	Strategies for Maintaining Air Service			In Development		G. Staba
<b>02: Environment</b>						
S02-01	Effects of Airport Noise: Research Update on Selected Topics	Mestre Greve Associates	March 2007	Completed - Published as Synthesis 9		
S02-02	Airport Sustainability Practices	Arup	March 2007	Completed - Published as Synthesis 10		
S02-03	Compilation of Noise Programs in Areas Outside DNL 65	Harris Miller Miller & Hanson	April 2008	Completed - Published as Synthesis 16		



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No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S02-04	Approaches to Integrating Airport Development and Federal Environmental Review Processes	RS & H / Synergy	April 2008	Completed - Published as Synthesis 17		
S02-05	Funding Opportunities for Airport Environmental Projects	Unison Consulting, Inc.	April 2010	Completed - Published as Synthesis 24		
S02-06	Airport Climate Adaptation and Resilience	AEA Group	April 2011	Completed - Published as Synthesis 33		
S02-07	Integrating Environmental Sustainability into Airport Contracts	Leigh Fisher	March 2012	Completed - Published as Synthesis 42		
S02-08	Environmental Assessment of Air and High-Speed Rail Corridors	Arizona State University	March 2012	Completed - Published as Synthesis 43		
S02-09	Environmental Management System Development Process	First Environment, Inc.	March 2012	Completed - Published as Synthesis 44		
S02-10	Outcomes of Green Initiatives at Airports	First Environment, Inc.	March 2013	Research in Progress	P. Magnotta	G. Staba
S02-11	Lessons Learned from Airport Sustainable Master Planning Programs			In Development		G. Staba
<b>03: Policy and Planning</b>						
S03-01	Aviation Forecasting Methodologies	GRA, Inc.	August 2006	Completed - Published as Synthesis 2		
S03-02	Airport Ground Access Mode Choice Models	Aviation Systems Consulting	October 2006	Completed - Published as Synthesis 5		
S03-03	Airport Economic Impact Methods and Models	Hoyle Tanner & Associates	March 2007	Completed - Published as Synthesis 7		
S03-04	Airport System Planning Practices	Wilbur Smith Associates	April 2008	Completed - Published as Synthesis 14		
S03-05	Effective Practices for Preparing Airport Improvement Program Benefit Cost Analysis	Economic Development Research Group	April 2008	Completed - Published as Synthesis 13		

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No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S03-06	Strategies for Reuse of Underutilized or Vacant Airport Facilities	Kramer Aerotech, Inc.	April 2010	Completed - Published as Synthesis 25		
S03-07	Integrating Airport GIS Data with Public Agency GIS	Grafton Technologies	March 2013	Research in Progress	S. Parhi	G. Staba
S03-08	Backcountry Airstrip Preservation	T-O Engineering, Inc.	March 2013	Research in Progress	S. Brownlee	G. Staba
S03-09	Cell Phone Lots at Airports			In Development		G. Staba
S03-10	Preservation and Development of Seaplane Facilities and Services			In Development		G. Staba
<b>04: Safety</b>						
S04-01	General Aviation Safety and Security Practices	Reynolds, Smith and Hills, Inc.	October 2006	Completed - Published as Synthesis 3		
S04-02	Preventing Aircraft-Vehicle Incidents During Winter Operations and Periods of Low Visibility	Bowling Green State University	June 2007	Completed - Published as Synthesis 12		
S04-03	Identification of the Requirements and Training to Obtain Driving Privileges on Airfields	Airport Safety Consultants	May 2008	Completed - Published as Synthesis 15		
S04-05	Bird Repellant Techniques on Airports	Mississippi State University	April 2010	Completed - Published as Synthesis 23		
S04-06	Current Airport Inspection Practices Regarding FOD	Prather Airport Solutions	April 2010	Completed - Published as Synthesis 26		
S04-07	Lessons Learned from Airport Safety Management Systems Pilot Study	Landry Consultants, LLC	April 2011	Completed - Published as Synthesis 37		
S04-08	Managing Aerial Firefighting Activities on Airports	Critical Path International	May 2011	Completed - Published as Synthesis 32		
S04-09	Model Mutual Aid Agreements for Airports	Smith-Woodwine Associates	March 2012	Completed - Published as Synthesis 45		
S04-10	Safety Reporting Systems at Airports	Landry Consultants, LLC	February 2013	Research in Progress	K. Lyons	G. Staba

