

ACRP

AIRPORT
COOPERATIVE
RESEARCH
PROGRAM

SPONSORED BY THE FEDERAL AVIATION ADMINISTRATION

2011 ANNUAL REPORT OF PROGRESS



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SPONSORED BY THE FEDERAL AVIATION ADMINISTRATION

2011 ANNUAL REPORT OF PROGRESS

Research sponsored by the Federal Aviation Administration

TRANSPORTATION RESEARCH BOARD

WASHINGTON, D.C.

2011

www.TRB.org

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, security, policy, planning, 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 the Air Transport Association (ATA) 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 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. Charles M. Vest 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. Charles M. Vest 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**

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Letter From the AOC Chair

Early in 2011, the Airport Cooperative Research Program released its 100th publication and ended the year with a research library of 125 reports, syntheses, and digests. The publications cover a breadth of environmental, economic, performance, and legal subjects and offer practical insight to many of the issues that continue to challenge airports. For example, *ACRP Report 31: Innovative Approaches to Addressing Aviation Capacity Issues in Coastal Mega-regions* looks into aviation capacity issues in the two coastal mega-regions located along the East and West coasts of the United States. And, *ACRP Report 51: Risk Assessment Method to Support Modification of Airfield Separation Standards* offers practical insight into design criteria for separations between taxiways/taxilanes in support of requests for modification of standards. Each year, ACRP looks at topics addressing airport planning/design, information technology, and airport safety; seeks solutions to a variety of issues; and works with airport industry practitioners to offer guidance for airport efficiency and effectiveness.



We invite you to visit www.trb.org/acrp to see what we have going on and to download our growing list of publications.

Although, in the past 6 years ACRP has provided an abundance of research material to help airports, this year we have seen how the resource is generating beneficial impacts to the industry as airports implement ACRP results. Providing research that has value and usefulness to airports is extremely important. Yet, through the past year we began a thoughtful, orchestrated plan to reach deeper into the industry to distribute our publications and encourage practical application of ACRP research results.

Throughout 2011, the ACRP Oversight Committee has discussed and approved a variety of dissemination activities and considers it a continuing priority to reach out to a broad array of airport-practitioners as well as to evaluate our contribution to the airport industry. ACRP must employ a coordinated strategy that can collectively and affordably reach as many of the diverse airport industry groups as is practical. In the coming months and years you will see more outreach to this end.

The goal of ACRP is to provide well-researched, useful publications that can contribute to the growth and development of the nation's airport industry. 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.

Sincerely Yours,

A handwritten signature in black ink that reads "James Wilding". The signature is written in a cursive, flowing style.

James Wilding

CONTENTS

Sixth Annual Report of Progress, 1

Background, 1

Program Participants, 1

Selection of Research, 2

Program Management, 3

Project Panels, 3

Selection of Contractors, 3

Funding, 4

Products, 4

Status, 4

Disseminating Results, 7

Documenting Success, 8

Publications of the Airport Cooperative Research Program, 19

Summary of Project Status Through December 31, 2011, 24

How to Order, 49

AIRPORT COOPERATIVE RESEARCH PROGRAM

Sixth Annual Report of Progress

December 31, 2011

BACKGROUND

Airports are vital national resources and a well-functioning airport system is essential to U.S. participation in the global economy. They serve a key role in the transportation of people and goods and in regional, national, and international commerce. Airports provide (and often operate) facilities and infrastructure that accommodate various services needed to access the national and international air transportation system. Airports 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 roles of state and local governments that own and operate most airports.

When airport needs are not being adequately addressed by existing research programs, 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 need for ACRP was identified in *TRB Special Report 272: Airport Research Needs: Cooperative Solutions* in 2003, based on a study sponsored by the FAA. The Airport Cooperative Research Program (ACRP) was authorized in December 2003 as part of the Vision 100-Century of Aviation Reauthorization Act.

ACRP undertakes research, conducts other technical activities, and disseminates results in response to the needs of airport operators in a variety of airport subject areas involving administration, environment, legal, policy, planning, safety, human resources, design, construction, maintenance, and operations at airports.

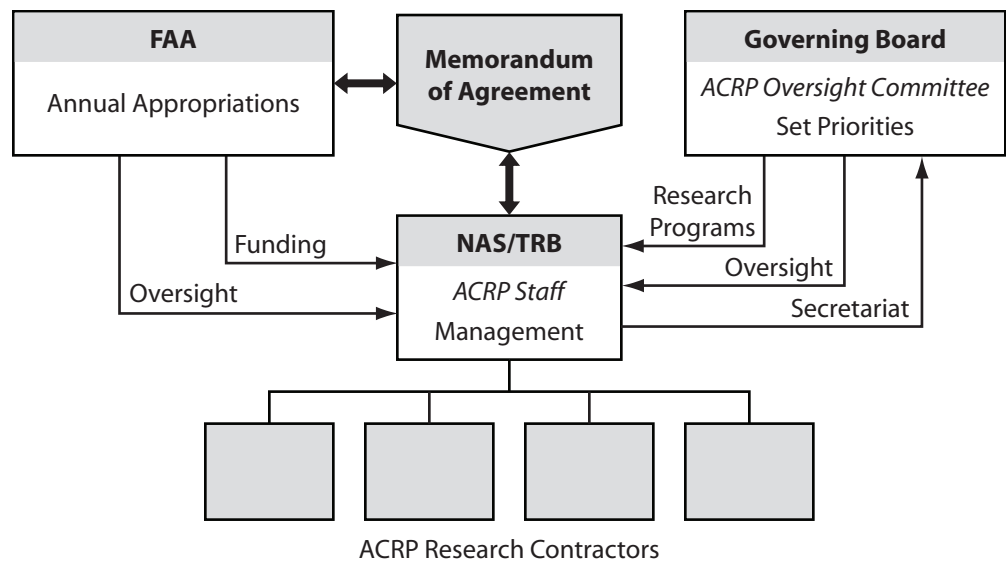
PROGRAM PARTICIPANTS

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 Airport Consultants Council (ACC), the National Association of State Aviation Officials (NASAO), and the Air Trans-

port Association (ATA) 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. Figure 1 illustrates the ACRP organizational structure.

The ACRP benefits from the cooperation and participation of airport professionals, state and local government officials, airport planning and engineering professionals, equipment and service suppliers, air carriers, 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.

Figure 1. ACRP Organizational Structure



SELECTION OF RESEARCH

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.

PROGRAM MANAGEMENT

The ACRP is managed by the TRB using procedures modeled after those used in managing other cooperative research programs. Day-to-day program management includes the following tasks:

1. Assisting the AOC in identifying and prioritizing research needs;
2. Appointing and coordinating expert technical panels to guide research projects;
3. Developing and distributing Requests for Proposals;
4. Processing and evaluating proposals to select the best-qualified research agencies;
5. Executing contracts with the selected researchers;
6. Guiding the research;
7. Reviewing research reports;
8. Publishing and disseminating research reports; and
9. Promoting the application of research results.

PROJECT PANELS

Each ACRP project is assigned to a panel, appointed by the TRB; the panel provides technical guidance and counsel throughout the life of the project. 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 Requests for Proposals and select contractors based on evaluation of the proposals received; the panels also guide the projects and review the reports. As in other TRB activities, ACRP project panel members serve voluntarily without compensation.

SELECTION OF CONTRACTORS

The process for selecting ACRP researchers has been used by the TRB in managing cooperative research programs for more than 45 years. This open process allows all potential research agencies to compete on the basis of technical merit and ensures that all proposers are treated fairly and that the program has access to the best talent available for each project. Proposals from potential research contractors are evaluated by the project panels. The evaluation considers the following: (1) the proposer's demonstrated understanding of the problem; (2) the merit of the proposed research approach and experiment design; (3) the experience, qualifications, and objectivity of the research team in the same or closely related areas; (4) the plan for promoting application of results; (5) the proposer's plan for involvement of disadvantaged business enterprises; and (6) the adequacy of the facilities.

FUNDING

The Vision 100-Century of Aviation Reauthorization Act authorized \$10 million per year for the ACRP in Fiscal Years (FY) 2004 through 2008. Given the timing of the approval of the Act vis-a-vis the FY 2004 appropriation process, no funds were appropriated for the program in FY 2004. ACRP funding of \$3 million was appropriated for FY 2005. In FY 2006, FY 2007, and FY 2008, \$10 million was appropriated for each. In FY 2009, FY 2010, and FY 2011, funding for the program was increased to \$15 million. Although FY 2012 is contingent upon the reauthorization of the Vision 100 legislation, which is under consideration as of this writing, the expectation is that \$15 million will be authorized and appropriated for the coming program year.

