

ACRP

AIRPORT
COOPERATIVE
RESEARCH
PROGRAM

2019 ANNUAL REPORT OF PROGRESS

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TRANSPORTATION RESEARCH BOARD

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). ACRP carries out applied research on problems that are shared by airport operating agencies and not being adequately addressed by existing federal research programs. ACRP is modeled after the successful National Cooperative Highway Research Program (NCHRP) and Transit Cooperative Research Program (TCRP). ACRP undertakes research and other technical activities in various airport subject areas, including design, construction, legal, maintenance, operations, safety, policy, planning, human resources, and administration. ACRP provides a forum where airport operators can cooperatively address common operational problems.

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), Airlines for America (A4A), and the Airport Consultants Council (ACC) as vital links to the airport community; (2) 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 Academy of Sciences formally initiating the program.

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 ACRP are solicited periodically but may be submitted to 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 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 users of the research: airport operating agencies, service providers, and academic institutions. ACRP produces a series of research reports for use by airport operators, local agencies, the FAA, and other interested parties; industry associations may arrange for workshops, training aids, field visits, webinars, and other activities to ensure that results are implemented by airport industry practitioners.

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Cover photo: Hollywood Burbank Airport

The National Academies of SCIENCES • ENGINEERING • MEDICINE

The **National Academy of Sciences** was established in 1863 by an Act of Congress, signed by President Lincoln, as a private, non-governmental institution to advise the nation on issues related to science and technology. Members are elected by their peers for outstanding contributions to research. Dr. Marcia McNutt is president.

The **National Academy of Engineering** was established in 1964 under the charter of the National Academy of Sciences to bring the practices of engineering to advising the nation. Members are elected by their peers for extraordinary contributions to engineering. Dr. John L. Anderson is president.

The **National Academy of Medicine** (formerly the Institute of Medicine) was established in 1970 under the charter of the National Academy of Sciences to advise the nation on medical and health issues. Members are elected by their peers for distinguished contributions to medicine and health. Dr. Victor J. Dzau is president.

The three Academies work together as the **National Academies of Sciences, Engineering, and Medicine** to provide independent, objective analysis and advice to the nation and conduct other activities to solve complex problems and inform public policy decisions. The National Academies also encourage education and research, recognize outstanding contributions to knowledge, and increase public understanding in matters of science, engineering, and medicine.

Learn more about the National Academies of Sciences, Engineering, and Medicine at www.national-academies.org.

The **Transportation Research Board** is one of seven major programs of the National Academies of Sciences, Engineering, and Medicine. The mission of the Transportation Research Board is to provide leadership in transportation improvements and innovation through trusted, timely, impartial, and evidence-based information exchange, research, and advice regarding all modes of transportation. The Board's varied activities annually engage about 8,000 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.

Learn more about the Transportation Research Board at www.TRB.org.

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Note: Italicized names indicate ACRP staff.

Letter from AOC Chair

In an increasingly interconnected world, airports continue to play a critical role in communities across the globe. Rural and general aviation airports often provide the necessary link for the most remote places to goods and services, providing everything from basic transportation to access to essential medical care. From global cities to isolated counties, airports benefit nearly every sector of the population.

Since 2005, ACRP has successfully served the airport industry by eliciting research needs to address day-to-day challenges and then meeting those needs through a highly participatory process. Over the years, ACRP has built on this foundation with a highly rated webinar program, peer-to-peer engagement and mentoring programs like the ACRP Ambassador and Champion programs, as well as a user-friendly, informative, and accessible website.

2019 was an exciting year for ACRP—not only did the program publish its 200th research report, but it also had its first Champion graduate. In addition, ACRP continued its mission of growing its research product library and expanding its dissemination initiatives, including increased continued practitioner participation with IdeaHub as well as new and interesting Insight Events.

ACRP aims to share its research with as many practitioners as possible. Over the years, ACRP has expanded the platforms it uses to disseminate research and now uses several channels, with a focus on those that are web-based. This year ACRP continued to grow and expand these efforts to reach new practitioners and keep existing users updated and engaged.

This year's Annual Report of Progress provides a snapshot of ACRP's achievements and metrics to measure progress toward its mission. As you read this report, consider ways that you can get further involved with the program. Is there research you would like to see conducted? Perhaps you want to spread the word about ACRP and would like to learn more about its Ambassador program. Whatever your area of expertise, there is no time like the present to join with us and to be a part of this important program.

—Deborah Flint





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Introduction

Flying across the globe is faster than any other mode of transportation: people and businesses increasingly rely on travel that starts and ends at airports to safely and efficiently move goods, travelers, and ideas from one side of the world to the other. In addition to linking destinations across the globe, airports are crucial in connecting rural communities—both to each other and to more distant cities. Rural and general aviation airports provide a vital connection for remote communities to access essential services and goods. From global cities to isolated counties, airports benefit nearly every sector of the population.

Since its establishment in 2005, the Airport Cooperative Research Program (ACRP) has helped foster and sustain these benefits by conducting applied research to help the airport industry address day-to-day challenges. In 2019, ACRP continued conducting high-quality, industry-driven research, disseminating the research to airport practitioners and other stakeholders, and engaging industry members in new and meaningful ways.

ACRP's *2019 Annual Report of Progress* describes the program's activities and accomplishments and how they encourage collaboration to address emerging challenges and foster professional networking across miles and generations. By presenting program metrics and practitioner feedback, the report describes ACRP's highlights and accomplishments.

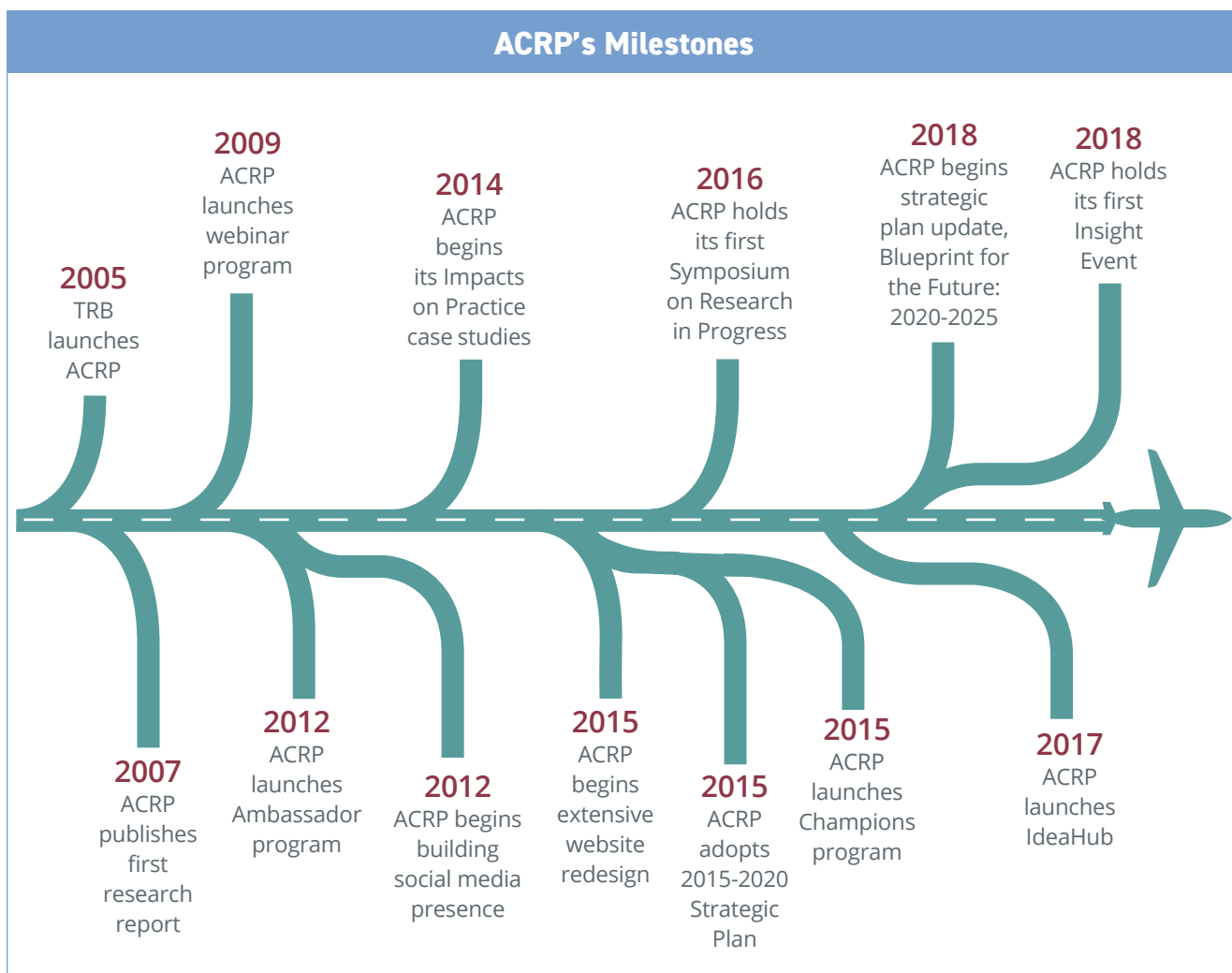
WHAT IS ACRP?

ACRP is an applied research program managed by the Transportation Research Board, part of the National Academies of Sciences, Engineering, and Medicine, and sponsored by the Federal Aviation Administration. Together with public- and private-sector industry experts, ACRP produces myriad research products that cover a diverse set of topics: safety, policy and planning, airport design, construction, legal issues, operations and maintenance, human resources, sustainability, and administration



Key Milestones in ACRP History

Since inception, ACRP has adapted and grown to meet industry needs and expand into new platforms. From the publication of the first research report to the creation and launch of IdeaHub, ACRP has continued to disseminate critical information and cultivate practitioner engagement in innovative ways.





Meet ACRP

Marci A. Greenberger, ACRP Program Manager

Marci A. Greenberger is the ACRP Program Manager and has worked with the Transportation Research Board of the National Academies since 2008. Prior to becoming the Program Manager, she served as a Senior Program Officer (SPO) managing projects on operations, maintenance, safety, and security, as well as legal issues that affect the industry. Before joining ACRP, she spent more than 18 years in airport operations and management in senior executive positions at airports in Rhode Island, Indiana, and California. Ms. Greenberger is an Accredited Airport Executive by the American Association of Airport Executives (AAAE), holds a BS in Aviation Management from The Ohio State University, and earned an MBA from California State University-Northridge.



Matthew Griffin

Matthew Griffin is one of the newest member of the ACRP team, joining the staff as an SPO in October 2019. He previously served as the Director of Regulatory Affairs and Education at the Airports Consultants Council. His history also includes having been the Senior Manager for Policy and Regulatory Affairs at Airports Council International—North America and time spent with the Capital Region Airport Authority in Lansing, Michigan. Before joining the staff, Matthew had the pleasure of serving on various ACRP panels. Matthew holds a BS in Aviation Management from Purdue University as well as a private pilot's certificate.



Lawrence D. Goldstein

Lawrence Goldstein is an SPO and manages research projects across the Cooperative Research Programs at the Transportation Research Board. He has been with The National Academies for more than 10 years, and his recent ACRP studies include research on resilience, changes in competitive travel demand, wetland mitigation, and evolving application of benefit-cost analysis. Before joining ACRP, he specialized in transportation system financial and economic analysis for more than 35 years. Lawrence received his BA in Physics and Mathematics from Columbia College, his MA in Astronomy from Columbia University, and his MURP from George Washington University.





Joseph Navarrete

Joe Navarrete joined ACRP as an SPO in 2009, bringing experience as both a principal investigator and panelist on ACRP projects from his previous job at a large consulting firm. Joe's background is in airport planning for both large and small airports across the country. He began his career at the Metropolitan Washington Council of Governments, and he served as the chief of airport system planning for the Maryland Aviation Administration. As an SPO, Joe particularly enjoys facilitating the collaborative research process that is the hallmark of ACRP. Joe holds a BA in Geography and a certificate in Cartography from George Mason University.

Theresia Schatz

Theresia Schatz is an ACRP SPO with more than 30 years of aviation industry experience. Before managing research projects for ACRP, she worked for The Port Authority of New York and New Jersey in various supervisory and managerial positions entailing airport operations, administration, and property management at JFK, Newark Liberty, and LaGuardia airports. She is an Accredited Airport Executive through AAAE and holds a BS in Aviation Management from the Florida Institute of Technology, an MBA from Baruch College, City University of New York, and an AAS in Aerospace Technology from Farmingdale College, State University of New York.



Gail Staba

Gail Staba is an ACRP SPO and is responsible for facilitating the program's Synthesis studies. Gail brings more than 20 years of experience in transportation planning and environmental management at ports and airports. Her prior experience includes airport planning and environmental consulting in California and work on airport planning, ground transportation, and facilities maintenance management teams at Oakland Airport, San Francisco Airport, Port of Oakland, and Vandenberg Air Force Base Spaceport. Gail holds a BS in Environmental Planning and Policy from the University of California, Davis, and an MS in Transportation Engineering from the University of California, Berkeley.





Overview of Key Accomplishments

2019 was an exciting year for ACRP—from publishing its 200th research report to having its first Champion graduate—the program continued to grow its research product library and expand its dissemination initiatives. This year marked several new accomplishments and built on past successes with IdeaHub, Insight Events, and the website redesign.

This year, ACRP received nearly 80 problem statements from a wide range of stakeholders including airport operators, industry associations, federal and state transportation agencies, universities, and aviation consultants. These problem statements address different types of airports and their needs, encompassing a variety of topics such as encouraging and sustaining a culture of innovation at airports, calculating runway length requirements for general aviation airports, and combatting human trafficking at airports.

In response to these problem statements, ACRP committed more than \$7 million to support new research projects in 2019, which will yield new resources for airport practitioners. This investment will bring the total amount of project funding since 2005 to more than \$140 million. Ultimately, projects undertaken in 2019 will bring the number of ACRP projects authorized since 2006 to more than 600.