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No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S04-11	Effective Cooperation Among Airports and Local and Regional Emergency Management Agencies for Disaster Preparedness and Response	Smith-Woolwine Associates	February 2013	Research in Progress	G. Villalobos M. Sedarous	G. Staba
S04-12	Post-Traumatic-Event (Disaster/Emergency) Recovery Techniques for Airports			In Development		G. Staba
<b>05: Security</b>						
S05-01	Intelligent Transportation System (ITS) Sensor Technology for General Aviation			Cancelled		
<b>06: Human Resources</b>						
S06-01	Aviation Workforce Development Practices	International Aviation Management Group	March 2009	Completed - Published as Synthesis 18		
S06-02	Airport Self-Inspection Practices	Prather Airport Solutions	May 2010	Completed - Published as Synthesis 27		
S06-03	Exploring Airport Employee Commuting and Parking Strategies	DMR Consulting	May 2011	Completed - Published as Synthesis 36		
S06-04	Adapting New Maintenance Hires to the Airport Environment	SMQ Airport Services	March 2012	Completed - Published as Synthesis 49		
<b>07: Design</b>						
S07-01	Impacts of Aging Travelers on Airports	Corgan Associates, Inc.	February 2013	Research in Progress	P. Devoti	G. Staba
<b>08: Construction</b>						
S08-01	Airport Terminal Facility Activation Techniques	Arup	March 2009	Completed - Published as Synthesis 20		
<b>09: Maintenance</b>						
S09-01	Impact of Rubber Removal Techniques on Runways	University of Oklahoma	June 2007	Completed - Published as Synthesis 11		

## APPENDIX B (continued)

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S09-02	Common Airport Pavement Maintenance Practices	Applied Research Associates	March 2009	Completed - Published as Synthesis 22		
S09-03	Subsurface Utility Engineering Information Management for Airports	J. H. Anspach Consulting	May 2011	Completed - Published as Synthesis 34		
S09-04	Issues with Use of Airfield LED Light Fixtures	RPI University	May 2011	Completed - Published as Synthesis 35		
S09-05	Repairing and Maintaining Airport Parking Structures While in Use	Walker Parking Consultants	February 2012	Completed - Published as Synthesis 47		
S09-06	Snow Removal Practices at Small Airports			In Development		
<b>10: Operations</b>						
S10-01	Counting Aircraft Operations at Non-Towered Airports	Aerofinity	October 2006	Completed - Published as Synthesis 4		
S10-02	Common-Use Facilities and Equipment at Airports	Barich, Inc.	March 2007	Completed - Published as Synthesis 8		
S10-03	Impact of Airport Deicing Products on Aircraft and Airfield Infrastructure	Montana State University, Western Transportation Institute	March 2007	Completed - Published as Synthesis 6		
S10-04	Airport Energy Efficiency and Cost Reduction	Miller Dunwiddie Architecture	March 2009	Completed - Published as Synthesis 21		
S10-05	Ramp Safety Practices	Landry Consultants, LLC	May 2010	Completed - Published as Synthesis 29		
S10-06	Investigating Safety Impacts of Energy Technologies on Airports and Aviation	Harris Miller Miller & Hanson	May 2010	Completed - Published as Synthesis 28		
S10-07	Expediting Aircraft Recovery at Airports	Prather Airport Solutions	May 2011	Completed - Published as Synthesis 38		
S10-08	Conducting Aeronautical Special Events at Airports	Prather Airport Solutions	February 2012	Completed - Published as Synthesis 41		

## APPENDIX B (continued)

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S10-09	Airport Wildlife Population Management	Savannah River Ecological Laboratory	February 2012	Completed - Published as Synthesis 39		
S10-10	Habitat Management to Deter Wildlife at Airports	Mississippi State University	March 2013	Research in Progress	A. Anderson	G. Staba
S10-11	Electric Vehicle Charging Stations at Airport Parking Facilities	Leigh Fisher	March 2013	Research in Progress	P. Magnotta	G. Staba
S10-12	Airport Planning for Non-Aeronautical Events	Kramer Aerotech, Inc.	February 2013	Research in Progress	B. Landry	G. Staba
S10-13	Issues Related to Airport Fueling System Operations and Maintenance			In Development		G. Staba
S10-14	Issues Related to Accommodating Animals Passing through Airports			In Development		G. Staba





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