PRODUCTS

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 will produce 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.

STATUS

The ACRP officially started in October 2005. A Memorandum of Agreement was executed by the FAA and the TRB, and the ACRP governing board was appointed by the Secretary of the U.S. Department of Transportation, according to the terms of the Memorandum of Agreement.

Some 115 statements of research need were assembled for consideration in formulating the ACRP agenda for Fiscal Years 2005 and 2006, and the governing board met on January 30 and 31, 2006, to establish operating procedures for the ACRP and to select FY 2005/2006 research projects. An additional 68 statements of research needs were received in the first half of 2006. The governing board met again on July 30 and 31, 2006, and on January 31, 2007, to select FY 2007 research projects.

During the first half of 2007, an additional 139 potential research topics, totaling over \$45 million in research needs, were received in response to an industry-wide solicitation of the airport community. The ACRP governing board met on July 22 and 23, 2007, and selected the FY 2008 research program from among the topics received.

In 2008, 147 potential research topics were received for consideration totaling over \$53 million. The ACRP governing board met on July 20 and 21, 2008, to select the FY 2009 research program from among these topics.

In 2009, a solicitation of research ideas from the airport industry yielded 219 potential topics totaling over \$77 million. The ACRP governing board met on July 19 and 20, 2009, to select the FY 2010 research program from among the topics received.

In 2010, 104 problem statements totaling more than \$38.7 million were received for consideration. On July 18 and 19, 2010, the ACRP governing board selected 24 projects for the FY 2011 research program.

In 2011, a solicitation of research ideas from the airport industry yielded 126 potential topics totaling over \$48 million. The ACRP governing board met on July 17 and 18, 2011, to select the FY 2012 research program from among the topics received.

To date, the AOC has authorized 256 projects, in a variety of subject areas of interest to the airport community. The AOC will meet in early 2012 to review progress.

See the section on ACRP Project Status.

Eleven research fields are used to classify ACRP research.

- Administration
- Environment
- Policy and Planning
- Safety
- Security
- Human Resources
- Design
- Construction
- Maintenance
- Operations
- Special Projects

The distribution of all projects and syntheses through December 2011 is shown in Table 1.

Table 1. Distribution of Projects and Syntheses by Research Field Through December 31, 2011

Research Fields	Number of Projects	Number of Syntheses
1. Administration	22	7
2. Environment	42	9
3. Policy and Planning	28	6
4. Safety	15	9
5. Security	1	1
6. Human Resources	2	4
7. Design	11	0
8. Construction	1	1
9. Maintenance	8	5
10. Operations	15	9

Table 2 shows the origin of potential research topics (i.e., problem statements) submitted through the FY 2012 cycle. In addition, this table identifies the sources of the problem statements that have been selected by the ACRP governing board.

Table 2. Origin of Problem Statements

Organization	FY2005/ 2006		FY2007/ 2008		FY 2009		FY 2010		FY 2011		FY 2012		Selected To Date (Thru FY 2012)	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Airport Operator	23	20.0	25	12.1	29	19.7	27	12.3	12	11.5	35	27.8	30	20.0
State DOT	13	11.3	13	6.3	4	2.7	4	1.8	0	0	3	2.4	4	2.7
FAA	0	0.0	8	3.9	8	5.4	23	10.5	5	4.8	5	4.0	19	12.7
Industry Associations Staff/Committee	13	11.3	13	6.3	13	8.8	18	8.2	7	6.7	3	2.4	21	14.0
Airlines/Airline Associations	–	–	–	–	–	–	–	–	5	4.8	1	0.8	5	3.3
TRB Committees	1	0.9	6	2.9	6	4.1	9	4.1	5	4.8	4	3.2	12	8.0
Industry	1	0.9	29	14.0	19	12.9	9	4.1	7	6.7	10	7.9	10	6.7
University	30	26.1	37	17.9	30	20.4	47	21.5	12	11.5	9	7.1	13	8.7
Consultant	29	25.2	56	27.1	37	25.2	80	36.5	50	48.1	53	42.1	27	18.0
Other	5	4.3	20	9.7	1	0.7	2	0.9	1	1.0	3	2.4	9	6.0
Totals	115	100.0	207	100.0	147	100.0	219	100.0	104	100.0	126	100.0	150	100.0

Table 3 displays project panel composition by affiliation, race, and gender through the FY 2012 research program. Over 621 individuals from the airport industry are volunteering their time and effort to participate in the ACRP. This industry participation helps to ensure that the research products are useful to airport industry practitioners.

Table 3. Panel Composition of Active Projects

(114 Project Panels, 723 Seats)

Demographics	No.	%
Affiliation		
Airline	29	4.7
Airport Operator	236	38.0
State Gov't	27	4.3
Local Gov't/MPO/Transit	32	5.2
Federal Gov't	10	1.6
Industry/Consultants/Private Sector	231	37.2
University	34	5.5
Association	22	3.5
Race		
	Members/Chairs	Members/Chairs
White	455/88	74.22/88.8
Minorities	158/118	25.7/11.1
Gender		
	Members/Chairs	Members/Chairs
Male	451/65	73.7/65.7
Female	161/34	26.3/34.3

During 2011, 35 ACRP publications were released. These publications include 20 in the ACRP Report series, 10 in the Synthesis of Practice series, 2 in the Legal Research Digest series, 1 in the Research Results Digest series, and 2 in the Web-Only Document series. Table 4 provides a listing of all currently available ACRP publications as of December 31, 2011.

DISSEMINATING RESULTS

The unique makeup of the airport industry has several industry associations representing diverse audiences, i.e., specific subgroups of airport-practitioners. The job of disseminating ACRP research results to specific airport-practitioner audiences and simultaneously using this contact to assess the value and utility of ACRP results is complex and requires a diverse and simultaneous set of activities.

In the past year the ACRP Oversight Committee has discussed and approved a variety of dissemination activities and considers it a continuing priority to reach a broad array of airport-practitioners and evaluate our contribution to the airport industry. Essentially, ACRP must employ a coordinated strategy that can collectively and affordably reach as many of the diverse airport industry groups as is practical.

DOCUMENTING SUCCESS

The goal of ACRP is to provide well-researched, useful publications that can contribute to the growth and development of the nation's airport industry. ACRP's Impacts on Practice series is designed to provide examples of how airport industry practitioners are using ACRP research results to assist them in their work.

Three Impacts on Practice are included in this report:

- *Protecting Airport Personnel from Lightning Strikes (ACRP Report 8)*
- *Estimating Airport Greenhouse Gas (GHG) Emissions (ACRP Report 11)*
- *Traumatic Event Assistance for Aviation Employees (ACRP Report 22)*

The following ACRP activities of particular interest were completed during 2011. Table 5 provides a summary of all ACRP research projects selected, along with their status as of December 31, 2011.

Environmental Issues

ACRP Report 46: Handbook for Analyzing the Costs and Benefits of Alternative Aviation Turbine Engine Fuels at Airports consists of the Alternative Fuel Investigation Tool (AFIT), a handbook on the use of AFIT, and a report on its development. AFIT is an analytical model designed to help airport operators and fuel suppliers evaluate the costs associated with introducing “drop-in” alternative turbine engine fuel at airports and the benefits as measured by reduced emissions. AFIT, which is included in CD-ROM format with the print version of the report, takes into account options for using alternative fuel for other airside equipment, including diesel-powered ground support equipment. The report also addresses characteristics of current fuel usage and distribution, and describes what is required to switch to alternatives.

ACRP Synthesis 24: Strategies and Financing Opportunities for Airport Environmental Programs summarizes public and private funding opportunities and strategies available to airports to help accomplish their environmental programs and objectives.

Safety Issues

ACRP Report 43: Guidebook of Practices for Improving Environmental Performance at Small Airports outlines federal environmental regulations and requirements, and identifies activities in which airport operators can be proactive in promoting environmental stewardship. As a quick reference, summary graphics

provide information pertaining to the cost and savings as well as the necessary knowledge and amount of time to implement a particular activity. In addition, there are five case studies that discuss environmental initiatives already undertaken at airports that can serve as a guide for other airports. The report includes the collection of environmental stewardship practices in a searchable, filterable spreadsheet format on a CD-ROM, which is packaged with the report.