Cumulative Funding and Projects by ACRP Research Area Since 2005			
# of projects	Funding	Research topic	Percentage of total
47	\$17,220,000	1: Administration	12
99	\$35,380,000	2: Environment	24
59	\$22,390,000	3: Policy & Planning	15
26	\$8,480,000	4: Safety	6
2	\$650,000	5: Security	<1
8	\$2,570,000	6: Human Resources	2
18	\$6,770,000	7: Design	5
3	\$750,000	8: Construction	1
20	\$6,790,000	9: Maintenance	5
29	\$10,870,000	10: Operations	7
323	\$33,130,000	11: Special Projects	23
634	\$145,000,000		

In 2019, ACRP published 42 research products (reports, digests, syntheses, web-only documents, WebResources, and conference proceedings) covering a wide range of topics relevant to airports.

2019 Publications by Type	
<i>Conference Proceedings and Conference Proceedings on the Web</i>	3
<i>Legal Research Digests</i>	1
<i>Research Reports</i>	18
<i>Research Results Digests</i>	1
<i>Syntheses</i>	12
<i>Web-Only Documents</i>	6
<i>WebResources</i>	1
<i>Total</i>	42



NOTEWORTHY PUBLICATIONS

ACRP research has wide-reaching domestic and international impact. In 2019, practitioners downloaded the following reports more than any other ACRP publications. All download data comes from the National Academies Press's NAXchange site: naxchange.nap.edu.

Research Reports

Top 5 Most Downloaded FY2019 Research Reports	Downloads
<i>ACRP Research Report 16: Guidebook for Managing Small Airports (1st & 2nd Edition)</i>	2,196
<i>ACRP Research Report 25: Airport Passenger Terminal Planning and Design, Volume 1: Guidebook</i>	2,066
<i>ACRP Research Report 191: A Primer to Prepare for the Connected Airport and the Internet of Things</i>	1,277
<i>ACRP Research Report 190: Common Performance Metrics for Airport Infrastructure and Operational Planning</i>	1,195
<i>ACRP Research Report 189: Design Considerations for Airport EOCs</i>	968

Syntheses

Top 5 Most Downloaded FY2019 Syntheses	Downloads
<i>ACRP Synthesis 97: How Airports Plan for Changing Aircraft Capacity: The Effects of Upgauging</i>	377
<i>ACRP Synthesis 91: Microgrids and Their Application for Airports and Public Transit</i>	359
<i>ACRP Synthesis 93: Sustainability's Role in Enhancing Airport Capacity</i>	312
<i>ACRP Synthesis 66: Lessons Learned from Airport Sustainability Programs</i>	255
<i>ACRP Synthesis 63: Overview of Airport Fueling Operations</i>	211

Legal Research Digests

Top 5 Most Downloaded FY2019 Legal Research Digests	Downloads
<i>ACRP Legal Research Digest 32: Evolving Law on Airport Implications by Unmanned Aerial Systems</i>	260
<i>ACRP Legal Research Digest 33: Overview of Airport Duties and Standards of Care in Airfield Accident Cases</i>	145
<i>ACRP Legal Research Digest 35: Legal Considerations in the Funding and Development of Intermodal Facilities at Airports</i>	132
<i>ACRP Legal Research Digest 31: Preemption of Worker-Retention and Labor-Peace Agreements at Airports</i>	119
<i>ACRP Legal Research Digest 34: Airport Public Health Preparedness and Response: Legal Rights, Powers, and Duties</i>	92



ACRP Strategic Initiatives Update

DIGITAL ENGAGEMENT AND DISSEMINATION

ACRP aims to share its research with as many practitioners as possible. Over the years, ACRP has expanded the platforms it uses to disseminate research and now uses several channels, with a focus on those that are web-based. This year ACRP continued to grow and expand these efforts to reach new practitioners and keep existing users updated and engaged.

IdeaHub

IdeaHub is a collaborative online platform for airport practitioners to generate and share ideas and eventually turn them into problem statements with the goal of receiving ACRP research funding. IdeaHub's interactive design aims to foster collaboration among practitioners and improve research ideas through engagement and discussion. Problem statements must identify an issue, describe research needs, and justify how the research will help the airport industry.

During IdeaHub's second year, ACRP refined the platform's design and created new features based on user feedback. These improvements include allowing idea submitters to automatically "own" their ideas, reducing the number of fields required to submit a problem statement, and creating tags to identify and organize idea subject areas. In its inaugural year, 615 people joined the IdeaHub community. ACRP added more than 200 new members in 2019. For fiscal year 2020, 19 projects from 77 problem statements were chosen to receive funding.



The ACRP Oversight Committee (AOC) met in July to determine which problem statements to fund as research projects.

IdeaHub: Key Metrics			
Metric	2018 ¹	2019 ¹	Total
Ideas Shared²			
Research	107	73	180
Syntheses	22	23	45
<i>Total</i>	<i>129</i>	<i>96</i>	<i>225</i>
Comments			
Research	295	132	427
Syntheses	64	36	100
<i>Total</i>	<i>359</i>	<i>168</i>	<i>527</i>
Problem Statements/Topics Submitted for Funding Consideration³			
Problem Statements	55	77	132
Synthesis Topics	26	29	55
<i>Total</i>	<i>81</i>	<i>106</i>	<i>187</i>
Community Members	615	215	830

¹ Twelve months ending in September.

² New research ideas/synthesis topics added.

³ Includes resubmitted problem statements/synthesis topics.



Webinars

ACRP webinars cover a variety of topics and aim to present research findings to practitioners across the country. Webinars feature Principal Investigators (PIs) and research teams who discuss their findings with a large audience of airport practitioners. The ACRP team and PIs work collaboratively to create relevant and engaging presentations.

Webinars: Key Metrics			
Number of webinars hosted in 2019 18	Average webinar satisfaction rating (2011-2019) 91%	Practitioners who have attended at least one webinar in 2019 2,257	Practitioners reached since 2011 22,817 (includes repeat attendees)

“TRB (ACRP), as always, makes a tremendously important contribution in all those technical aspects related to the value chain of the operating system of an airport. It is very helpful to attend the webinars...[and] review and study their related publications.”

– Feedback on More Than Recycling—Best Practices in Airport Waste Management webinar

“I enjoyed the topics of this webinar as they have rekindled a motivation within myself and my co-workers who also participated. This has renewed our sense of purpose on this particular topic.”

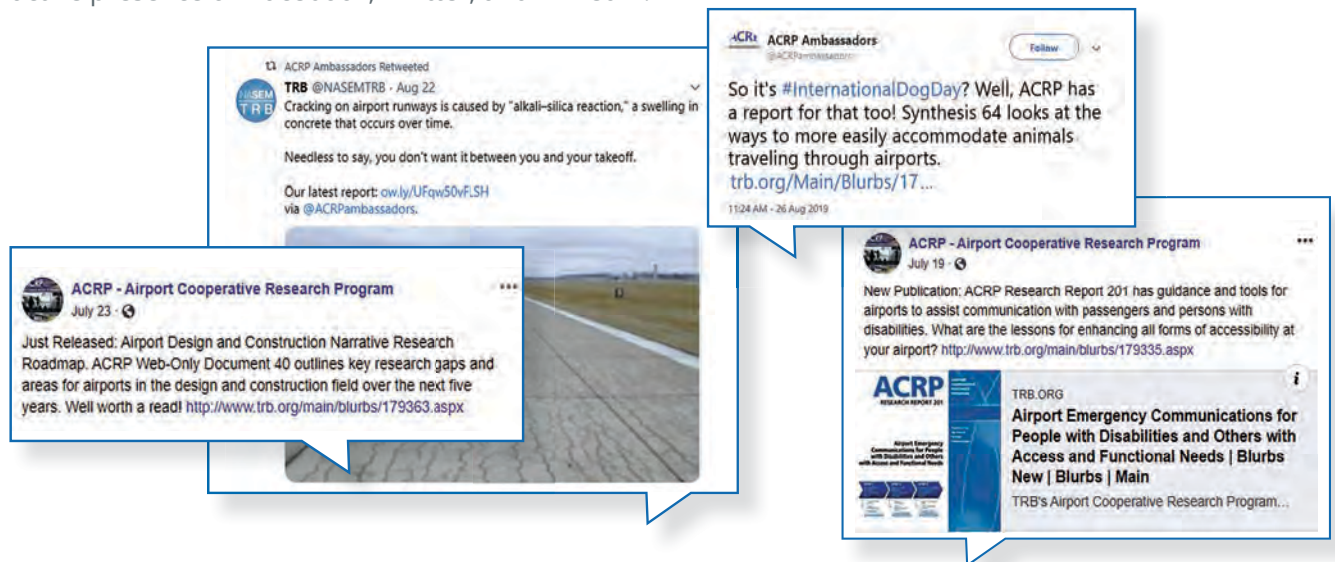
– Feedback on Digitize Your Checklists—Computerized Airport Maintenance Management webinar

“I thought both presenters were very knowledgeable and engaging. I appreciated that one came from a technical background and another came from more of a management background—both had perspectives that were valuable.”

– Feedback on Energetic Value: The Design and Economics of Microgrids at Airports webinar

Social Media

Social media provides a relevant and accessible platform for ACRP to reach new practitioners and stakeholders, engage with its existing network, and highlight events and accomplishments. ACRP maintains an active presence on Facebook, Twitter, and LinkedIn.



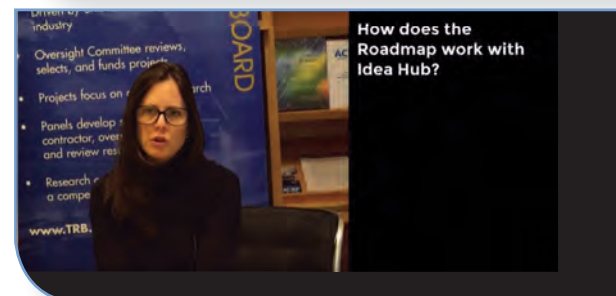
Social Media: Key Metrics

Twitter engagement	Twitter impressions	Facebook reach
<i>The number of interactions a Tweet receives</i>	<i>The number of times a Tweet is displayed online</i>	<i>The number of unique users who see a post or page</i>
322	26,937	6,956

Videos

ACRP uses videos to spread research and information in a different and engaging way. In 2019, ACRP expanded its “ACRP Chats With” series, where industry professionals provided an in-depth look at a specific topic. Some of ACRP’s video offerings include the following:

- **What Makes a Good ACRP Problem Statement?** is a short, whiteboard animation video on the criteria that makes a good problem statement. Using animation video overlays that help illustrate the narration, the video discusses how the ACRP Oversight Committee (AOC) reviews problem statements and provides funding to a select group of projects. The four criteria that the AOC considers are the project’s applicability, achievability, implementation, and understandability.
- **ACRP Chats with Katherine Preston on ACRP Roadmaps** is an interview with Katherine Preston, a principal consultant with HMMH. Preston discusses the recent completion of two ACRP roadmap projects: “Design and Construction of Airport Facilities” and “Airport Operations and Maintenance.” A research roadmap identifies problems or challenges that industry stakeholders share, and problem statements developed from research roadmaps will likely garner greater AOC support, as the industry has already established the need for a solution.



Website

ACRP's website is a complete repository in which practitioners and stakeholders can find information on all program activities. The website is integral for providing up-to-date program information, announcing events and deadlines, and accessing ACRP research and other publications. ACRP continues to improve its website, which, in 2018, underwent a comprehensive overhaul that included a new design, user-friendly navigation, and enhanced search functionality. Throughout 2019, ACRP has continued to refine content, transition pages from the old web design to the new one, create new web banners, and improve search optimization.



Publications
ACRP publications contain the findings of individual research projects managed by...

Projects
View all active and completed projects of the ACRP. All ACRP research ideas are...

Subprograms
Legal, Synthesis, Insight Events, Univ. Students, Ambassadors and Champions.

Getting Involved
For Project Panel Volunteers, Proposers, and Contractors

AIRPORT COOPERATIVE RESEARCH PROGRAM

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PEER-TO-PEER OUTREACH

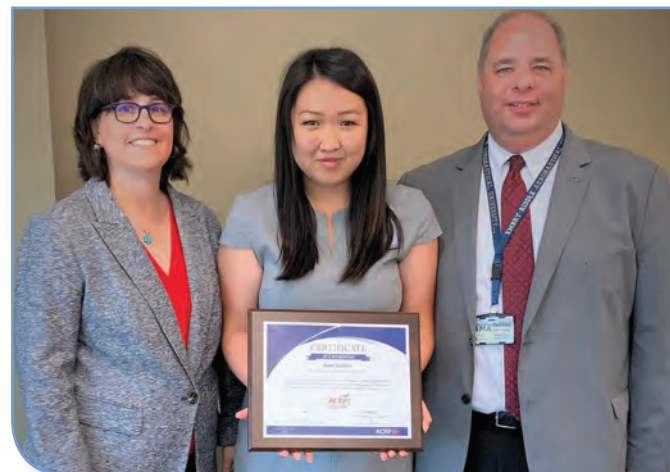
In addition to disseminating research online, ACRP runs two programs that foster in-person communication and engagement—the ACRP Ambassador program and the ACRP Champion program. The Ambassador and Champion programs target different sectors of aviation professionals and offer opportunities to meet new industry members and share ACRP research products.

Champions

The ACRP Champion program provides learning and professional development opportunities to early- to mid-career professionals. An ACRP Champion, sponsored by his or her respective organization, completes a series of “missions” designed to build knowledge and drive engagement in ACRP’s research and dissemination activities.

This year, Amber Leathers, a senior planner at Charlotte Douglas International Airport (CLT), became the first Champion to complete all missions. To celebrate Amber’s accomplishment, ACRP held a luncheon at CLT, where ACRP staff presented Amber with a certificate of completion.

Also this year, ACRP began enhancing the Champion program to clarify



Champion Luncheon photo (L:R): Marci A. Greenberger, Manager, ACRP; Amber Leathers, Senior Planner, CLT; Jack Christine, Chief Operating Officer, CLT

objectives, remove obstacles that have impeded Champions' progress, and create more valuable activities. The program redesign also aims to add prestige and recognition for those who complete the entire program, as well as keep practitioners engaged long-term in ACRP research activities and dissemination.

To accomplish these goals, ACRP developed a new online Champions portal to allow the Champions to obtain new missions and track their progress more easily. Once launched, users will create an online profile within the Champions portal that will help them connect and network with fellow Champions and collaborate to complete various missions and activities. Champions will be able to move around, within, and across missions and report on these activities as they complete them.

Ambassadors

ACRP Ambassadors are a select group of experienced airport professionals that help amplify ACRP's reach. Ambassadors attend conferences around the United States and Canada, staffing exhibits and presenting ACRP research. In 2019, 17 ambassadors reached more than 4,000 practitioners in 18 different states and provinces.

Ambassadors: Key Metrics	
ACRP Ambassadors	17
States and provinces where Ambassadors have attended conferences	23
Airport industry events attended by Ambassadors	23
Practitioners reached by Ambassadors (since 2012)	39,542



2019 Ambassadors (Left to right.) Top row: Aaron Davis, Paul Khera, Daphne Fuller, Andrew Perelson. Middle row: Jean Mongillo, Brenda Enos, Tom Anderson, Amber Fuller, John Walewski. Bottom row: Tara Harl, Nathan Cuvala, Adam Cohen, Erin Cooke.

IMPACTS ON PRACTICE

ACRP's Impacts on Practice (IOP) series highlights airport industry practitioners who have used ACRP research results to assist with their work. ACRP publications cover a wide range of topics and can help improve airport administrative practices, develop safer and more effective operational techniques, and increase performance efficiency. ACRP administers surveys to learn how airports across the country implement its research and uses the responses to identify which leads to pursue and develop into a full case study. In recent years, ACRP has received hundreds of survey responses and testimonials.

In 2019, ACRP published four IOPs, including a special feature on how the FAA and ACRP work together, which is summarized below.

ACRP and FAA: Working Together to Help the Airport Industry describes how ACRP research and FAA guidelines fill distinct but equally important roles in serving the airport community. To develop this IOP, ACRP worked closely with the FAA, interviewing staff from various divisions, reviewing FAA guidelines, and discussing ideas for future collaboration. This one-of-a-kind IOP features an enhanced design with a two-page spread, informative callout boxes, and key quotations.

“The diversity and array of information available at ACRP is second to none.”

— Feedback from IOP interview on *ACRP Research Report 182: Guidance for Planning, Design, and Operations of Airport Communications Centers*

“I like having the ability to cross-reference ACRP and FAA guidance, which in turn validates ACRP.”

— Feedback from IOP interview with FAA

“I wouldn’t be able to work without the information I’ve gotten from this library of publications about airports.”

— Feedback from IOP interview on *ACRP Report 58: Airport Industry Familiarization and Training for Part-Time Airport Policy Makers*

BLUEPRINT FOR THE FUTURE: 2020–2025

The ACRP Oversight Committee (AOC) developed a 5-year strategic plan for ACRP that was adopted in 2015. In October of 2018, the AOC asked ACRP staff to begin an update of that plan and is expected to adopt the new plan, “Blueprint for the Future: 2020–2025” in January 2020.

The strategic plan update began with a look back at the current plan to identify what had been achieved. One of the many accomplishments borne from the first plan was the development and implementation of IdeaHub, ACRP’s successful problem statement collaboration tool. Another accomplishment was the compilation of qualitative and quantitative information on airports using ACRP products, which led to the first 5-Year Research Impact Report. This report identified that downloads have increased 44 percent since 2010. ACRP also successfully launched the young professional Champion program to engage and connect with younger audiences and those in the early stages of their careers. In addition, and among many other accomplishments, ACRP has greatly increased its visibility through social media.

For the new strategic plan, the AOC identified strategic goals and objectives with the overarching priority of engaging stakeholders. The AOC has also ensured that the “Blueprint for the Future: 2020–2025” is consistent with the TRB strategic plan. ACRP staff has identified action items to meet those strategic plan objectives, and the AOC will be provide feedback on the most important priorities to begin implementing in years 1 and 2.



ACRP Activities

ACRP engages industry practitioners through interactive events, programs, and competitions. Throughout 2019, ACRP continued to grow these efforts to connect with all stakeholders, from seasoned industry executives to graduate and undergraduate researchers.

INSIGHT EVENTS

ACRP launched the Insight Event series in 2018 to provide opportunities for airport practitioners to gather around an evolving issue or challenge and examine it through idea exchange and face-to-face learning. The one- to two-day events feature subject matter experts from the airport industry and beyond to promote communication, collaboration, and innovation and to help identify future areas of research interest.

In 2019, ACRP convened its fourth Insight Event, *Public-Private Partnerships—What Are the Lessons Learned?*, to help airport managers and operators better understand key characteristics and considerations for public-private partnerships (P3s). The event brought together airport industry leaders, academic experts, consultants, and other stakeholders to discuss the current landscape of airport P3s. The event also took a detailed look at challenges, opportunities, lessons learned, and best practices across the P3 process from pre-procurement through financial close. Presenters drew from their firsthand experiences pursuing P3s for airports in the United States and shared lessons they learned along the way.

Three additional ACRP Insight Events are being planned for 2020: *A Forum on Blockchain Technology and Airports*, *the Future of Aviation*, and *On-Demand Aviation Services for Passengers and Goods*.



The Insight Event Public-Private Partnerships—What Are the Lessons Learned? took place in July 2019 at the Keck Center.

UNIVERSITY DESIGN COMPETITION

The ACRP University Design Competition serves as a platform for students to address issues related to airports and the National Airspace System. The competition challenges individuals and teams of undergraduate and/or graduate students to create design solutions in the following broad areas: airport operation and maintenance; runway safety/runway incursions/runway excursions; airport environmental interactions; and airport management and planning. Students can win cash prizes, and first place winners present their work at a national award ceremony.

In 2019, more than 50 teams presented their work. The following teams received honors:

Civil and Environmental Engineering Department at the University of California, Berkeley, *Smart Gate System for 400Hz Power Monitoring at Airports*—First place, airport environmental interactions.

School of Aviation and Transportation Technology at Purdue University, *Augmented Reality Airport Training System*—First place, airport operation and maintenance.

Aviation Institute at the University of Nebraska at Omaha, *IoT in the Cockpit: Intelligent Runway Status Indication System (IRSIS)*—First place, runway safety/runway incursions/runway excursions.

Edward J. Bloustein School of Planning and Public Policy at Rutgers University, *Addressing Airport Congestion as Traffic Takes Off in the Age of Uber and Lyft*—First place (tie), airport management and planning.

School of Aviation and Transportation Technology at Purdue University, *Proposal of Mobile Application Design for Aging Travelers in Commercial Airports*—First place (tie), airport management and planning.



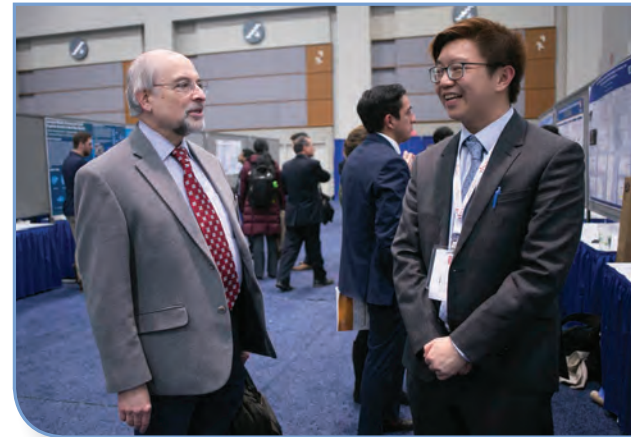
2019 University Design Competition participants at the Keck Center

ACRP GRADUATE RESEARCH AWARDS

The ACRP Graduate Research Awards provide an opportunity to engage graduate students, who are likely to become future managers, operators, designers, and policy makers in aviation. The graduate research program encourages applied research on airport and related aviation system issues to help the public sector continue to improve the quality, reliability, safety, and security of the civil aviation system. In 2019, 11 students out of more than 30 diverse and competitive applicants received ACRP funding to conduct unique research projects. The award winners present their papers at the TRB Annual Meeting and are considered for publication in the *Transportation Research Record: Journal of the Transportation Research Board*.

The 2019 award winners' projects are listed below:

- *Automatic Communication Error Detection Using Speech Recognition and Linguistic Analysis for Proactive Control of Loss of Separation*
- *Impact of Utilizing Electric Ground Power Systems on Airport Electricity Demand Profile*
- *Evaluation of Airport Wayfinding Accessibility with the Use of a Wheelchair Simulator*
- *BIM Implementation Framework for Smart Airport Life Cycle Management*
- *Impacts of Shared Automated Vehicles on Airport Access and Operations, with Opportunities for Revenue Recovery: Case Study of Austin, Texas*
- *Airport Operational Sustainability: A Multiple-Case Study of U.S. General Aviation Airports*
- *Optimization of Takeoff Departure Procedures for Airport Noise Mitigation*
- *What Determines the Valuation of Airport Bonds?*
- *Investigation of Piezoelectric Energy Harvesting Potential at Airport for Green Energy Solutions*
- *Evaluating the Interoperability of Urban Air Mobility Systems and Airports*



ACRP SPO Larry Goldstein (left) speaking with Graduate Research Awards presenter Jason Wong of Columbia University (right) at the 2019 TRB Annual Meeting.



Appendix A: Publications of the Airport Cooperative Research Program

Research Reports

No.	Proj. No.	Title, Pages, Publication Year
1	11-02/Task	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	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	Ground Access to Major Airports by Public Transportation, 214 p. (2008)
5	11-02/Task	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)
14	02-71	Deicing Planning Guidelines and Practices for Stormwater Management Systems, Second Edition: (In Production)
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)
16	01-32	Guidebook for Managing Small Airports, Second Edition: (& WR 6), 362 p. (2019)
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-Measurement 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)

Research Reports

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

Research Reports

No.	Proj. No.	Title, Pages, Publication Year
67	03-14	Airport Passenger Conveyance Systems Planning Guidebook (& CD 110), 68 p. (2012)
68	07-07	Guidebook for Evaluating Terminal Renewal Versus Replacement Options (& CD 112), 152 p. (2012)
69	01-16	Asset and Infrastructure Management for Airports: Primer and Guidebook, 136 p. (2012)
70	10-08	Guidebook for Implementing Intelligent Transportation Systems Elements to Improve Airport Traveler Access Information (& CD 114), 138 p. (2012)
71	02-08	Guidance for Quantifying the Contribution of Airport Emissions to Local Air Quality (& CD 115), 76 p. (2012)
72	02-14	Guidebook for Selecting Methods to Monitor Airport and Aircraft Deicing Materials, 276 p. (2012)
72	02-61	Guidebook for Selecting Methods to Monitor Airport and Aircraft Deicing Materials, Second Edition, 128 p. (2017)
73	04-10	Airport-to-Airport Mutual Aid Programs, 192 p. (2012)
74	01-18	Application of Enterprise Risk Management at Airports (& CD 117), 72 p. (2012)
75	06-02	Airport Leadership Development Program (& CD 133), 334 p. (2013)
76	03-22	Addressing Uncertainty about Future Airport Activity Levels in Airport Decision Making, 152 p. (2012)
77	01-17	Guidebook for Developing General Aviation Airport Business Plans (& CD 119), 174 p. (2012)
78	02-16	Airport Ground Support Equipment (GSE): Emission Reduction Strategies, Inventory, and Tutorial (& CD 123), 114 p. (2012)
79	03-17	Evaluating Airfield Capacity (& CD 124), 172 p. (2012)
80	02-22	Guidebook for Incorporating Sustainability into Traditional Airport Projects (& CD 125), 104 p. (2012)
81	02-19	Winter Design Storm Factor Determination for Airports, 60 p. (2012)
82	03-12	Preparing Peak Period and Operational Profiles—Guidebook (& CD 126; & WOD 14), 146 p. (2013)
83	02-36	Assessing Opportunities for Alternative Fuel Distribution Programs (& CD 129), 128 p. (2013)
84	02-21	Guidebook for Preparing Airport Emissions Inventories for State Implementation Plans (& CD 131), 68 p. (2013)
85	03-21	Developing and Maintaining Support for Your Airport Capacity Project, 40 p. (2013)
86	02-12	Environmental Optimization of Aircraft Departures: Fuel Burn, Emissions, and Noise (& CD 136), 104 p. (2013)
87	01-20	Procuring and Managing Professional Services for Airports, 120 p. (2013)
88	04-11	Guidebook on Integrating GIS in Emergency Management at Airports (& CD 139), 138 p. (2013)
89	02-24	Guidelines for Airport Sound Insulation Programs, 324 p. (2013)
90	03-25	Impact of Regulatory Compliance Costs on Small Airports (& WOD 15 Vol. 1; & WOD 15 Vol. 2), 92 p. (2013)
91	02-20A	Infectious Disease Mitigation in Airports and on Aircraft, 38 p. (2013)
92	10-11	Guidebook to Creating a Collaborative Environment Between Airport Operations and Maintenance, 148 p. (2013)
93	03-18	Operational and Business Continuity Planning for Prolonged Airport Disruptions (& CD 140), 152 p. (2013)
94	04-12	Integrating Web-Based Emergency Management Collaboration Tools into Airport Operations—A Primer, 56 p. (2013)
95	04-13	Integrating Community Emergency Response Teams (A-Certs) at Airports, Basic Training Instructor Guide: , 52 p. (2013)
95	04-13	Integrating Community Emergency Response Teams (A-Certs) at Airports, Basic Training Student Guide: , 40 p. (2013)
95	04-13	Integrating Community Emergency Response Teams (A-Certs) at Airports, What Is CERT and How Do I Use It?: , 72 p. (2013)
96	07-09	Apron Planning and Design Guidebook, 168 p. (2013)
97	02-17	Measuring PM Emissions from Aircraft Auxiliary Power Units, Tires, and Brakes, 52 p. (2013)
98	03-26	Understanding Airline and Passenger Choice in Multi-Airport Regions, 100 p. (2013)
99	02-29	Guidance for Treatment of Airport Stormwater Containing Deicers, 330 p. (2013)
100	02-15	Recycling Best Practices—A Guidebook for Advancing Recycling from Aircraft Cabins, 86 p. (2014)
101	09-02	Best Practices Manual for Working In or Near Airport Movement Areas (& CD 150), 62 p. (2014)
102	02-33	Guidance for Estimating Airport Construction Emissions (& CD 142), 138 p. (2014)