ACRP Report 45: Optimizing the Use of Aircraft Deicing and Anti-Icing Fluids provides guidance on procedures and technologies designed to help reduce the use of aircraft deicing and anti-icing fluids (ADAF) while maintaining safe aircraft operations across the wide range of winter weather conditions found in the United States and Canada. The report includes a series of best management practices that have the potential to be immediately implemented, and highlights the detailed findings and recommendations of experiments to evaluate holdover time determination systems, spot deicing for aircraft frost removal, and ADAF dilutions.

ACRP Report 50: Improved Models for Risk Assessment of Runway Safety Areas analyzes aircraft veer-offs, the use of declared distances, the implementation of the Engineered Material Arresting System (EMAS), and the incorporation of a risk approach for consideration of obstacles on or in the vicinity of the runway safety area (RSA). An interactive risk analysis tool, included in CD-ROM format with the printed version of the report, is designed to be used by airport and industry stakeholders to quantify risk and support planning and engineering decisions when determining RSA requirements to meet an acceptable level of safety for various types and sizes of airports.

ACRP Report 51: Risk Assessment Method to Support Modification of Airfield Separation Standards is intended to be used to support requests for modification of standards in those circumstances where the design criteria for separations between taxiways/taxilanes and other taxiways/taxilanes and fixed or movable objects as well as separations between taxiways and runways cannot be met.

ACRP Synthesis 23: Bird Harassment, Repellent, and Deterrent Techniques for Use on and Near Airports reviews techniques for reducing bird collisions with aircraft and the relative effectiveness of the various techniques.

Economic Issues

ACRP Report 44: A Guidebook for the Preservation of Public-Use Airports describes why public-use airports close and identifies measures and strategies that can be undertaken to potentially help preserve and prevent an airport closure. The guidebook presents step-by-step procedures on how to identify risk

factors that can increase the potential of a future airport closure and how to formulate an effective airport preservation program. The guidebook also identifies potential groups interested in preserving public-use airports and offers practical checklists for identifying and addressing issues as part of a comprehensive strategic airport planning program in support of preservation efforts.

ACRP Report 47: Guidebook for Developing and Leasing Airport Property explores issues associated with developing and leasing available airport land and summarizes best practices from the perspective of the airport sponsor. The guidebook includes a diverse set of case studies that show several approaches airports have taken to develop and lease property for both aeronautical uses and non-aeronautical uses. The project that developed the guidebook also produced two presentation templates designed to help airports in effective stakeholder communication regarding developing and leasing airport property. The templates, designed for a non-technical audience, provide content, examples, and definitions for a presentation to community stakeholders. The templates, one for aeronautical use development presentations and the second for non-aeronautical use development presentations, are available only online.

ACRP Report 48: Impact of Jet Fuel Price Uncertainty on Airport Planning and Development is designed to help airport operators and planners measure the impact of changes in jet fuel price on supply and demand for air service at commercial service airports. The report includes background research; a computer model, available online and in CD ROM format attached to the printed version of the report; and a user manual. The output of the model can ultimately be used to help evaluate the impact of uncertainty on airport development and finance. Applying specific input parameters, the model, embedded in a user-friendly program, allows airport planners and managers to assess how fuel, economic, and other uncertainties may affect their particular airport and to test the sensitivity of varying assumptions about key drivers of airport activity. The supporting research examines historical changes in fuel prices in the context of changing economic conditions and uses this experience to assess risk in adhering to existing air traffic forecasts when planning future airport improvements or expansion. The model illustrates risk using confidence bands that indicate a range of forecasts as a function of changing jet fuel prices and other factors. The research also examines the historic link between changes in jet fuel prices in relation to periodic occurrence of recessions and how changing demand may, in turn, result in changes in fleet composition and size.

ACRP Report 49: Collaborative Airport Capital Planning Handbook provides guidance to those in the airport community who have responsibility for, and a stake in, developing, financing, managing, and overseeing an airport capital plan and the individual projects included in it. The handbook provides guidance on appropriate performers for each task in the collaborative planning process,

and defines and describes the different ways to communicate to help ensure effective exchanges between internal and external stakeholders.

Airport Performance Issues

ACRP Report 19A: Resource Guide to Airport Performance Indicators explores airport performance indicators (APIs) for use in benchmarking and performance measurement. These APIs are sorted by functional type and their criticality to the airport strategic plan. More than 800 performance indicators are presented in three main categories: Core, Key, and Other APIs. “Core” or fundamental indicators are important for overall operation of the airport and of interest to the Chief Executive Officer or governing board. “Key” or departmental indicators are important for the operations of key airport functions and departments. The remaining “Other” indicators are considered useful as secondary departmental unit performance indicators but not critical to the airport’s overall function.

ACRP Report 33: Guidebook for Developing and Managing Airport Contracts is a guidebook of best practices for developing, soliciting, and managing airport agreements and contracts for use by a variety of airports. The agreements referenced in this guidebook range from airline-related agreements to communication and utility service as well as common-use, ground transportation, and concessions agreements for a variety of passenger services. An accompanying CD-ROM provides sample agreements in each of these areas.

ACRP Report 41: Guide to the Decision-Making Tool for Evaluating Passenger Self-Tagging provides the information and tools, included on an accompanying CD-ROM, necessary for an airport or airline to determine the appropriateness of pursuing passenger self-tagging should it be allowed in the United States in the future. The tools, in an Excel spreadsheet format, allow for the input of airport-specific information, such as facility size and passenger flows, while also providing industry averages to assist those airports and airlines that haven’t yet collected their individual information. The decision-making tools provide both qualitative and quantitative information that can then be used to assess if passenger self-tagging meets organizational needs or fits into their strategic plan.

ACRP Report 42: Sustainable Airport Construction Practices explores a set of best practices, methods, procedures, and materials that if implemented during construction may have a sustainable, positive economic, operational, environmental, or social effect. The report includes the collection of sustainable airport construction practices in a searchable, filterable spreadsheet format on a CD-ROM, which is packaged with the report.

ACRP Synthesis Report 22: Common Airport Pavement Maintenance Practices explores how airports implement a pavement maintenance management program, including inspecting and tracking pavement condition, scheduling maintenance, identifying necessary funds, and treating distresses in asphalt and concrete pavements.

Other Airport Issues

ACRP Web-Only Document 12: Risk Assessment of Proposed ARFF Standards explores air carrier passenger aircraft accidents to help determine if changes to Aircraft Rescue and Fire Fighting (ARFF) standards would have reduced the number of fatalities or serious injuries that resulted from past accidents. The report compares standards set forth by the FAA in 14 Code of Federal Regulations (CFR), Part 139, Certification of Airports with the standards of the International Civil Aviation Organization in Annex 14 and standards set forth by the National Fire Protection Association in making determinations of reducing the number of fatalities and serious injuries associated with each accident. In the United States, ARFF is only required at airports subject to 14 CFR Part 139 and may not exist at non-Part 139 airports including general aviation airports. Generally, airports serving scheduled air carrier passenger operations with more than nine passenger seats and unscheduled air carrier passenger service with more than 30 seats are required to have a Part 139 certificate.

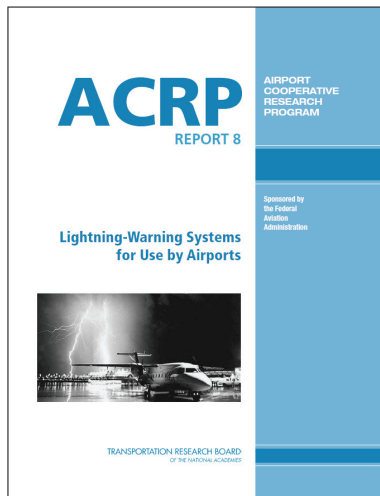
Protecting Airport Personnel from Lightning Strikes

Lightning strikes are particularly hazardous to ramp operations at airports, where ramp workers need to cease outdoor activities when lightning presents an imminent danger. All aspects of airport operations—landside, terminal, and airside—are impacted when there is a ramp closure. *ACRP Report 8: Lightning-Warning Systems for Use by Airports* (2008) provides detailed information about lightning detection and warning systems, which includes the ability for airports to measure the operational benefits available from the systems meant to ensure the safety of personnel and minimize disruptions to airport operations.