Research Reports

No.	Proj. No.	Title, Pages, Publication Year
103	10-13	A Guidebook for Integrating NIMS for Personnel and Resources at Airports, 128 p. (2014)
104	03-20	Defining and Measuring Aircraft Delay and Airport Capacity Thresholds, 74 p. (2014)
105	02-31	Guidelines for Ensuring Longevity in Airport Sound Insulation Programs, 56 p. (2014)
106	10-14	Being Prepared for IROPS: A Business-Planning and Decision-Making Approach (& CD 144), 88 p. (2014)
107	04-14	Development of a Runway Veer-Off Location Distribution Risk Assessment Model and Reporting Template (& CD 145), 136 p. (2014)
108	02-38	Guidebook for Energy Facilities Compatibility with Airports and Airspace, 94 p. (2014)
109	07-08	Improving Terminal Design to Increase Revenue Generation Related to Customer Satisfaction, 114 p. (2014)
110	09-06	Evaluating Impacts of Sustainability Practices on Airport Operations and Maintenance (& CD 149), 132 p. (2014)
111	01-21	A Guidebook for Airport-Airline Consortiums, 132 p. (2014)
112	04-15	Airport Terminal Incident Response Planning (& CD 151), 98 p. (2014)
113	07-10	Guidebook on General Aviation Facility Planning, 146 p. (2014)
114	10-12	Guidebook for Through-the-Fence Operations, 186 p. (2014)
115	02-32	Understanding Microbial Biofilms in Receiving Waters Impacted by Airport Deicing Activities, 84 p. (2014)
116	01-22	Guidebook for Successfully Assessing and Managing Risks for Airport Capital and Maintenance Projects, 130 p. (2014)
117	07-11	Airport Escalators and Moving Walkways—Cost-Savings and Energy Reduction Technologies (& CD 156), 50 p. (2014)
118	03-23	Integrating Aviation and Passenger Rail Planning (& CD 157), 276 p. (2015)
119	02-28	Prototype Airport Sustainability Rating System—Characteristics, Viability, and Implementation Options, 242 p. (2014)
120	01-19	Airport Capital Improvements: A Business Planning and Decision-Making Approach (& CD 158; & WOD 18), 70 p. (2014)
121	01-15	Innovative Revenue Strategies—An Airport Guide, 304 p. (2015)
122	11-02/Task	Innovative Airport Responses to Threatened and Endangered Species (& CD 160), 60 p. (2015)
123	10-15	A Guidebook for Airport Winter Operations, 138 p. (2015)
124	09-03	Airport Parking Garage Lighting Solutions, 74 p. (2015)
125	09-08	Balancing Airport Stormwater and Bird Hazard Management (& CD 159), 56 p. (2015)
126	01-25	A Guidebook for Increasing Diverse and Small Business Participation in Airport Business Opportunities, 104 p. (2015)
127	01-23	A Guidebook for Mitigating Disruptive WiFi Interferences at Airports, 106 p. (2015)
128	11-02/Task	Alternative IT Delivery Methods and Best Practices for Small Airports, 122 p. (2015)
129	03-27	Evaluating Methods for Counting Aircraft Operations at Non-Towered Airports, 170 p. (2015)
130	07-12	Guidebook for Airport Terminal Restroom Planning and Design (& CD 164), 86 p. (2015)
131	04-16	A Guidebook for Safety Risk Management for Airports, 216 p. (2015)
132	03-28	The Role of U.S. Airports in the National Economy, 68 p. (2015)
133	02-34	Best Practices Guidebook for Preparing Lead Emission Inventories from Piston-Powered Aircraft with the Emission Inventory Analysis Tool (& CD 167; & WOD 21), 46 p. (2015)
134	02-39	Applying Whole Effluent Toxicity Testing to Aircraft Deicing Runoff, 120 p. (2015)
135	02-42	Understanding Airport Air Quality and Public Health Studies Related to Airports, 102 p. (2015)
136	10-17	Implementing Integrated Self-Service at Airports (& CD 168), 114 p. (2015)
137	10-19	Guidebook for Advancing Collaborative Decision Making (CDM) at Airports, 82 p. (2015)
138	10-18	Preventive Maintenance at General Aviation Airports, Vol. 1: Primer, 50 p. (2015)
138	10-18	Preventive Maintenance at General Aviation Airports, Vol. 2: Guidebook (& CD 170), 130 p. (2015)
139	09-04	Optimizing Airport Building Operations and Maintenance Through Retrocommissioning: A Whole-Systems Approach (& CD 169), 192 p. (2015)
140	05-02	Guidebook on Best Practices for Airport Cybersecurity (& CD 171), 160 p. (2015)

Research Reports

No.	Proj. No.	Title, Pages, Publication Year
141	01-24	Renewable Energy as an Airport Revenue Source, 212 p. (2015)
142	03-29	Effects of Airline Industry Changes on Small- and Non-Hub Airports, 194 p. (2015)
143	03-24	Guidebook for Air Cargo Facility Planning and Development (& CD 174; & WOD 24), 120 p. (2015)
144	03-30	Unmanned Aircraft Systems (UAS) at Airports: A Primer, 94 p. (2015)
145	04-17	Applying an SMS Approach to Wildlife Hazard Management (& CD 173), 242 p. (2015)
146	10-16	Commercial Ground Transportation at Airports: Best Practices (& WOD 25), 156 p. (2015)
147	02-40	Climate Change Adaptation Planning: Risk Assessment for Airports (& CD 175), 128 p. (2015)
148	09-09	LED Airfield Lighting System Operation and Maintenance, 86 p. (2015)
149	02-46	Improving Ground Support Equipment Operational Data for Airport Emissions Modeling, 152 p. (2015)
150	01-27	NextGen for Airports: A Primer, 24 p. (2016)
150	03-34	NextGen for Airports, Vol. 1: Understanding the Airport's Role in Performance-Based Navigation: Resource Guide, 164 p. (2016)
150	01-28	NextGen for Airports, Vol. 2: Engaging Airport Stakeholders: Guidebook, 88 p. (2016)
150	01-27	NextGen for Airports, Vol. 3: Resources for Airports, 96 p. (2016)
150	09-12	NextGen for Airports, Vol. 4: Leveraging NextGen Spatial Data for Airports: Guidebook, 104 p. (2016)
150	03-33	NextGen for Airports, Vol. 5: Airport Planning and Development, 156 p. (2017)
151	02-56	Developing a Business Case for Renewable Energy at Airports (& CD 177), 168 p. (2016)
152	02-51	Evaluating Methods for Determining Interior Noise Levels Used in Airport Sound Insulation Programs, 148 p. (2016)
153	10-23	Guidebook for IROPS Stakeholder Communication & Coordination (& CD 180), 234 p. (2016)
154	02-59	Water Efficiency Management Strategies for Airports (& CD 181), 144 p. (2016)
155	09-14	Guidebook for Advanced Computerized Maintenance Management System Integration at Airports, 164 p. (2018)
156	10-21	Guidebook for Managing Compliance with Federal Regulations: An Integrated Approach (& CD 182), 64 p. (2016)
157	01-26	Improving the Airport Customer Experience, 240 p. (2016)
158	02-50	Deriving Benefits from Alternative Aircraft-Taxi Systems, 28 p. (2016)
159	09-11	Pavement Maintenance Guidelines for General Aviation Airport Management, 234 p. (2016)
160	02-49	Addressing Significant Weather Impacts on Airports: Quick Start Guide and Toolkit, 90 p. (2016)
161	03-35	Guidelines for Improving Airport Services for International Customers, 248 p. (2016)
162	02-57	Guidebook for Assessing Airport Lead Impacts, 32 p. (2016)
163	03-32	Guidebook for Preparing and Using Airport Design Day Flight Schedules, 158 p. (2016)
164	02-54	Exhaust Emissions from In-Use General Aviation Aircraft, 122 p. (2016)
165	02-65	Tracking Alternative Jet Fuel, 66 p. (2016)
166	02-53	Interpreting the Results of Airport Water Monitoring: A Guidebook, 200 p. (2017)
167	10-24	Guidebook for Developing Ramp Control Facilities, 104 p. (2017)
168	04-18	Runway Protection Zones (RPZs) Risk Assessment Tool Users' Guide, 76 p. (2017)
169	02-61	Clean Water Act Requirements for Airports, 40 p. (2017)
170	10-25	Guidebook for Preparing Public Notification Programs at Airports, 160 p. (2017)
171	06-03	Establishing a Coordinated Local Family Assistance Program for Airports, 156 p. (2017)
172	09-13	Guidebook for Considering Life-Cycle Costs in Airport Asset Procurement, 250 p. (2017)
173	02-60	Use and Potential Impacts of AFFF Containing PFASs at Airports, 232 p. (2017)
174	02-62	Green Stormwater Infrastructure, Vol. 1: Primer, 50 p. (2017)
174	02-62	Green Stormwater Infrastructure, Vol. 2: Guidebook, 116 p. (2017)
175	07-14	Improving Intelligibility of Airport Terminal Public Address Systems, 174 p. (2017)
176	03-39	Generating Revenue from Commercial Development On or Adjacent to Airports, 308 p. (2017)
177	07-13	Enhancing Airport Wayfinding for Aging Travelers and Persons with Disabilities, 318 p. (2017)
178	02-64	Guidance for Usage of Permeable Pavement at Airports, 88 p. (2017)
179	02-58	Dispersion Modeling Guidance for Airports Addressing Local Air Quality Health Concerns, 44 p. (2017)
180	02-63	Guidebook for Quantifying Airport Ground Access Vehicle Activity for Emissions Modeling, 52 p. (2017)

Research Reports

No.	Proj. No.	Title, Pages, Publication Year
181	02-48	Assessing Community Annoyance of Helicopter Noise, 148 p. (2017)
182	10-20	Guidance for Planning, Design, and Operations of Airport Communications Centers, 172 p. (2017)
183	02-66	User Guides for Noise Modeling of Commercial Space Operations--RUMBLE and PCBoom (& WOD 33), 190 p. (2018)
184	03-38	Executive Summary for the Guidebook on Understanding FAA Grant Assurance Obligations (& WOD 44 Vol. 1; & WOD 44 Vol. 2; & WOD 44 Vol. 3; & WOD 44 Vol. 4), 36 p. (2018)
185	02-67	Airport Air Quality Management 101 (& WR 4), 66 p. (2018)
186	06-04	Guidebook on Building Airport Workforce Capacity, 230 p. (2018)
187	04-04B	Transportation Emergency Response Application (TERA) Support Materials for Airport EOC Exercises, 212 p. (2018)
188	02-74	Using Existing Airport Management Systems to Manage Climate Risk, 104 p. (2018)
189	04-20	Design Considerations for Airport EOCs, 100 p. (2018)
190	03-41	Common Performance Metrics for Airport Infrastructure and Operational Planning, 178 p. (2018)
191	01-33	A Primer to Prepare for the Connected Airport and the Internet of Things, 82 p. (2018)
192	01-30	Airport Management Guide for Providing Aircraft Fueling Services, 244 p. (2019)
193	02-68	Strategies for Airports to Reduce Local Stormwater Utility Fees, 88 p. (2018)
194	03-36	Using Disaggregated Socioeconomic Data in Air Passenger Demand Studies, 132 p. (2019)
195	09-16	Best Practices for Airport Obstruction Management Guidebook (& WR 7), 128 p. (2019)
196	08-02	Guidebook for Integrating Collaborative Partnering into Traditional Airport Practices, 106 p. (2019)
197	02-72	Guidebook for Developing a Comprehensive Renewable Resources Strategy, 150 p. (2019)
198	02-70	Wetland Mitigation, Vol. 1: Executive Summary, 12 p. (2019)
198	02-70	Wetland Mitigation, Vol. 2: A Guidebook for Airports, 166 p. (2019)
199	02-78	Climate Resilience and Benefit–Cost Analysis: A Handbook for Airports, 158 p. (2019)
200	03-37	Using GIS for Collaborative Land Use Compatibility Planning Near Airports, 130 p. (2019)
201	04-21	Airport Emergency Communications for People with Disabilities and Others with Access and Functional Needs, 140 p. (2019)
202	01-34	Developing Innovative Strategies for Aviation Education and Participation, 108 p. (2019)
203	09-17	Guidelines for Collecting, Applying, and Maintaining Pavement Condition Data at Airports, 120 p. (2019)
204	03-40	Air Demand in a Dynamic Competitive Context with the Automobile (& WOD 38), 112 p. (2019)
205	02-77	Revolving Funds for Sustainability Projects at Airports, 132 p. (2019)
206	04-22	Guidebook on Effective Land Use Compatibility Planning Strategies for General Aviation Airports, 150 p. (2019)
207	02-76	Optimizing the Use of Electric Preconditioned Air (PCA) and Ground Power Systems at Airports, 112 p. (2019)
208	02-75	Benefit–Cost Analyses Guidebook for Airport Stormwater, 116 p. (2019)
209	02-69	Integrating Sustainability and the Environmental Review Process, 74 p. (2019)

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	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. (2008)
4	11-03	Synthesis of Information Related to Airport Practices, 4 p. (2009)
5	11-02/Task	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	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)

Research Results Digests

No.	Proj. No.	Title, Pages, Publication Year
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	Helping Airports Understand Payment Card Industry Data Security Standard (PCI DSS), 30 p. (2010)
12	11-03	Synthesis of Information Related to Airport Practices, 6 p. (2011)
13	11-03	Synthesis of Information Related to Airport Practices, 8 p. (2012)
14	11-04	Graduate Research Award Program on Public-Sector Aviation Issues, 20 p. (2012)
15	04-07A	Use of Towbarless Tractors at Airports—Best Practices, 16 p. (2012)
16	11-01	Legal Aspects of Airport Programs, 12 p. (2012)
17	11-03	Synthesis of Information Related to Airport Practices, 8 p. (2013)
18	11-03	Synthesis of Information Related to Airport Practices, 8 p. (2014)
19	11-04	Graduate Research Award Program on Public-Sector Aviation Issues Update: 2008–2013, 20 p. (2014)
20	11-07	Taking Inventory of ACRP Research and the Next Challenges Facing the Airport Industry, 76 p. (2014)
21	11-02/Task	Best Practices for General Aviation Aircraft Fuel-Tank Sampling, 20 p. (2014)
22	11-03	Synthesis of Information Related to Airport Practices, 12 p. (2015)
23	11-03	Synthesis of Information Related to Airport Practices, 12 p. (2016)
24	02-44	Recommended Community Noise Model Enhancements to Improve Prediction of Helicopter Activity Impacts, 6 p. (2015)
25	11-04	Graduate Research Award Program on Public-Sector Aviation Issues Update: 2008–2017, 28 p. (2017)
26	11-03	Synthesis of Information Related to Airport Practices, 12 p. (2017)
27	11-01	Legal Aspects of Airport Programs—An Update, 24 p. (2017)
28	11-05/Task 1	Thought Leader Forum Summary—Emerging Issues for ACRP, 18 p. (2019)

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), 0 p. (2008)
5	01-05	Responsibility for Implementation and Enforcement of Airport Land-Use Zoning Restrictions, 68 p. (2009)
6	01-07	The Impact of Airline Bankruptcies on Airports, 62 p. (2009)
7	01-08	Airport Governance and Ownership, 72 p. (2009)
8	01-06	The Right to Self-Fuel, 82 p. (2009)
9	02-03	Case Studies on Community Challenges to Airport Development, 64 p. (2010)
10	02-04	Analysis of Federal Laws, Regulations, and Case Law Regarding Airport Proprietary Rights, 52 p. (2010)
11	03-03	Survey of Minimum Standards: Commercial Aeronautical Activities at Airports, 60 p. (2011)
12	03-01	Fair Disclosure and Airport Impact Statements in Real Estate Transfers, 70 p. (2011)
13	03-06	An Index and Digest of Decisions: Compilation of Airport Law Resources (CD 108) (2012)
14	02-05	Achieving Airport-Compatible Land Uses and Minimizing Hazardous Obstructions in Navigable Airspace, 74 p. (2012)
15	03-02	Compilation of State Airport Authorizing Legislation, 108 p. (2012)
16	04-07	Procurement of Airport Development and Planning Contracts, 50 p. (2012)

Legal Research Digests (Project 11-01)

No.	Topic No.	Title, Pages, Publication Year
17	03-05	State and Federal Regulations That May Affect Initiatives to Reduce Airports' GHG Emissions, 70 p. (2012)
18	04-04	Buy America Requirements for Federally Funded Airports, 72 p. (2013)
19	04-02	Legal Issues Related to Developing Safety Management Systems and Safety Risk Management at U.S. Airports, 48 p. (2013)
20	04-01	Airport Responsibility for Wildlife Management, 162 p. (2013)
21	04-05	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters Through December 2012 (CD 141) (2013)
22	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, 62 p. (2014)
23	05-04	A Guide for Compliance with Grant Agreement Obligations to Provide Reasonable Access to an AIP-Funded Public Use General Aviation Airport, 64 p. (2015)
24	05-02	Sovereign Immunity for Public Airport Operators, 188 p. (2015)
25	04-03	Analysis of Federal Laws, Regulations, Case Law, and Survey of Existing Airport NPDES Permits Regarding Tenant-Operator Responsibilities under NPDES and Stormwater Management BMPs under Owner/Airport's Operating Permits, 82 p. (2015)
26	05-01	Regulations Affecting the Exercise of First Amendment Activities at Airports, 82 p. (2015)
27	05-03	The Fourth Amendment and Airports, 48 p. (2016)
28	06-01	Operational and Legal Issues with Fuel Farms, 36 p. (2016)
29	07-01	Impact of Firearms Laws on Airports (& WOD 29), 66 p. (2016)
30	06-02	Contract Risk Management for Airport Agreements, 40 p. (2016)
31	07-02	Preemption of Worker-Retention and Labor-Peace Agreements at Airports, 40 p. (2017)
32	08-03	Evolving Law on Airport Implications by Unmanned Aerial Systems, 96 p. (2017)
33	08-02	Overview of Airport Duties and Standards of Care in Airfield Accident Cases, 48 p. (2017)
34	09-01	Airport Public Health Preparedness and Response: Legal Rights, Powers, and Duties, 60 p. (2018)
35	08-04	Legal Considerations in the Funding and Development of Intermodal Facilities at Airports, 36 p. (2018)
36	08-01	Legal Issues Related to Implementation and Operation of SMS for Airports, 30 p. (2018)
37	09-02	Legal Issues Relating to Airports Promoting Competition, 36 p. (2019)

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)

Syntheses (Project 11-03)

No.	Topic No.	Title, Pages, Publication Year
16	S02-03	Compilation of Noise Programs in Areas Outside DNL 65, 112 p. (2009)
17	S02-04	Approaches to Integrating Airport Development and Federal Environmental Review Process, 44 p. (2009)
18	S06-01	Aviation Workforce Development Practices, 44 p. (2010)
19	S01-02	Airport Revenue Diversification, 64 p. (2010)
20	S08-01	Airport Terminal Facility Activation Techniques, 136 p. (2010)
21	S10-04	Airport Energy Efficiency and Cost Reduction, 82 p. (2010)
22	S09-02	Common Airport Pavement Maintenance Practices, 112 p. (2011)
23	S04-05	Bird Harassment, Repellent, and Deterrent Techniques for Use on and Near Airports, 40 p. (2011)
24	S02-05	Strategies and Financing Opportunities for Airport Environmental Programs, 228 p. (2011)
25	S03-06	Strategies for Reuse of Underutilized or Vacant Airport Facilities, 72 p. (2011)
26	S04-06	Current Airport Inspection Practices Regarding FOD (Foreign Object Debris/Damage), 96 p. (2011)
27	S06-02	Airport Self-Inspection Practices, 122 p. (2011)
28	S10-06	Investigating Safety Impacts of Energy Technologies on Airports and Aviation, 48 p. (2011)
29	S10-05	Ramp Safety Practices, 68 p. (2011)
30	S01-03	Airport Insurance Coverage and Risk Management Practices, 60 p. (2011)
31	S01-04	Airline and Airline-Airport Consortium to Manage Terminals and Equipment, 102 p. (2011)
32	S04-08	Managing Aerial Firefighting Activities on Airports, 44 p. (2012)
33	S02-06	Airport Climate Adaptation and Resilience, 96 p. (2012)
34	S09-03	Subsurface Utility Engineering Information Management for Airports, 58 p. (2012)
35	S09-04	Issues with Use of Airfield LED Light Fixtures, 44 p. (2012)
36	S06-03	Exploring Airport Employee Commute and Parking Strategies, 70 p. (2012)
37	S04-07	Lessons Learned from Airport Safety Management Systems Pilot Studies, 72 p. (2012)
38	S10-07	Expediting Aircraft Recovery at Airports, 108 p. (2012)
39	S10-09	Airport Wildlife Population Management, 78 p. (2013)
40	S01-05	Issues with Airport Organization and Reorganization, 40 p. (2013)
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46	S01-07	Conducting Airport Peer Reviews, 48 p. (2013)
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49	S06-04	Helping New Maintenance Hires Adapt to the Airport Operating Environment, 60 p. (2013)
50	S04-11	Effective Cooperation Among Airports and Local and Regional Emergency Management Agencies for Disaster Preparedness and Response, 52 p. (2014)
51	S07-01	Impacts of Aging Travelers on Airports, 36 p. (2014)
52	S10-10	Habitat Management to Deter Wildlife at Airports, 84 p. (2014)
53	S02-10	Outcomes of Green Initiatives: Large Airport Experience, 72 p. (2014)
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55	S03-08	Backcountry Airstrip Preservation, 88 p. (2014)
56	S01-08	Understanding the Value of Social Media at Airports for Customer Engagement, 157 p. (2014)
57	S10-12	Airport Response to Special Events, 148 p. (2014)
58	S04-10	Safety Reporting Systems at Airports, 65 p. (2014)
59	S03-07	Integrating Airport Geographic Information System (GIS) Data with Public Agency GIS, 74 p. (2014)
60	S04-12	Airport Emergency Post-Event Recovery Practices, 86 p. (2015)
61	S03-10	Practices in Preserving and Developing Public-Use Seaplane Bases, 96 p. (2015)
62	S03-09	Cell Phone Lots at Airports, 72 p. (2015)

Syntheses (Project 11-03)

No.	Topic No.	Title, Pages, Publication Year
63	S10-13	Overview of Airport Fueling System Operations, 118 p. (2015)
64	S04-10	Issues Related to Accommodating Animals Traveling Through Airports, 86 p. (2015)
65	S10-14	Practices to Develop Effective Stakeholder Relationships at Smaller Airports, 70 p. (2015)
66	S02-11	Lessons Learned from Airport Sustainability Plans, 98 p. (2015)
67	S09-06	Airside Snow Removal Practices for Small Airports with Limited Budgets, 110 p. (2015)
68	S01-10	Strategies for Maintaining Air Service, 60 p. (2015)
69	S02-12	Airport Sustainability Practices—Drivers and Outcomes for Small Commercial and General Aviation Airports, 116 p. (2016)
70	S09-07	Building Information Modeling for Airports, 96 p. (2016)
71	S04-14	Airport Safety Risk Management Panel Activities and Outcomes, 128 p. (2016)
72	S04-17	Table Top and Full-Scale Emergency Exercises for General Aviation, Non-Hub, and Small Hub Airports, 164 p. (2016)
73	S04-16	Emergency Communications Planning for Airports, 100 p. (2016)
74	S04-13	Combining Mixed-Use Flight Operations Safely at Airports, 172 p. (2016)
75	S04-15	Airport Advisories at Non-Towered Airports, 68 p. (2016)
76	S02-13	Helicopter Noise Information for Airports and Communities, 144 p. (2016)
77	S02-14	Airport Sustainability Practices, 52 p. (2016)
78	S01-11	Continuity of Operations Planning for Small Airports, 236 p. (2016)
79	S01-14	Funding Industrial Aviation, 52 p. (2017)
80	S03-13	Estimating Truck Trip Generation for Airport Air Cargo Activity, 56 p. (2017)
81	S01-13	Food and Beverages and Retail Operators: The Costs of Doing Business at Airports, 152 p. (2017)
82	S04-18	Uses of Social Media to Inform Operational Response and Recovery During an Airport Emergency, 102 p. (2017)
83	S03-12	Preparing Airports for Communicable Diseases on Arriving Flights, 102 p. (2017)
84	S03-11	Transportation Network Companies: Challenges and Opportunities for Airport Operators, 70 p. (2017)
85	S02-15	Alternative Fuels in Airport Fleets, 52 p. (2017)
86	S01-15	Airport Operator Options for Delivery of FBO Services, 100 p. (2018)
87	S01-12	Airport Participation in Oil and Gas Development, 90 p. (2018)
88	S02-16	Airport Community, Water Quality Events, and the Aircraft Drinking Water Rule, 56 p. (2018)
89	S02-19	Clean Vehicles, Fuels, and Practices for Airport Private Ground Transportation Providers, 64 p. (2018)
90	S04-19	Incorporating ADA and Functional Needs in Emergency Exercises, 38 p. (2018)
91	S01-16	Microgrids and Their Application for Airports and Public Transit (Joint: TCRP Syn. 137), 66 p. (2018)
92	S02-18	Airport Waste Management and Recycling Practices, 52 p. (2018)
93	S02-17	Sustainability's Role in Enhancing Airport Capacity, 74 p. (2018)
94	S01-17	Attracting Investment at General Aviation Airports Through Public–Private Partnerships, 72 p. (2019)
95	S04-20	Airport Incident Reporting Practices, 112 p. (2019)
96	S09-08	Practices to Mitigate Alkali-Silica Reaction (ASR) Affected Pavements at Airports, 90 p. (2019)
97	S03-15	How Airports Plan for Changing Airport Capacity: The Effects of Upgauging, 100 p. (2019)
98	S03-14	Simulation Options for Airport Planning, 80 p. (2019)
99	S04-23	Emergency Working Groups at Airports, 86 p. (2019)
100	S02-20	Airport Greenhouse Gas Reduction Efforts, 118 p. (2019)
101	S07-02	Communication Strategies for Airport Passenger Access and Mobility, 84 p. (2019)
102	S01-18	Value, Benefits, and Limitations of Qualifications-Based Selection for Airport Project Delivery, 108 p. (2019)
103	S06-05	Promoting Aviation Career Education in High Schools and Community Colleges, 166 p. (2019) Current
104	S10-15	Current Landscape of Unmanned Aircraft Systems at Airports, 118 p. (2019)
105	S04-22	Airport Surface Weather Observations Options for General Aviation Airport, 104 p. (2019)