A variety of detection technologies exist for determining when lightning occurs. Many detectors are based on radio frequency with varying levels of sophistication, accuracy, and cost. Other systems incorporate the measurement of electric or magnetic fields to detect the presence of lightning. The prediction of lightning can also be a component of a comprehensive lightning warning system. While detection simply states the current or past occurrences of lightning, predictive methodologies attempt to determine where lightning is likely to strike next. Two approaches are utilized for lightning prediction through monitoring the buildup of atmospheric electric fields in response to charged clouds and monitoring the growth and movement of systems that develop into thunderstorms.

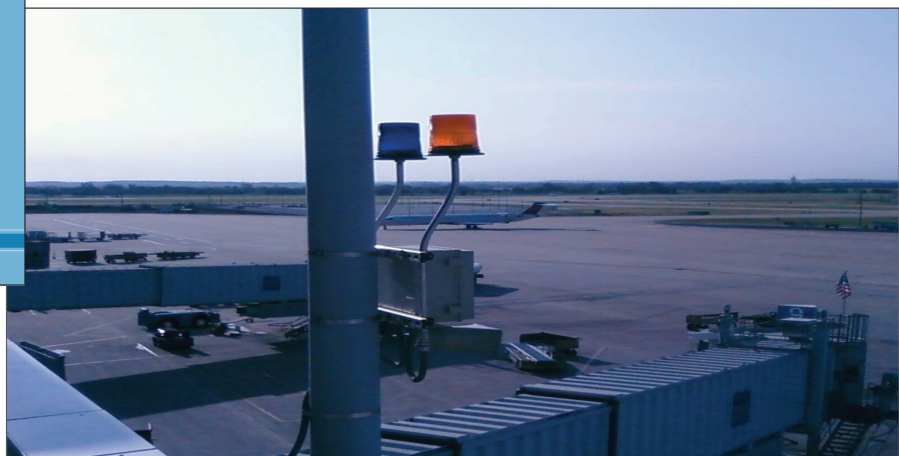
Bergstrom International Airport (AUS) to establish procedures for notifying workers and suspending outdoor actions. AUS utilizes an on-site national weather service (NWS) that provides lightning reports with a phone call when lightning strikes within 8 miles of the airport and then again when lightning strikes within 5 miles of the airport, when an auditory warning is signaled and notifications are sent to pagers. At this warning, the apron is closed for refueling operations due to the risk posed by the nearby lightning. However, ramp workers were sometimes unaware of the auditory warning due to aircraft noise or because they were wearing hearing protection. To ensure that staff received the auditory warning, airport personnel drove to each gate, or called airline operations offices to alert those who hadn't heard the warning. Airlines at the airport had requested an improved warning system to eliminate the need for manual warnings and provide a more complete warning.

Lightning strikes pose a risk to aviation activities in the Austin, Texas, area which has led officials at Austin-



Right: Visual warning system installed at Austin-Bergstrom International Airport (AUS).

Photo courtesy of AUS Airport.



continued on page 2

In response to the airline request, AUS officials identified and selected a visual alerting system. Phillip Bays, Information Security Analyst at AUS, states that *ACRP Report 8* was “instrumental in presenting various alternatives for lightning warning systems that ultimately led to the selection and installation of strobe lights.” *ACRP Report 8* provided detailed information on a range of warning systems and considerations for selecting a system for AUS.

To complement the audible system, strobe lights were installed on the roof of the terminal building at every third gate where each alert could be seen by operators at several gates. The alert is activated by the airport’s communications office through the security system software, which minimized costs through integration with the existing system. The airport is considering expanding the system to buildings outside of the primary terminal area to provide notification to areas that currently require a phone call. The alerts were installed in March 2011 and are tested each week to ensure they are operating as designed. The system is relatively inexpensive and Bays notes that the new warning system offered significant long-term savings as compared to the previous method of sending airport personnel to each gate.

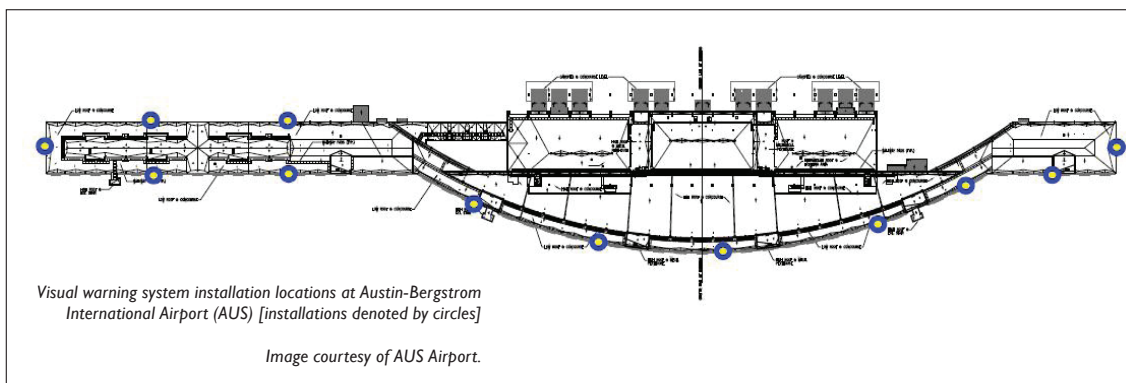
ACRP Report 8 includes information to enable a benefit-cost analysis to assess which systems are most appropriate for a particular airport or airline. A cost benefit analysis of lightning warning systems will include the effects of ramp closures (which negatively impact operations and introduce costs by suspending passenger enplanements and deplanements), baggage loading and unloading, aircraft servicing (fuel, food, etc.), connecting or disconnecting aircraft to ground power, and gate movements. The duration of lightning-related delays affect these activities to varying degrees. Passengers are affected by any delay, while the direct cost to an airline increases significantly between a short and long delay. The system wide impacts of delay also are most pronounced with longer delays because short delays can be absorbed into the system, while long duration delays can cause en route delays.

ACRP Report 8 provides a practical guide for airport lightning detection and warning systems that improve ramp worker safety while minimizing the number and duration of ramp closures. *ACRP Report 8* also provides an outlook on future developments and improvements that can assist lighting detection and warning. The potential information available through NextGen system improvements, better meteorological

“Ramp safety is essential for all airports. All commercial airports with scheduled operations in lightning-prone areas should have lightning detection and warning systems to alert managers and ramp personnel of approaching hazards.”

ACRP Report 8: Lightning-Warning Systems for Use by Airports

data, and refined warning algorithms and criteria through self-monitoring software all offer enhancements for the future of lightning detection and warning.



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Estimating Airport Greenhouse Gas (GHG) Emissions

Local political and community interest in environmental impacts, specifically greenhouse gas (GHG) emissions, are a growing concern for municipalities across the country. These concerns have led to the desire to estimate the contribution of local sources to GHG emissions. *ACRP Report 11: Guidebook on Preparing Airport Greenhouse Gas Emissions Inventories* (2009) was developed to assist airport operators

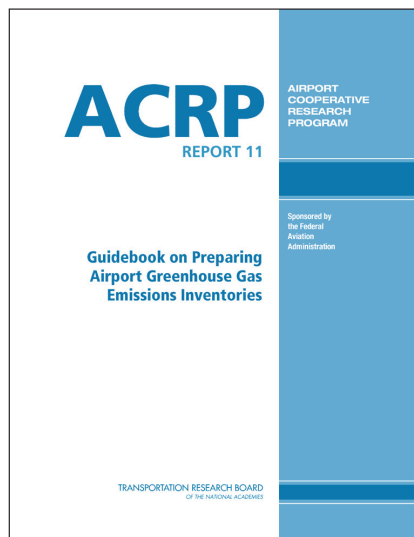
and others with generating airport-specific GHG emission inventories. The guidebook provides a framework for identifying and quantifying specific components of airport contributions to GHG emissions.

Various reasons exist for why a GHG emission inventory should be developed including: 1) climate change initiatives, 2) environmental management and sustainability programs, 3) disclosure of project effects, and 4) future regulations. GHG emissions can be derived from many sources (aircraft, parking facilities and roadways, generators, boilers, heaters, etc.) and activities (parking, maintenance, construction, etc.) at an airport. Ownership or influence of the emissions (airport operator, tenants, public, etc.) are important to consider

as part of an inventory, as well as the geographic components of GHG emissions.

Ultimately, the procedures for developing a GHG emissions inventory rely on data, which may or may not be available at a given airport. To account for numerous data sources and formats, the guidebook provides a preferred approach and alternative quantification approaches for emissions sources. This flexibility allows airports to establish a more complete estimate of emissions even when the preferred methodology cannot be applied.