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	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	Enhanced Modeling of Aircraft Taxiway Noise, Vol. 1: Scoping, 153 p. (2009)
9	02-27	Enhanced Modeling of Aircraft Taxiway Noise, Vol. 2: Aircraft Taxi Noise Database and Development Process, 138 p. (2013)
10	10-07	Appendix A: Documentation for ACRP Report 41 (& 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	Risk Assessment of Proposed ARFF Standards, 105 p. (2011)
13	02-23	Alternative Fuels as a Means to Reduce PM2.5 Emissions at Airports, 175 p. (2012)
14	03-12	Guidelines for Preparing Peak Period and Operational Profiles (& CD 126; & Rep. 82), 316 p. (2013)
15	03-25	Data Supporting the Impact of Regulatory Compliance on Small Airports, Vol. 1: Appendixes A, B, & C (& Rep. 90), 121 p. (2013)
15	03-25	Data Supporting the Impact of Regulatory Compliance on Small Airports, Vol. 2: Technical Appendixes (& Rep. 90), 151 p. (2013)
16	02-26	Assessing Aircraft Noise Conditions Affecting Student Learning, Vol. 1: Final Report, 71 p. (2014)
16	02-26	Assessing Aircraft Noise Conditions Affecting Student Learning, Vol. 2: Appendixes, 143 p. (2014)
17	02-35	Research Methods for Understanding Aircraft Noise Annoyance and Sleep Disturbance, 174 p. (2014)
18	01-19	Airport Capital Improvements: Developing a Cost-Estimating Model and Database (& CD 158; & Rep. 120), 45 p. (2014)
19	02-37	Integrated Noise Model Accuracy for General Aviation Aircraft, 92 p. (2014)
20	03-16	Guidebook for Estimating the Economic Impact of Air Cargo Operations at Airports, 360 p. (2014)
21	02-34	Quantifying Aircraft Lead Emissions at Airports (& Rep. 133), 218 p. (2015)
22	03-19	Passenger Value of Time, Benefit-Cost Analysis, and Airport Capital Investment Decisions, Vol. 1: Guidebook for Valuing User Time Savings in Airport Capital Investment Decision Analysis, 50 p. (2015)
22	03-19	Passenger Value of Time, Benefit-Cost Analysis, and Airport Capital Investment Decisions, Vol. 2: Final Report, 113 p. (2015)
22	03-19	Passenger Value of Time, Benefit-Cost Analysis, and Airport Capital Investment Decisions, Vol. 3: Appendix A: Background Research and Appendix B: Stated Preference Survey, 345 p. (2015)
23	09-05	Guidance on Successful Computer Maintenance Management Systems (CMMS) Selection and Practices, 166 p. (2015)
24	03-24	Air Cargo Facility Planning and Development—Contractor's Final Report (& Rep. 143), 395 p. (2015)
25	10-16	Commercial Ground Transportation at Airports: Best Practices, Appendixes C through H (& Rep. 146), 822 p. (2015)
26	02-45	Methodology to Improve EDMS/AEDT Quantification of Aircraft Taxi/Idle Emissions, 97 p. (2016)
27	09-10	Methodology to Develop the Airport Terminal Building Energy Use Intensity (ATB-EUI) Benchmarking Tool (& CD 178), 34 p. (2016)
28	06-04	Identifying and Evaluating Airport Workforce Requirements—Phase 1 Report, 182 p. (2016)
29	11-01/Topic 07-01	Compendium of State and Federal Laws Affecting the Possession of Firearms at Airports (& LRD 29), 727 p. (2016)
30	02-43	Development of a NOx Chemistry Module for EDMS/AEDT to Predict NO2 Concentrations, 330 p. (2017)
31	10-22	Improving Stakeholder Engagement in Aircraft Accident Response Planning, 66 p. (2017)
32	02-52	Improving AEDT Noise Modeling of Mixed Ground Surfaces, 154 p. (2017)

Web-Only Documents

No.	Proj. No.	Title, Pages, Publication Year
33	02-66	Commercial Space Operations Noise and Sonic Boom Modeling and Analysis (& Rep. 183), 91 p. (2018)
34	02-47	Assessing Aircraft Noise Conditions Affecting Student Learning—Case Studies, 257 p. (2017)
35	02-80	State of the Industry Report on Air Quality Emissions from Sustainable Alternative Jet Fuels, 41 p. (2018)
36	02-55	Enhanced AEDT Modeling of Aircraft Arrival and Departure Profiles, Vol. 1: Guidance Document, 47 p. (2018)
36	02-55	Enhanced AEDT Modeling of Aircraft Arrival and Departure Profiles, Vol. 2: Research Report, 74 p. (2018)
37	11-02/Task	Research Roadmap in the Area of Airport Operations and Maintenance, 34 p. (2019)
38	03-40	Technical Appendix to Air Demand in a Dynamic Competitive Context with the Automobile (& Rep. 204), 91 p. (2019)
39	11-02/Task	Policy and Planning Issues Roadmap Report, 42 p. (2019)
40	11-02/Task	Airport Design and Construction Narrative Research Roadmap, 34 p. (2019)
41	02-80	Alternative Jet Fuels Emissions: Quantification Methods Creation and Validation Report, 122 p. (2019)
43	02-79	Improving AEDT Modeling for Aircraft Noise Reflection and Diffraction from Terrain and Manmade Structures 122 p. (2019)
44	03-38	Understanding FAA Grant Assurance Obligations, Vol. 1: Guidebook (& Rep. 184), 275 p. (2018)
44	03-38	Understanding FAA Grant Assurance Obligations, Vol. 2: Technical Appendices (& Rep. 184), 185 p. (2018)
44	03-38	Understanding FAA Grant Assurance Obligations, Vol. 3: Research Report (& Rep. 184), 43 p. (2018)
44	03-38	Understanding FAA Grant Assurance Obligations, Vol. 4: Summary of AIP Grant Assurance Requirements (& Rep. 184), 207 p. (2018)

CDs

No.	Proj. No.	Title, Publication Year
68	11-01/Topic 01-01	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)
91	02-07	The Alternative Fuels Investigation Tool (AFIT) for ACRP Report 46 (& Rep. 46) (2011)
93	03-15	Airport Forecasting Risk Assessment Program for ACRP Report 48 (& Rep. 48) (2011)
94	01-09	Interactive Resource Guide for ACRP Report 19A (& Rep. 19A) (2011)
95	02-10	AirportGEAR and Supplemental Material (& Rep. 56) (2011)
98	04-08	Runway Safety Area Risk Analysis Tool for ACRP Report 50 (& Rep. 50) (2011)
102	03-11	Supplemental Materials for ACRP Report 44 (& Rep. 44) (2011)
108	11-01/Topic 03-06	An Index and Digest of Decisions: Compilation of Airport Law Resources (LRD 13) (2012)
109	01-14	Appendices for ACRP Report 66 (& Rep. 66) (2012)

CDs		
No.	Proj. No.	Title, Publication Year
110	03-14	Resource CD for ACRP Report 67 (& Rep. 67) (2012)
112	07-07	Analysis Templates for ACRP Report 68 (& Rep. 68) (2012)
113	02-25	Tools for Evaluating Emissions and Costs of APUs and Alternative Systems (TEECAAS) for ACRP Report 64 (& Rep. 64) (2012)
114	10-08	Applying Intelligent Transportation Systems to Improve Airport Traveler Access Information (& Rep. 70) (2012)
115	02-08	Appendixes to ACRP Report 71 (& Rep. 71) (2012)
117	01-18	Airport ERM Tool for ACRP Report 74 (& Rep. 74) (2012)
119	01-17	Digital Files for ACRP Report 77: Guidebook for Developing General Aviation Airport Business Plans (& Rep. 77) (2012)
123	02-16	Airport Ground Support Equipment: Tutorial and Database (& Rep. 78) (2012)
124	03-17	Supplemental Material to ACRP Report 79: Prototype Airfield Capacity Spreadsheet Model (& Rep. 79) (2012)
125	02-22	Evaluation Tool to Supplement ACRP Report 80 (& Rep. 80) (2012)
126	03-12	Guidebook and Toolboxes for ACRP Report 82 (& Rep. 82; & WOD 14) (2013)
129	02-36	Toolkit for Evaluating Alternative Fuel Distribution Programs and Appendixes to ACRP Report 83 (& Rep. 83) (2013)
131	02-21	Airport Emissions Estimator Tool and Other Support Material for ACRP Report 84 (& Rep. 84) (2013)
133	06-02	Supplemental Materials for ACRP Report 75: Airport Leadership Development Program (& Rep. 75) (2013)
136	02-12	Departure Optimization Investigation Tool (DOIT) (& Rep. 86) (2013)
137	02-20	The Vector-Borne Disease Airport Importation Risk Tool (2013)
139	04-11	Tool Set for Integrating GIS in Emergency Management at Airports (& Rep. 88) (2013)
140	03-18	Airport Business Continuity Planning Software Tool (& Rep. 93) (2013)
141	11-01/Topic 04-05	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters Through December 2012 (LRD 21) (2013)
142	02-33	Airport Construction Emissions Inventory Tool (ACEIT) (& Rep. 102) (2014)
144	10-14	IROPS Investment Support Tool (IRIS) (& Rep. 106) (2014)
145	04-14	Lateral Runway Safety Area Risk Analysis (LRSARA) Tool (& Rep. 107) (2014)
149	09-06	Evaluation Process and Cost-Benefit Tool (& Rep. 110) (2014)
150	09-02	Supplemental Materials for ACRP Report 101 (& Rep. 101) (2014)
151	04-15	Airport Terminal Incident Response Plan (TIRP) Tool (& Rep. 112) (2014)
156	07-11	Supplemental Material to ACRP Report 117 (& Rep. 117) (2014)
157	03-23	Air/Rail Diversion Model (& Rep. 118) (2015)
158	01-19	ACCE: Airport Capital Cost Estimation Tool (& Rep. 120; & WOD 18) (2014)
159	09-08	Bird Strike Risk Analysis and Stormwater Management Decision Tool (& Rep. 125) (2015)
160	11-02/Task	Airport Toolbox for ACRP Report 122 (& Rep. 122) (2014)
161	02-41	Estimating Takeoff Thrust Settings for Airport Emissions Inventories (2015)
164	07-12	Appendixes for the Guidebook for Airport Terminal Restroom Planning and Design (& Rep. 130) (2015)
167	02-34	Emissions Inventory Analysis Tool (& Rep. 133) (2015)
168	10-17	Integrated Self-Service Tools for ACRP Report 136 (& Rep. 136) (2015)
169	09-04	Spreadsheet Tool and Appendices to ACRP Report 139 (& Rep. 139) (2015)
170	10-18	Checklists and PowerPoint Template for ACRP Report 138 (& Rep. 138 Vol. 2) (2015)
171	05-02	Multimedia Materials Supporting the Guidebook on Best Practices for Airport Cybersecurity (& Rep. 140) (2015)
173	04-17	WHaMRAT Tool, User Guide, and Quick-Start Guides (& Rep. 145) (2015)
174	03-24	Air Cargo Facility Planning Model (& Rep. 143) (2015)
175	02-40	ACROS Tool and Other Resources to Accompany ACRP Report 147 (& Rep. 147) (2015)
177	02-56	Supplemental Information for ACRP Report 151 (& Rep. 151) (2016)
178	09-10	Airport Terminal Building Energy Use Intensity (ATB-EUI) Benchmarking Tool (& WOD 27) (2016)
180	10-23	IROPS Tools for Planning, Communication & Coordination (& Rep. 153) (2016)

CDs

No.	Proj. No.	Title, Publication Year
181	02-59	End Use Water Audit Tool (& Rep. 154) (2016)
182	10-21	Regulation Compliance Management Tool (& Rep. 156) (2016)

WebResources

No.	Proj. No.	Title, Pages, Publication Year
1	03-31	Aligning Community Expectations with Airport Roles (2017)
2	07-15	Airport Passenger Terminal Design Library (2017)
3	02-61	Airport Stormwater Electronic Resource Library and Training Materials (2017)
3	02-71	Airport Stormwater Electronic Resource Library and Training Materials: Update (In Production)
4	02-67	Airport Air Quality Resource Library (& Rep. 185) (2018)
5	01-27	Tools and Case Studies for NextGen for Airports (2018)
6	01-32	Resources for Managing Small Airports (& Rep. 16 Second Edition) (2018)
7	09-16	Best Practices for Airport Obstruction Management Library (& Rep. 195) (2019)

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	Research on the Transmission of Disease in Airports and on Aircraft, 70 p. (2010)
55	11-08(16-03)	Airport Roles in Reducing Transmission of Communicable Diseases: Proceedings of a Workshop of the Airport Cooperative Research Program's 2018 Insight Event, 31 p. (2019)

Conference Proceedings on the Web

No.	Proj. No.	Title, Pages, Publication Year
23	11-08(16-02)	Social/Economic Sustainability at Airports: Proceedings of a Workshop of the Airport Cooperative Research Program's 2018 Insight Event, 21 p. (2019)
24	11-08	Challenges to Implementing Successful Land Use Strategies at Airports: Proceedings of a Workshop, 31 p. (2019)

Notes:

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

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

Appendix B: Summary of Project Status Through December 31, 2019

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
01: 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	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		