For instance, when considering the impacts of ground access vehicles at an airport, users are provided three alternatives with varying data requirements, from an average mileage usage applied to an average emissions factor to a vehicle-specific mileage usage combined with vehicle-specific modeled emissions factor. The preferred method is the most complex method with vehicle-specific usage and modeled emissions data, but the guidebook realizes the limitations presented by data availability and recommends that users apply the most complex method possible given the available data. These well-defined methodologies also allow users to determine which data they would like to collect in the future to provide more accurate estimates of GHG emissions, while considering limited budgets for data collection, control over the multiple types of emissions, and the impact of potential mitigation strategies.



Right: Kris Russell in front of boilers at Dallas/Fort Worth International Airport (DFW) that were included as direct emissions sources in the calculation of GHG emissions at the airport.

Photo courtesy of DFW Airport.



continued on page 2

Officials at the Dallas/Fort Worth International Airport (DFW) have used the guidebook to develop a GHG emissions inventory for the airport. Kris Russell, Senior Environmental Analyst at DFW, first learned about the ACRP project at an Air Quality Conference in 2008 sponsored by the American Association of Airport Executives (AAAE). Following the conference, Russell developed a GHG emissions inventory for the airport which considered direct emission sources, indirect sources, and some optional sources. Direct emissions are generated by airport operator-owned vehicles and facilities. Indirect emissions are emissions from plants that generate power purchased by an airport. Optional emissions can include tenant activities (such as aircraft emissions), public ground transportation, and employee commuting.

Russell noted, “The guidebook was useful for applying the concepts and details necessary for developing spreadsheets to calculate the emissions at our airport.” He added, “Additionally, the flexibility available through the alternative estimation techniques made the guidebook practical since we could apply the data we had available.” The options presented in the guidebook allow users to select an acceptable method based on available resources and information.

ACRP Report 11 provides a consistent methodology that can allow for comparisons between airports and help airport owners communicate the current GHG emissions status and the impacts of potential mitigation techniques to local communities and other stakeholders. Users of the inventory procedures can track GHG emissions over time or examine the

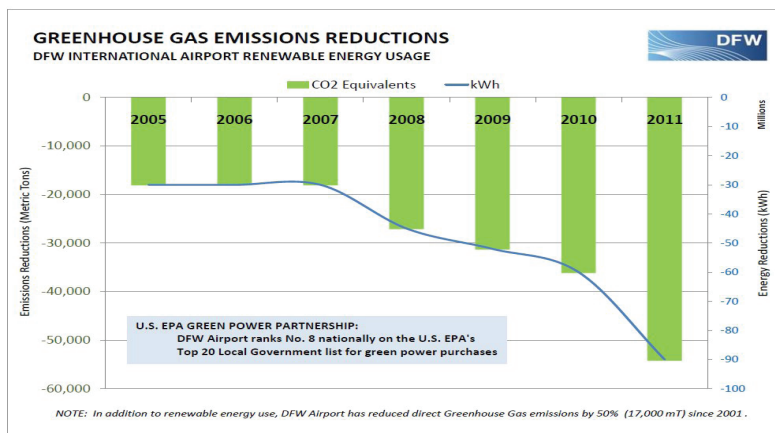
likely effects of operations which might impact GHG emissions.

For DFW, Russell also applied the methodology from ACRP Report 11 to estimate the emissions reductions from acquiring renewable wind energy sources in their electricity contract; these renewable sources have grown to 30% of the facility’s electricity usage since 2005. Reductions can be easily graphed to quickly convey the return on the investment in a technology or alternative energy source over time. This quantification of benefits helps airport management and boards make wise investment decisions and supports collaboration with other entities, such as state or regional transportation agencies, that are working to reduce GHG emissions.

At DFW, staff conducted the emissions inventory and analysis, without the need for outside assistance. However, if in-house resources are not available, ACRP Report 11 offers valuable information for developing proposal requests for hiring consultants to perform the work, ensuring a consistent methodology is applied.

“Given the level of interest regarding aviation’s contribution to GHG emissions and ultimately to climate change, it is important that airports have information necessary to address potential concerns. This guidebook provides a concise set of step-by-step instructions on how to generate airport GHG inventories.”

ACRP Report 11: Guidebook on Preparing Airport Greenhouse Gas Emissions Inventories



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Traumatic Event Assistance for Aviation Employees

Aircraft collisions, aviation-related terrorism actions, or natural disasters that influence airport operations can result in traumatic experiences for airport and air carrier employees. To help with the psychological health of employees and the eventual return to normal operations, airport management and

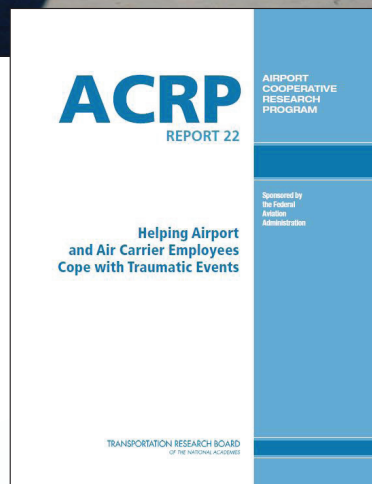
administrative staff can benefit from an enhanced knowledge of appropriate responses to traumatic events. *ACRP Report 22: Helping Airport and Air Carrier Employees Cope with Traumatic Events* (2009) is a resource manual to assist with trauma experienced by those involved in a disaster. *ACRP Report 22* provides fundamental aspects

of traumas and practical guidance for addressing emotional and psychological effects due to involvement in a traumatic incident. Anyone involved in the well-being of employees could further promote staff welfare before, during, and after traumatic incidents from the principles and strategies presented in *ACRP Report 22*. Advanced planning for response to these events will help management recognize symptoms, mitigate emotional impacts, and direct services to those in need.



Above:
 Site of March 29,
 2001 crash at
 Aspen-Pitkin County
 Airport (ASE).

Photo courtesy of
 Hilary Fletcher.



Traumatic events can have a severe effect on the individuals involved, as well as impacts to the operations of the airport and organization. Prior planning within an organization for such events can improve human resiliency, a person's ability to return to their job tasks after a psychological obstacle. To minimize the impacts to operations and business productivity, human resiliency should be promoted in preparation for a disastrous event. *ACRP Report 22* describes a variety of strategies to improve human resiliency and help employees cope with a traumatic event. Training for first-response activities is common, but generally do not include recovery training activities identified in *ACRP Report 22*.

One example of an effective program draws from the post-event response to a chartered flight that crashed on the final approach at Aspen-Pitkin County Airport (ASE) in Aspen, Colorado, on March 29, 2001. All 18 people on board the aircraft were killed. More information about this traumatic event and the response that followed is available in

continued on page 2

ACRP Report 22 as a case study. Hilary Fletcher was County Manager for Pitkin County at the time of the crash and was instrumental in the effort responding to the crash. *ACRP Report 22* highlights the successful leadership, communication, and continuity of care in response to the crash.

To help communities in Colorado recover from aviation incidents, Fletcher founded the Colorado Aviation Recovery Support Team (CARST). CARST team members include airport, aviation, and public safety professionals who have a detailed knowledge of the National Incident Command System and a minimum ICS-400 standards certification. CARST’s mission is to provide mentoring, support, and guidance to assist a community’s recovery efforts after a traumatic aviation event. CARST is able to provide their services at no cost to the local community through support from the Colorado Division of Aeronautics, Colorado Aeronautical Board, Colorado Airport Operators Association, and the participants on the team and their respective organizations.

According to Fletcher, *ACRP Report 22* “provides critical information for helping employees cope with traumatic events.” *ACRP Report 22* provided affirmation of the effort in response to the 2001 crash and was a fundamental building block for the formation of CARST. In *ACRP Report 22*, Fletcher found the five essential mental health intervention principles resulting from disasters developed by Hobfoll et al. (2007)¹ to be particularly useful. The five principles include:

1. Promoting a sense of SAFETY to reduce negative post-trauma reactions.
2. Promoting a sense of CALMNESS to reduce dysfunctions in sleep, concentration, and decision making; unrealistic perceptions of dangerousness; and avoidance.

3. Promoting a sense of SELF-EFFICACY or the sense that a person’s actions are likely to lead to a positive or desired outcome to ensure a sense of competency, normalize emotions, and solve problems.
4. Promoting CONNECTEDNESS to support information sharing, problem solving, normalization, and emotional support.
5. Instilling HOPE by emphasizing individual and organizational strength, decreasing exaggeration of personal responsibility for causing the event, and stressing that most people recover on their own.

ACRP Report 22 also provides extensive recommendations for actions to help employees cope with traumatic events, before, during, and after they occur. A model for a mental health recovery plan is provided, which guides an organization through establishing and customizing a mental health recovery plan and incorporating it into their existing emergency planning exercises. The development of Mental Health Recovery training plans include:

1. Planning and preparedness.
2. Developing and deploying mitigation strategies.
3. Response to the incident.
4. Recovery phase, and
5. Evaluation of the plan.

¹Hobfoll, S.E. et al. (2007). *Five essential elements of immediate and mid-term mass trauma intervention: Empirical evidence. Psychiatry: Interpersonal and Biological Processes*, 70:283–315.

“It has been found through several studies dealing with various traumatic events, that the mental health considerations of an organization’s employees are crucial during the recovery from a traumatic event, and for the continued well-being of an employee.”

ACRP Report 22: Helping Airport and Air Carrier Employees Cope with Traumatic Events

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TABLE 4. 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)

Table 4 (continued)

Reports		
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)
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), 150 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)
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)
11	11-02/Task 14	Helping Airports Understand Payment Card Industry Data Security Standard (PCI DSS), 30 p. (2010)

Table 4 (continued)**Research Results Digests**

No.	Proj. No.	Title, Pages, Publication Year
12	11-03	Synthesis of Information Related to Airport Practices, 6 p. (2011)

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)

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)
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)

Table 4 (continued)

Syntheses (Project 11-03)		
No.	Topic No.	Title, Pages, Publication Year
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, 51 p. (2011)
31	S01-04	Airline and Airline-Airport Consortium to Manage Terminals and Equipment, 102 p. (2011)
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 Scoping, 153 p. (2009)
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)
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)

Table 4 (continued)

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)

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.

TABLE 5 SUMMARY OF PROJECT STATUS THROUGH DECEMBER 31, 2011

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
1: Administration									
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 Corp.	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		

TABLE 5 (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	6/8/2012	Research in progress	E. Novak	M. Salamone
01-14	Considering and Evaluating Airport Privatization	\$500,000(09A)	\$500,000	LeighFisher	5/10/2010	12/31/2011	Completed - Publication Pending	K. Willis	T. Schatz
01-15	Assessing and Implementing Innovative Revenue Strategies - A Guide for Airports	\$400,000(10)	\$400,000	Kramer Aerotech, Inc.	5/14/2010	8/31/2012	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	Complete - Publication Pending	K. Willis	M. Greenberger
01-17	Guidebook for Developing General Aviation Airport Business Plans	\$400,000(10)	\$398,350	Aviation Management Consulting Group	6/28/2010	12/28/2011	Completed - Publication Pending	C. Hugunin	M. Greenberger
01-18	Application of Enterprise Risk Management at Airports	\$350,000(10)	\$350,000	Marsh, USA	6/30/2010	3/30/2012	Research in progress	W. Schuller	M. Greenberger
01-19	Airport Capital Improvements: Developing a Cost-Estimating Model and Database	\$400,000(11)	\$400,000	MCR Federal	7/13/2011	3/13/2013	Research in Progress	J. Breeden R. Samis	L. Goldstein
01-20	Procuring and Managing Professional Services for Airports	\$350,000(11)	\$350,000	HNTB	6/15/2011	12/14/2012	Research in progress	N. Goodly	T. Schatz
01-21	A Guidebook for Airport-Airline Consortiums	\$400,000(12)					In Development		T. Schatz
01-22	Risk Assessment for Capital and Maintenance Projects at Airports	\$300,000(12)					In Development		M. Greenberger

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
2: Environment									
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	12/30/2011	Completed - Publication Pending	M. Gupta	L. Goldstein
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	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		

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-08	Quantifying Contributions to Local Air Quality Impacts from Airport-Related Emissions	\$600,000(08)	\$599,970	Wyle Laboratories, Inc.	6/4/2008	12/30/2011	Completed - Publication Pending	M. Gupta	L. Goldstein
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	Practical Greenhouse Gas Emission Reduction Strategies for Airports	\$500,000(09)	\$499,921	CDM Federal Programs Corp	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	12/11/2011	Completed - Publication Pending	R. Cointin	L. Goldstein
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		
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	11/30/2011	Completed - Publication Pending	E. Melisky L. Wedande	J. Navarrete
02-15	Recycling Strategies for the Airport Industry	\$300,000(09A)	\$300,000	Cascadia Consulting Group	9/22/2010	9/22/2012	Research in progress	J. Barrow S. Urlass	M. Salamone
02-16	Airport Ground Support Equipment (GSE) Inventory and Emission Reduction Strategies	\$600,000(09A)	\$599,717	CDM Federal Programs Corp.	6/18/2010	12/17/2011	Completed - Publication Pending	R. Iovinelli J. Plante	T. Schatz
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	9/2/2012	Research in progress	C. Ma	J. Navarrete
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 - Publication Pending	N. Brown C. Hugunin	T. Schatz

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-19	Winter Design Storm Factors for Airports	\$300,000(09A)	\$249,999	CH2M Hill	6/24/2010	12/1/2012	Research in progress	E. Melisky	M. Greenberger
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	3/6/2012	Research in progress	S. Jones C. Ruehle	J. Navarrete
02-20A	Evaluating and Mitigating the Risk of Disease Transmission at Airports and on Aircraft	\$200,000(11)	\$200,000	Environmental Health & Engineering	7/6/2011	1/6/2013	Research in Progress	S. Jones	J. Navarrete
02-21	Evaluation of Airport Emissions Within State Implementation Plans	\$500,000(10)	\$499,805	KB Environmental Sciences	8/31/2010	2/29/2012	Research in progress	J. Byers R. Iovinelli	L. Goldstein
02-22	Incorporating Sustainability into Traditional Airport Projects	\$300,000(09A)	\$300,000	Landrum & Brown	7/12/2010	3/31/2012	Research in progress	M. Hoven S. Urlass	M. Greenberger
02-23	Alternative Fuels as a Means to Reduce PM2.5 Emissions at Airports	\$500,000(10)	\$499,798	Project Performance Corp/AEA Group	7/6/2010	12/31/2012	Research in progress	W. Gillette	J. Navarrete
02-24	Guidelines for Airport Sound Insulation Programs	\$200,000(10)	\$200,000	Jones Payne Group	8/27/2010	4/26/2012	Research in progress	R. Etter B. He	T. Schatz
02-25	Evaluating Alternatives for Aircraft Ground Power, Heating and Air Conditioning	\$200,000(10)	\$199,773	ESA Airports, Inc.	7/7/2010	12/31/2011	Completed - Publication Pending	L. Butler-Guttilla R. Jefferies	M. Greenberger
02-26	Assessing Aircraft Noise Conditions Affecting Student Learning	\$450,000(10)	\$449,672	Wyle Laboratories, Inc.	6/26/2010	2/25/2012	Research in progress	V. Cattlett 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	12/30/2011	Completed - Publication Pending	J. Byers B. He	L. Goldstein
02-27A	Developing a Generic Commercial Jet Taxi Noise Directivity Pattern for AEDT	\$75,000(12)					In Development		L. Goldstein
02-28	Airport Sustainability Practices: Tools for Evaluating, Measuring, and Implementing	\$800,000(11)	\$599,874	Vanasse Hangen Brustlin, Inc.	6/27/2011	12/26/2012	Research in progress	S. Urlass R. Thompson	J. Navarrete

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-29	Guidance for Treatment of Deicing-Impacted Airport Stormwater	\$600,000(11)	\$500,000	Gresham Smith and Partners	5/31/2011	2/5/2013	Research in progress	C. Pociask	J. Navarrete
02-30	Enhancing the Airport-Industry Database of Sustainable Practices	\$500,000(11)	\$500,000	CDM Federal Prgrams Corp.	7/18/2011	1/18/2014	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	10/8/2012	Research in Progress	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	3/19/2013	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	12/31/2012	Research in Progress	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	12/3/2012	Research in progress	J. Byers W. Gillette	M. Greenberger
02-35	Research Methods for Understanding Aircraft Noise Annoyance and Sleep Disturbance	\$600,000(11)	\$599,993	Harris Miller Miller & Hansen	9/20/2011	9/19/2013	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, Inc.	5/26/2011	12/6/2012	Research in progress	N. Brown C. Hugunin	T. Schatz
02-37	Integrated Noise Model Accuracy for General Aviation Aircraft	\$400,000(11)	\$350,000	Harris Miller Miller & Hanson	6/13/2011	2/13/2013	Research in progress	B. He G. Helm	J. Navarrete
02-38	Guidance for Energy Facilities Compatability with Airports and Airspace	\$450,000(12)					In Development		T. Schatz
02-39	Applying Whole Effluent Toxicity Testing to Evaluate Airport Runoff	\$500,000(12)					In Development		J. Navarrete
02-40	Climate Change Adaption Planning: Risk Assessment for Airports	\$500,000(12)					In Development		M. Salamone