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	7/31/2016	Completed		
01-14	Considering and Evaluating Airport Privatization	\$500,000(09A)	\$500,000	Leigh Fisher	5/10/2010	12/31/2011	Completed - Published as Report 66		
01-15	Innovative Revenue Strategies - An Airport Guide	\$400,000(10)	\$400,000	KRAMER aerotek, Inc.	5/14/2010	12/31/2014	Completed - Published as Report 121		
01-16	Asset and Infrastructure Management for Airports	\$400,000(10)	\$400,000	GHD Consulting	6/16/2010	12/1/2011	Completed - Published as Report 69		
01-17	Guidebook for Developing General Aviation Airport Business Plans	\$400,000(10)	\$398,350	Aviation Management Consulting Group	6/28/2010	6/1/2012	Completed - Published as Report 77		
01-18	Application of Enterprise Risk Management at Airports	\$350,000(10)	\$350,000	Marsh, USA	6/30/2010	3/30/2012	Completed - Published as Report 74		
01-19	Airport Capital Improvements: A Business Planning and Decision-Making Approach	\$400,000(11)	\$400,000	MCR Federal, LLC	7/13/2011	7/31/2014	Completed - Published as Report 120 and Web-Only Document 18		
01-20	Procuring and Managing Professional Services for Airports	\$350,000(11)	\$350,000	HNTB	6/15/2011	1/20/2013	Completed - Published as Report 87		
01-21	A Guidebook for Airport-Airline Consortiums	\$400,000(12)	\$387,642	AVAirPros	6/1/2012	4/1/2014	Completed - Published as Report 111		
01-22	Guidebook for Successfully Assessing and Managing Risks for Airport Capital and Maintenance Projects	\$300,000(12)	\$300,000	Direct Effect Solutions, Inc.	8/14/2012	5/14/2014	Completed - Published as Report 116		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
01-23	A Guidebook for Mitigating Disruptive WiFi Interference at Airports	\$350,000(13)	\$349,489	System Planning Corp.	5/2/2013	8/1/2014	Completed - Published as Report 127		
01-24	Renewable Energy as an Airport Revenue Source	\$400,000(13)	\$399,612	Harris Miller Miller & Hanson	8/13/2013	3/31/2015	Completed - Published as Report 141		
01-25	A Guidebook for Increasing Diverse and Small Business Participation in Airport Business Opportunities	\$250,000(13)	\$250,000	Exstare Federal Services, LLC	8/13/2013	9/6/2014	Completed - Published as Report 126		
01-26	Improving the Airport Customer Experience	\$400,000(14)	\$400,000	Leigh Fisher	7/11/2014	2/15/2016	Completed - Published as Report 157		
01-27	NextGen - A Primer	\$750,000(14)	\$750,000	Logistics Management Institute	6/16/2014	1/31/2017	Completed - Published as WebResource 5		
01-28	NextGen - Guidance for Engaging Airport Stakeholders	\$300,000(14)	\$300,000	Grafton Technologies, Inc.	6/4/2014	5/6/2016	Completed - Published as Report 150, Volume 2		
01-29	Design and Development of a State Aviation Information Database	\$150,000(16)	\$149,975	iEngineering Corporation	8/31/2016	3/29/2019	Completed - Database provided to NASAO		
01-30	Airport Management Guide for Providing Aircraft Fuel Services	\$350,000(16)	\$350,000	KRAMER aerotek, Inc.	10/1/2016	6/30/2018	Completed - Published as Research Report 192		
01-31	Innovative Solutions to Facilitate Accessibility for Airport Travelers with Disabilities	\$350,000(16)	\$349,973	Open Doors Organization	6/16/2016	4/15/2019	Completed - Publication Pending	R. Bornhorst L. Miller	T. Schatz
01-32	Updating ACRP Report 16: Guidebook for Managing Small Airports	\$350,000(16)	\$349,948	Hanson Professional Services, Inc.	8/18/2016	4/30/2018	Completed - Published as WebResource 6		
01-33	Preparing for the Connected Airport and the Internet of Things	\$400,000(16)	\$400,000	Texas A&M Transportation Institute	6/22/2016	3/30/2018	Completed - Published as Research Report 191		
01-34	Developing Innovative Strategies for Aviation Education and Participation	\$400,000(16)	\$350,000	Mead & Hunt Inc.	9/21/2016	12/31/2018	Completed - Published as Research Report 202		J. Navarrete

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
01-35	Transportation Network Companies (TNC's): Impacts To Airport Revenues and Operations	\$500,000(18)	\$498,512	Ricondo & Associates	2/14/2017	9/30/2019	Completed - Publication Pending	K. Brockman R. Clark	T. Schatz
01-36	Guidebook for Developing State Aviation System Plans	\$300,000(18)	\$299,999	Kimley-Horn & Associates	4/29/2019	10/31/2020	Research in Progress	C. Nutting J. Raymond A. Velayos	J. Navarrete
01-37	Performance Measures for State Aviation Agencies	\$250,000(18)	\$250,000	Mead & Hunt Inc.	6/18/2018	3/20/2020	Research in Progress	K. Erhard C. Fields B. Gearhart	M. Greenberger
01-38	Market Characteristics for Property at Small Airports	\$200,000(18)	\$200,000	Aviation Management Consulting Inc.	5/9/2018	6/8/2019	Completed - Publication Pending	R. Etter G. Loftus A. Walter	M. Greenberger
01-39	Creating Marketing Techniques to Improve Revenue Generation Partnerships	\$300,000(19)		Global Dynamics Group	10/6/2019	10/5/2020	Research in Progress	D. Duchow	J. Navarrete
01-40	Evaluating the Traveler's Perspective to Improve the Airport Customer Experience	\$500,000(19)	\$500,000	IOS Partners, Inc.	5/1/2019	9/30/2020	Research in Progress	J. Raymond	T. Schatz
01-41	Blockchain Technology and Airports - A Primer	\$330,000(19)	\$0				In Development		T. Schatz
01-42	Review of Airport Governance Structures	\$300,000(19)	\$300,000	Crawford, Murphy & Tilly, Inc.	4/24/2019	7/23/2020	Research in Progress	M. Vasconcelos	M. Greenberger
01-43	Conducting Consumer Research of Air Passengers	\$450,000(19)	\$450,000	JD Frantz Research, Inc.	6/10/2019	12/9/2020	Research in Progress	W. Reinhardt	J. Navarrete
01-44	Airport Insurance Requirements	\$300,000(20)	\$0				In Development		M. Greenberger
01-45	Updated Guidebook for Airport Project Delivery Systems	\$450,000(20)	\$0				In Development		M. Greenberger

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
01-46	Geospatial Data Governance—Organization Factors and Best Practices for Airports	\$450,000 (20)	\$0				In Development		
01-47	Guide to Airport Innovation—Creating an Organizational Fit for the Future	\$300,000 (20)	\$0				In Development		
01-48	Assessing the Effectiveness of Airport Services and Programs for Passengers with Disabilities	\$500,000 (20)	\$0				In Development		T. Schatz
02: 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	3/30/2012	Completed - Published as Report 63		
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		