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-41	Improving Take-Off Thrust Setting Estimates for Airport Emissions Inventories	\$450,000(12)					In Development		J. Navarrete
02-42	Understanding Air Quality and Public Health Studies Related to Airports	\$200,000(12)					In Development		J. Navarrete
3: Policy and Planning									
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, Inc.	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	TransSolutions	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	A Guidebook for Measuring Performance of People Mover Systems at Airports	\$300,000(07)	\$300,000	Lea & Elliott	6/13/2007	1/31/2012	Research in progress	G. Neumann A. Jan	L. Goldstein
03-08	Passenger Air-Service Development Techniques	\$300,000(07)	\$300,000	InterVISTAS-ga2 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		

TABLE 5 (continued)

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, Inc.	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	Guidebook for Preparing Peak Period and Operational Profiles to Improve Airport Facility Planning and Environmental Analyses	\$350,000(08)	\$347,044	HNTB Corporation	8/13/2008	1/31/2012	Research in progress	T. Diana	L. Goldstein
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 Usage/Throughput	\$300,000(08)	\$300,000	Trans Solutions, LLC	8/26/2008	12/30/2011	Completed - Publication Pending	G. Neumann	L. Goldstein
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	1/31/2012	Research in progress	J. Herbert R. Samis	L. Goldstein
03-17	Evaluating Airfield Capacity	\$525,000(09)	\$525,000	LeighFisher	6/29/2009	1/31/2012	Research in progress	A. McCormick	T. Schatz
03-18	Operational and Business Continuity Planning for Prolonged Airport Disruptions	\$350,000(10)	\$348,292	Risk Solutions International, LLC	6/3/2010	2/28/2012	Research in progress	L. Valero	T. Schatz
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	9/1/2012	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	6/30/2012	Research in progress	E. Hernandez	J. Navarrete
03-21	Developing and Maintaining Support for New Airport Capacity	\$300,000(10)	\$299,980	Mead & Hunt	6/3/2010	6/30/2012	Research in progress	L. Loarte	J. Navarrete

TABLE 5 (continued)

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	Inter VISTAS Consulting, LLC	7/15/2010	1/14/2012	Research in progress	D. Bhadra P. Devote	L. Goldstein
03-23	Integrating Aviation and Passenger Rail Planning	\$400,000(10)	\$399,452	Resource Systems Group	7/29/2010	1/28/2012	Research in progress	K. Jacobs	T. Schatz
03-24	Guidelines for Air Cargo Facility Planning and Development	\$400,000(11)	\$400,000	CDM/Wilbur Smith	7/17/2011	5/13/2013	Research in Progress	C. Hugunin	L. Goldstein
03-25	Regulatory Compliance Costs and the Impact on Small Airports	\$300,000(11)	\$299,987	Unison Consulting, Inc.	6/3/2011	6/12/2012	Research in progress	K. Slusarski	T. Schatz
03-26	Understanding Airline and Passenger Choice in Regions with Multiple Airports	\$250,000(11)	\$250,000	InterVISTAS	8/4/2011	1/4/2013	Research in Progress	K. Duffy P. LeBoff	J. Navarrete
03-27	Evaluating Methods for Counting Aircraft Operations at Non-Towered Airports	\$400,000(11)	\$400,000	Woolpert	11/21/2011	11/20/2013	Research in Progress	T. Dupree B. Mello	J. Navarrete
03-28	Economic Impact of U.S. Airports	\$400,000(12)					In Development		T. Schatz
4: Safety									
04-01	Analysis of Aircraft Overruns and Undershoots for Runway Safety Areas	\$250,000(06)	\$249,986	Applied Research Associates, Inc.	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) \$300,000(12)	\$499,093	Applied Research Associates	9/12/2007	12/31/2011	Completed - Publication Pending	M. Tonnacliff	M. Greenberger

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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	Comparison of Airport Apron Management and Control Programs With and Without Regulatory Oversight	\$300,000(08)	\$300,000	Ricondo & Associates	5/8/2009	8/30/2011	Completed - Publication Pending	E. Jarvis R. Moseng	M. Salamone
04-07A	Best Practices for Managing the Use of Towbarless Tractors at Airports	\$300,000(08)	\$38,795	Ricondo & Associates	4/20/2009	8/30/2011	Completed - Publication Pending	E. Jarvis R. Moseng	M. Salamone
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	Research in progress	R. Moseng	M. Greenberger
04-11	Integrating GIS in Emergency Management at Airports	\$350,000(11)	\$274,949	Barich, Inc.	7/12/2011	11/11/2013	Research in Progress	G. Neumann	M. Greenberger
04-12	Using Integrated Emergency Data Communication Systems at Airports	\$400,000(11)	\$400,000	Innovative Emergency Management	7/15/2011	11/14/2012	Research in Progress	M. Tonnacliff	T. Schatz
04-13	Integrating Community Emergency Response Teams at Airports	\$400,000(11)	\$400,000	Innovative Emergency Management	7/26/2011	7/26/2013	Research in Progress	M. Tonnacliff	M. Greenberger
04-14	Runway Veer-Off Location Models Distribution Risk Assessment Model	\$200,000(12)					In Development		J. Navarrete

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
04-15	Terminal Evacuation Planning	\$325,000(12)					In Development		T. Schatz
5: Security									
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		
6: Human Resources									
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	2/29/2012	Research in Progress	R. Joel	M. Salamone
7: Design									
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 and 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 and 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		

TABLE 5 (continued)

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	Research in progress	E. Novak	T. Schatz
07-08	Improving Terminal Design to Increase Revenue Generation and Customer Satisfaction	\$500,000(11)	\$496,888	Landrum & Brown, Inc.	6/3/2011	12/8/2012	Research in progress	E. Novak	T. Schatz
07-09	Aircraft Ramp Design and Configuration	\$250,000(12)					In Development		T. Schatz
07-10	General Aviation Facility Planning	\$300,000(12)					In Development		J. Navarrete
07-11	Evaluation Cost-Saving and Energy Reduction Technologies for Escalators and Moving Walkways at Airports	\$250,000(12)					In Development		J. Navarrete
8: Construction									
08-01	Sustainable Airport Construction Practices	\$150,000(09)	\$150,000	Ricondo & Associates, Inc.	6/1/2009	6/22/2010	Completed - Published as Report 42		
9: Maintenance									
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, Inc.	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 and Associates	8/31/2011	2/3/2013	Research in Progress	T. Mai	M. Greenberger
09-03	Airport Parking Garage Lighting Solutions	\$300,000(12)					In Development		J. Navarrete
09-04	Recommissioning and Re-tuning Airport Facilities	\$250,000(12)					In Development		J. Navarrete

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
09-05	Guidance in Successful Computer Maintenance Management Systems (CMMS) Selection and Practices	\$300,000(12)					In Development		M. Greenberger
09-06	Sustainable Practices for Airport Maintenance and Operations	\$300,000(12)					In Development		M. Greenberger
09-07	Airport Maintenance Roles in Planning, Design, Construction, Commissioning, and Activation	\$200,000(12)					In Development		M. Salamone
09-08	Enhancing Compatibility of Storm Water and Wildlife Management Plans at Airports	\$250,000(12)					In Development		J. Navarrete
10: Operations									
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		

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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	1/31/2012	Research in progress	R. Nicosia-Rusin	L. Goldstein
10-09	Elimination of Baggage Recheck for Arriving International Passengers	\$400,000(09)	\$400,000	InterVISTAS-ga2 Consulting	7/22/2009	10/31/2011	Completed - Publication Pending	P. Lo	T. Schatz
10-10	Guidebook for Airport Irregular Operations (IROPS) Contingency Planning	\$600,000(10)	\$599,976	Mead & Hunt	8/26/2010	2/24/2012	Research in progress	L. Chapman	T. Schatz
10-11	Creating a Collaborative Environment Between Airport Operations and Maintenance Departments	\$500,000(11)	\$4,399,840	Amadeus Consulting	7/27/2011	7/27/2013	Research in Progress	M. Hovan	M. Greenberger
10-12	Managing Through the Fence Operations at Airports	\$350,000(12)					In Development		M. Greenberger
10-13	Integrating NIMS for Personnel and resources at Airports	\$200,000(12)					In Development		M. Greenberger
10-14	Designing Solutions for Disrupted Operations	\$300,000(12)					In Development		T. Schatz
10-15	Guidebook for Airport Winter Operations	\$400,000(12)					In Development		T. Schatz
11: Special Projects									
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)		Transportation Research Board	2/1/2006		Continuing Project: See 11-01 Table		M. Greenberger

TABLE 5 (continued)

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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) \$140,000(12)		Various	2/1/2006		Continuing Project: See 11-02 Table	P. Friedman	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)		Transportation Research Board	2/1/2006		Continuing Project: See 11-03 Table		M. Salamone
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)					Continuing Project: Papers published as TRB TRR 2184 3rd Volume - Spring 2012	J. Wharff	L. Goldstein
11-05	Dissemination of ACRP Research Results	\$600,000(10) \$200,000(12)					Continuing Project	J. Showalter	M. Salamone
11-06	Evaluating ACRP Processes	\$250,000(10)					Completed		

TABLE 5 (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	December 2006	Completed - Published as Legal Research Digest 4 (CD ROM 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			Terminated	
02-01	Obstructions Affecting Navigatable 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 Howich, Esq.	October 2008	Completed - Published as Legal Research Digest 10	

TABLE 5 (continued)

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
02-05	Obstructions Affecting Navigatable Airspace and the Use and Success of Avigation Easements	Jocelyn Waite	August 2010	Completed - Publication Pending	M. Greenberger
03-01	Fair Disclosure of Airport Impacts in Real Estate Transfers	Larry Thomas, Esq.	July 2009	Completed - Published as Legal Research Digest 12	M. Greenberger
03-02	Compilation of State Aviation Authorizing Legislation	Jodi Howick, Esq.	August 2009	Completed	M. Greenberger
03-03	Survey of Minimum Standards: Commercial Aeronautical Activities at Airports	Kaplan, Kirsh, Rockwell	July 2009	Completed - Published as Legal Research Digest 11	
03-04	Airport Rates and Charges: Law and Policy	Speigel & McDiarmid	November 2009	Completed - Incorporated into 4-05	
03-05	Analyses of State and Federal Regulations that May Impede State Initiatives to Reduce an Airport's Carbon Footprint	Kaplan, Kirsh, Rockwell	November 2009	Completed - Publication Pending	M. Greenberger
03-06	An Index and Digest of Decisions in LRD 1	Kaplan, Kirsh, Rockwell	December 2009	Completed - Publication Pending	M. Greenberger
04-01	Airport Liability for Wildlife Management	Broad and Cassell	April 2011	April 2012	M. Greenberger
04-02	Legal Issues Related to Developing SMS and SMRD Documents Which May be Available to the Public	Foley & Lardner	December 2012	Research in progress	M. Greenberger
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			In development	M. Greenberger
04-04	Buy America Requirements for Federally Funded Airports	Conner Gwyn Schenk	April 2011	June 2012	M. Greenberger
04-05	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters, through December 2011			In development	M. Greenberger

TABLE 5 (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			In development	M. Greenberger
04-07	Airport Contracting Survey of Federal and State Standards	Broad and Cassell	April 2011	May 2012	M. Greenberger
05-01	The First Amendment and Airport Activities			In development	M. Greenberger
05-02	Sovereign Immunity and Applicability to Airports			In development	M. Greenberger
05-03	The Fourth Amendment and Airports			In development	M. Greenberger
05-04	Airport Grant Assurances: General Requirements and Economic Nondiscrimination			In development	M. Greenberger

TABLE 5 (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 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	TRB Technical Activities Division	2/15/2007	9/15/2007	Completed - Workshop Held - Results Published as TRB Conference Proceedings 41	
Task 07	Current and Emerging Issues Facing the Airport Industry	TRB Staff	8/1/2007	1/31/2009	Completed - Published as Research Results Digest 5	
Task 08	Enhanced Modeling of Aircraft Taxiway Noise - Scoping	Wyle Laboratories	2/14/2008	8/31/2009	Completed - Published as Web-Only Document 9	
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, AAAE, ATA	
Task 11	A Summary of How Proposed Firefighting Standards Would Impact Airports	GRA	12/23/2008	6/15/2009	Completed - Published as Web 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				Completed - Symposium Held - Results Published as Conference Proceedings 47	

TABLE 5 (continued)

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 Aviation 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	Workshop conducted	12/1/2011	12/1/2011	Completed	T. Schatz
Task 21	Innovative Airport Response to Threatened/Endangered Species				In Development	M. Salamone

TABLE 5 (continued)**ACRP PROJECT 11-03****Synthesis of Information Related to Airport Practices**

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
1: Administration						
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	Lois Kramer, Kramer Aerotek	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 Airport-Airline Consortiums	AvAir Pros	April 2010	Completed - Published as Synthesis 31		
S01-05	Synthesis of Airport Organizational Structures			In Development	E. Novak	G. Staba
S01-06	Airport Customer Service Performance Metrics			In Development	D. Favarulo	G. Staba
S01-07	Conducting Airport Peer Reviews			In Development	A. Velayos	G. Staba
2: Environment						
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	HMMH	April 2008	Completed - Published as Synthesis 16		
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	April 2010	Completed - Published as Synthesis 24		
S02-06	Airport Climate Adaptation and Resilience	AEA Group	April 2011	Research in progress	T. Cuddy P. Magnotta	G. Staba

TABLE 5 (continued)

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S02-07	Synthesis of Using Airport Contracts to Enhance Environmental Performance			In Development	K. Willis	G. Staba
S02-08	Synthesis of Environmental Assessments of High Speed Rail in Air Corridors			In Development	R. Cointin H. Sweatt-Essick	G. Staba
S02-09	Airport Environmental Management System Development Processes and Knowledge Gaps			In Development	M. Sedarous	G. Staba
3: Policy and Planning						
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	EDRG	April 2008	Completed - Published as Synthesis 13		
S03-06	Adaptive Reuse of Vacated On-Airport Facilities	Kramer Aerotek, Inc.	April 2010	Completed - Published as Synthesis 25		
4: Safety						
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		

TABLE 5 (continued)

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S04-05	Bird Repellant Techniques on Airports	Mississippi St. Univ.	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	April 2011	Research in progress	K. Spencer	G. Staba
S04-08	Managing Aerial Firefighting Activities on Airports	Critical Path International	May 2011	Research in progress	M. Tonnacliff	G. Staba
S04-09	Synthesis of Emergency Management and Mutual Aid Agreements for Airports			In development	G. Villalobos	G. Staba
5: Security						
S05-01	Intelligent Transportation System (ITS) Sensor Technology for General Aviation			CANCELLED		
6: Human Resources						
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	Research in progress	J. Breeden	G. Staba
S06-04	Adapting New Maintenance Hires to the Airport Environment			In Development	G. Wilson	G. Staba
8: Construction						
S08-01	Airport Terminal Facility Activation Techniques	Arup	March 2009	Completed - Published as Synthesis 20		

TABLE 5 (continued)

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
9: Maintenance						
S09-01	Impact of Rubber Removal Techniques on Runways	University of Oklahoma	June 2007	Completed - Published as Synthesis 11		
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	Research in progress	K. Kodsí	G. Staba
S09-04	Issues with Use of Airfield LED Light Fixtures	RPI University	May 2011	Research in progress	T. Mai	G. Staba
S09-05	Repairing and Maintaining Airport Parking Structure While in Use			In Development	A. Cochran	G. Staba
10: Operations						
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	Airport Ramp Safety Practices	Landry Consultants, LLC	May 2010	Completed - Published as Synthesis 29		
S10-06	Developing Energy Technologies and Their Effects on Airports	Harris, Miller, Miller & Hanson	May 2010	Completed - Published as Synthesis 28		
S10-07	Expediting Aircraft Recovery at Airports	Prather Airport Solutions	May 2011	Research in progress	M. Tonnacliff	G. Staba
S10-08	Conducting Aeronautical Events at Airports			In Development	B. Zeigler	G. Staba

TABLE 5 (continued)

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S10-09	Wildlife Deterrents Using Population Management at Airports			In Development		

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