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

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-14	Guidebook for Selecting Methods to Monitor Airport and Aircraft Deicing Materials	\$200,000(09)	\$150,000	Gresham, Smith and Partners	6/3/2010	2/28/2012	Completed - Published as Report 72		
02-15	Recycling Best Practices - A Guidebook for Advancing Recycling from Aircraft Cabins	\$300,000(09)	\$300,000	Cascadia Consulting Group	9/22/2010	7/15/2013	Completed - Published as Report 100		
02-16	Airport Ground Support Equipment (GSE) Inventory and Emission Reduction Strategies	\$600,000(09)	\$599,717	CDM	6/18/2010	6/30/2012	Completed - Published as Report 78		
02-17	Measuring PM Emissions from Aircraft Auxiliary Power Units, Tires and Brakes	\$500,000(09)	\$500,000	Missouri University of Science and Technology	9/3/2010	5/31/2013	Completed - Published as Report 97		
02-18	Guidelines for Integrating Alternative Jet Fuel into the Airport Setting	\$250,000(09)	\$249,982	Metron Aviation	6/17/2010	10/16/2011	Completed - Published as Report 60		
02-19	Winter Design Storm Factor Determination for Airports	\$300,000(09)	\$249,999	CH2M Hill	6/24/2010	12/1/2012	Completed - Published as Report 81		
02-20	The Role of Air Travel in the Transmission and Spread of Insect-Borne Diseases	\$250,000(10)	\$249,995	University of Florida	9/7/2010	9/30/2013	Completed - Published as CRP-CD-137		
02-20A	Infectious Disease Mitigation in Airports and on Aircraft	\$200,000(11)	\$200,000	Environmental Health & Engineering	7/6/2011	5/31/2013	Completed - Published as Report 91		
02-21	Guidebook for Preparing Airport Emissions Inventories for State Implementation Plans	\$500,000(10)	\$499,805	KB Environmental Sciences	8/31/2010	2/28/2013	Completed - Published as Report 84		
02-22	Incorporating Sustainability into Traditional Airport Projects	\$300,000(09)	\$300,000	Landrum & Brown	7/12/2010	5/31/2012	Completed - Published as Report 80		
02-23	Alternative Fuels as a Means to Reduce PM2.5 Emissions at Airports	\$500,000(10)	\$499,798	Project Performance Corp.	7/6/2010	4/30/2012	Completed - Published as Web-Only Document 13		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-24	Guidelines for Airport Sound Insulation Programs	\$200,000(10)	\$200,000	Jones Payne Group	8/27/2010	3/8/2013	Completed - Published as Report 89		
02-25	Evaluating Alternatives for Aircraft Ground Power, Heating, and Air Conditioning	\$200,000(10)	\$199,773	Environmental Science Associates	7/7/2010	12/31/2011	Completed - Published as Report 64		
02-26	Assessing Aircraft Noise Conditions Affecting Student Learning	\$450,000(10)	\$449,672	Wyle Laboratories, Inc.	6/26/2010	11/30/2013	Completed - Published as Web-Only Document 16		
02-27	Aircraft Taxi Noise Database for Airport Noise Modeling	\$150,000(10)	\$149,779	Wyle Laboratories, Inc.	6/11/2010	3/29/2013	Completed - Published as Web-Only Document 9, Volume 1		
02-27A	Developing a Generic Commercial Jet Taxi Noise Directivity Pattern for AEDT	\$75,000(12)	\$74,767	Wyle Laboratories, Inc.	2/22/2012	3/29/2013	Completed - Published as Web-Only Document 9, Volume 2		
02-28	Prototype Airport Sustainability Rating System - Characteristics, Viability, and Implementation Options	\$800,000(11) \$87,104(14)	\$687,103	Vanasse Hangen Brustlin, Inc.	6/27/2011	12/31/2014	Completed - Published as Report 119		
02-29	Guidance for Treatment of Airport Stormwater Containing Deicers	\$600,000(11)	\$500,000	Gresham, Smith and Partners	5/31/2011	9/30/2013	Completed - Published as Report 99		
02-30	Enhancing the Airport-Industry Database of Sustainable Practices	\$500,000(11) \$196,320(14) \$224,823(15)	\$846,320	CDM	7/18/2011	9/29/2017	Completed - Transferred to DFW Airport		
02-31	Guidelines for Ensuring Longevity in Airport Sound Insulation Programs	\$350,000(11)	\$349,980	Wyle Laboratories, Inc.	7/8/2011	9/15/2013	Completed - Published as Report 105		
02-32	Understanding Microbial Biofilms in Receiving Waters Impacted by Airport Deicing Activities	\$400,000(11)	\$300,000	CH2M Hill	7/20/2011	5/30/2014	Completed - Published as Report 115		
02-33	Guidance for Estimating Airport Construction Emissions	\$350,000(11)	\$349,980	Wyle Laboratories, Inc.	7/1/2011	9/30/2013	Completed - Published as Report 102		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-34	Best Practices Guidebook for Preparing Lead (Pb) Emission Inventories from Piston-Powered Aircraft	\$500,000(11)	\$500,000	Sierra Research, Inc.	6/3/2011	10/21/2014	Completed - Published as Report 133; and Web-Only Document 21		
02-35	Research Methods for Understanding Aircraft Noise Annoyance and Sleep Disturbance	\$600,000(11)	\$599,993	Harris Miller Miller & Hanson Inc.	9/20/2011	6/30/2014	Completed - Published as Web-Only Document 17		
02-36	Assessing Opportunities for Alternative Fuel Distribution Programs	\$500,000(11)	\$400,000	Metron Aviation	5/26/2011	12/6/2012	Completed - Published as Report 83		
02-37	Integrated Noise Model Accuracy for General Aviation Aircraft	\$400,000(11)	\$350,000	Harris Miller Miller & Hanson Inc.	6/13/2011	9/30/2014	Completed - Published as Web-Only Document 19		
02-38	Guidebook for Energy Facilities Compatibility with Airports and Airspace	\$450,000(12)	\$449,850	Harris Miller Miller & Hanson Inc.	5/2/2012	11/2/2013	Completed - Published as Report 108		
02-39	Applying Whole Effluent Toxicity Testing to Aircraft Deicing Runoff	\$500,000(12)	\$339,603	NewFields Government Services, LLC	10/5/2012	1/30/2015	Completed - Published as Report 134		
02-40	Climate Change Adaptation Planning: Risk Assessment for Airports	\$500,000(12)	\$491,923	Dewberry & Davis, LLC	11/20/2012	3/20/2015	Completed - Published as Report 147		
02-41	Estimating Takeoff Thrust Settings for Airport Emissions Inventories	\$450,000(12)	\$449,998	The Cadmus Group, LLC	9/1/2012	10/31/2014	Completed - Published as CD-161		
02-42	Understanding Air Quality and Public Health Studies Related to Airports	\$200,000(12)	\$199,675	Wyle Laboratories, Inc.	9/25/2012	2/28/2015	Completed - Published as Report 135		
02-43	Development of NOx Chemistry Module for EMDS/AEDT to Predict NO2 Concentrations	\$400,000(13)	\$399,577	KB Environmental Sciences	7/10/2013	1/31/2017	Completed - Published as Web-Only Document 30		
02-44	Recommended Community Noise Model Enhancements to Improve Prediction of Helicopter Activity Impacts	\$250,000(13)	\$249,811	Wyle Laboratories, Inc.	5/2/2013	9/30/2015	Completed - Published as Research Results Digest 24		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-45	Methodology to Improve EDMS/AEDT Quantification of Aircraft Taxi/Idle Emissions	\$250,000(13)	\$249,959	KB Environmental Sciences	7/8/2013	1/29/2016	Completed - Published as Web-Only Document 26		
02-46	Improving Ground Support Equipment (GSE) Operational Data for Airport Emissions Modeling	\$275,000(13)	\$275,000	KB Environmental Sciences	7/5/2013	12/15/2015	Completed - Published as Report 149		
02-47	Assessing Aircraft Noise Conditions Affecting Student Achievement--Case Studies	\$600,000(14) \$75,429(17)	\$599,939	Harris Miller Miller & Hanson, Inc.	5/22/2014	8/31/2017	Completed - Published as Web-Only Document 34		
02-48	Assessing Community Annoyance of Helicopter Noise	\$700,000(14)	\$699,778	Landrum & Brown, Inc.	6/3/2014	6/30/2017	Completed - Published as Research Report 181		
02-49	Addressing Significant Weather Impacts on Airports	\$550,000(14)	\$550,000	ICF Incorporated, LLC	5/22/2014	2/29/2016	Completed - Published as Report 160		
02-50	Deriving Benefits from Alternative Aircraft-Taxi Systems	\$300,000(14)	\$300,000	The Cadmus Group, LLC	7/15/2014	4/30/2016	Completed - Published as Report 158		
02-51	Evaluating Methods for Determining Interior Noise Levels Used in Airport Sound Insulation Programs	\$300,000(14)	\$299,678	CSDA Design Group	6/9/2014	10/30/2015	Completed - Published as Report 152		
02-52	Improving AEDT Noise Modeling of Hard, Soft, and Mixed Ground Surfaces	\$250,000(14)	\$249,603	Wyle Laboratories, Inc.	6/11/2014	4/28/2017	Completed - Published as Web-Only Document 32		
02-53	Interpreting Airport Water Monitoring Results	\$250,000(14)	\$250,000	Gresham, Smith and Partners	8/8/2014	6/30/2016	Completed - Published as Research Report 166		
02-54	Measuring and Understanding Emission Factors for General Aviation (GA) Aircraft	\$500,000(14)	\$499,971	Aerodyne Research, Inc.	5/20/2014	6/30/2016	Completed - Published as Research Report 164		
02-55	Enhanced AEDT Modeling of Aircraft Arrival and Departure Profiles	\$350,000(14)	\$349,921	ATAC Corporation	6/9/2014	3/30/2018	Completed - Published as Web doc 36		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-56	Developing a Business Case for Renewable Energy at Airports	\$300,000(14)	\$299,903	Harris Miller Miller & Hanson, Inc.	5/27/2014	10/26/2015	Completed - Published as Report 151		
02-57	Reducing the Impact of Lead Emissions at Airports	\$200,000(14)	\$199,971	Sierra Research, Inc.	7/28/2014	6/8/2016	Completed - Published as Research Report 162		
02-58	Dispersion Modeling Guidance for Airports Addressing Local Area Quality Health Concerns	\$400,000(14)	\$399,999	University of North Carolina	6/10/2014	7/31/2017	Completed - Published as Research Report 179		
02-59	Water Efficiency Management Strategies at Airports	\$450,000(14)	\$449,999	The Cadmus Group, LLC	6/4/2014	2/5/2016	Completed - Published as Report 154		
02-60	Use and Potential Impacts of AFFF Containing Per and Polyfluoralkyl Substances (PFASs) at Airports	\$480,000(15)	\$299,995	Dillon Consulting Limited	7/29/2015	10/28/2016	Completed - Published as Research Report 173		
02-61	Airport Stormwater Management: Electronic Resource Library	\$450,000(15) \$39,056 (16)	\$489,056	Mead & Hunt, Inc.	5/11/2015	7/31/2017	Completed - Published as WebResource 3		
02-62	Green Stormwater Infrastructure Strategies for Airports	\$350,000(15)	\$299,970	The Cadmus Group, LLC	4/30/2015	11/21/2016	Completed - Published as Research Report 174, Volumes 1 & 2		
02-63	Quantifying Airport Ground Access Vehicle Activity for Emissions Modeling	\$300,000(15)	\$299,874	KB Environmental Sciences	5/11/2015	4/28/2017	Completed - Published as Research Report 180		
02-64	Guidance for Usage of Permeable Pavement at Airports	\$200,000(15)	\$199,906	Applied Pavement Technology, Inc.	6/19/2015	3/31/2017	Completed Published as Research Report 178		
02-65	Tracking Alternative Jet Fuel	\$250,000(15)	\$249,961	Metron Aviation	6/19/2015	7/29/2016	Completed - Published as Research Report 165		
02-66	Commercial Spaceport Noise and Sonic Boom	\$600,000(15)	\$600,000	Wyle Laboratories, Inc.	7/29/2015	5/29/2017	Completed - Published as Research Report 183 and Web Doc 33		
02-67	Airport Air Quality Management Guidebook and Resource Library	\$400,000(15)	\$399,944	Booz Allen Hamilton	8/7/2015	10/16/2017	Completed - Published as Report 185 and WebResource 4		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-68	Strategies for Reducing Local Stormwater Utility Fees for Airports	\$350,000(16)	\$325,000	The Cadmus Group, LLC	9/21/2016	6/29/2018	Completed - Published as Research Report 193		
02-69	Integrating Airport Sustainability and the NEPA Process	\$400,000(16)	\$400,000	Vanasse Hangen Brustlin, Inc.	9/29/2016	1/31/2019	Completed - Publication Pending	J. Barrilleaux R. Solomon	J. Navarrete
02-70	Wetland Mitigation—A Guidebook for Airports	\$400,000(16)	\$399,996	The Smart Associates, Environmental Consultants, Inc.	9/29/2016	12/31/2018	Completed - Published as Research Report 198		
02-71	Guidebook and Decision Tool for Managing Airport Stormwater Containing Deicers	\$500,000(16)	\$400,000	Mead & Hunt, Inc.	8/19/2016	12/31/2018	Completed - Publication Pending	M. Lamprecht	J. Navarrete
02-72	Developing a Comprehensive Renewable Resources Strategy	\$300,000(16)	\$300,000	Cadmus Group, LLC	9/29/2016	8/31/2018	Completed - Publication Pending	J. MacFarlane J. Weller	M. Greenberger
02-73	Interactive Tool for Understanding NEPA at General Aviation Airports	\$250,000(16)	\$249,864	RS&H, Inc.	8/5/2016	3/31/2019	Completed - Publication Pending	K.R. Bassarab F. Smigelski	M. Greenberger
02-74	Using Existing Airport Management Systems to Manage Climate Risk	\$400,000(16)	\$399,971	ICF Incorporated	9/23/2016	10/31/2018	Completed - Published as Research Report 188		
02-75	Benefit-Cost Analyses Guidebook for Airport Stormwater	\$450,000(16)	\$325,000	The Cadmus Group, LLC	9/21/2016	12/31/2018	Completed - Publication Pending	M. Lamprecht	J. Navarrete
02-76	Optimizing the Use of Electric Pre-Conditioned Air (PCA) and Ground Power Systems at Airports	\$300,000(17)	\$300,000	Harris Miller Miller & Hanson Inc.	7/6/2017	3/8/2019	Completed - Publication Pending	M. Lamprecht J. Upadhyay	T. Schatz
02-77	Revolving Funds for Sustainability Projects at Airports	\$350,000(17)	\$350,000	Rocky Mountain Institute	6/6/2017	2/5/2019	Completed - Published as Research Report 205		
02-78	Climate Resilience and Benefit Cost Analysis--A Handbook for Airports	\$450,000(17)	\$450,000	GRA, Inc.	5/18/2017	1/14/2019	Completed - Published as Research Report 199		
02-79	AEDT Noise Model Improvements to Account for Terrain and Man-made Structures	\$500,000(17)	\$399,995	Blue Ridge Research Consulting	8/1/2017	8/30/2019	Completed - Publication Pending	J. Byers B. He	J. Navarrete

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-80	Quantifying Emissions Reductions at Airports from the Use of Alternative Jet Fuel	\$500,000(17)	\$499,927	Booz Allen Hamilton	5/15/2017	5/31/2019	Completed - Published as Web-Only Doc 41		J. Navarrete
02-81	Commercial Space Transportation Noise Measurements	\$600,000(17)	\$599,898	Blue Ridge Research and Consulting LLC	8/1/2017	12/31/2019	Research in Progress	J. Johnson N. Sizov S. Zee	J. Navarrete
02-82	Developing a Roadmap to to Achieve Zero-Emissions Status	\$350,000(18)	\$350,000	Cadmus Group, LLC	6/20/2018	10/19/2019	Research in Progress	T. Cuddy	M. Greenberger
02-83	Measuring Quality of Life in Communities Surrounding Airports	\$400,000(18)	\$399,840	Harris Miller, Miller, & Hanson Inc.	4/30/2018	12/31/2019	Research in Progress	K. Andrus J. Sweatt-Essick	J. Navarrete
02-84	Evaluating the Use of Spatially Precise Diurnal Population Data in Aviation Noise Studies	\$300,000(18)	\$299,993	Metron Aviation, Inc.	5/8/2018	1/7/2020	Research in Progress	B. He J. Byers	J. Navarrete
02-85	Commercial Space Vehicle Emissions Modeling	\$450,000(18)	\$449,973	Blue Ridge Research and Consulting LLC	6/1/2018	5/31/2020	Research in Progress	R. Halthore J. Johnson	J. Navarrete
02-86	Measuring the Impact of Temporary Flight Restriction on Airports	\$400,000(18)	\$400,000	Metron Aviation, Inc.	5/25/2018	11/30/2019	Research in Progress	K. Andrus K. Bassarab R. Didio	M. Greenberger
02-87	Determining Airfield Pavement Deice and Anti-Icer Contributions to Airport Stormwater	\$400,000(18)	\$350,000	LimnoTech Inc.	6/1/2018	5/31/2020	Research in Progress	M. Lamprecht J. Barrilleaux	J. Navarrete
02-88	Techniques for Modifying NextGen Flight Track Design to Reduce Noise Exposure and Annoyance	\$400,000	\$0				Cancelled		
02-89	Industry Survey—Benefits and Costs for Airport Noise and Operations Monitoring Systems	\$250,000	\$0				In Development		J. Navarrete

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03: 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	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, LLC	6/28/2007	5/31/2011	Completed - Published as Report 55		
03-06	Guidebook for Planning and Implementing Automated People Mover Systems at Airports	\$500,000(07)	\$395,341	Lea & Elliott	6/12/2007	3/30/2010	Completed - Published as Report 37		
03-07	Guidebook for Measuring Performance of Automated People Mover Systems at Airports	\$300,000(07)	\$300,000	Lea & Elliott	6/13/2007	1/31/2012	Completed - Published as Report 37A		
03-08	Passenger Air-Service Development Techniques	\$300,000(07)	\$300,000	InterVISTAS Consulting Group	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		
03-10	Innovative Approaches to Addressing Aviation Capacity Issues in Coastal Mega-Regions	\$300,000(07)	\$300,000	Resource Systems Group	2/6/2008	9/30/2009	Completed - Published as Report 31		
03-11	A Guidebook for the Preservation of Public-Use Airports	\$600,000(08)	\$522,430	L. Robert Kimball & Associates	6/23/2008	1/15/2011	Completed - Published as Report 44		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-12	Preparing Peak Period and Operational Profiles - Guidebook	\$350,000(08)	\$347,044	HNTB	8/13/2008	10/30/2012	Completed - Published as Report 82		
03-13	Understanding Airspace, Objects, and Their Effects on Airports	\$200,000(08)	\$199,938	Jacobs Consultancy	7/11/2008	4/30/2010	Completed - Published as Report 38		
03-14	Airport Passenger Conveyance System Planning Guidebook	\$300,000(08)	\$300,000	TransSolutions, LLC	8/26/2008	3/30/2012	Completed - Published as Report 67		
03-15	Impact of Jet Fuel Price Uncertainty on Airport Planning and Development	\$400,000(09)	\$399,970	GRA, Inc.	3/4/2009	2/28/2011	Completed - Published as Report 48		
03-16	Guidebook for Estimating the Economic Impact of Air Cargo at Airports	\$500,000(09)	\$499,860	Battelle Memorial Institute	6/5/2009	7/15/2014	Completed - Published as Web-Only Document 20		
03-17	Evaluating Airfield Capacity	\$525,000(09)	\$525,000	Leigh Fisher	6/29/2009	6/30/2012	Completed - Published as Report 79		
03-18	Operational and Business Continuity Planning for Prolonged Airport Disruptions	\$350,000(10)	\$348,292	Risk Solutions International, LLC	6/3/2010	6/28/2013	Completed - Published as Report 93		
03-19	Passenger Value of Time, Benefit-Cost Analysis, and Capital Investment Decisions	\$350,000(10)	\$349,944	Economic Development Research Group	7/26/2010	3/15/2015	Completed - Published as Web-Only Document 22		
03-20	Defining and Measuring Aircraft Delay and Airport Capacity Thresholds	\$250,000(10)	\$250,000	TransSolutions, LLC	8/30/2010	12/31/2013	Completed - Published as Report 104		
03-21	Developing and Maintaining Support for Your Airport Capacity Project	\$300,000(10)	\$299,980	Mead & Hunt	6/3/2010	3/29/2013	Completed - Published as Report 85		
03-22	Addressing Uncertainty About Future Airport Activity Levels in Airport Decision Making	\$350,000(10)	\$350,000	InterVISTAS Consulting Group	7/15/2010	7/31/2012	Completed - Published as Report 76		
03-23	Integrating Aviation and Passenger Rail Planning	\$400,000(10)	\$399,452	Resource Systems Group	7/29/2010	6/30/2014	Completed - Published as Report 118		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-24	Guidebook for Air Cargo Facility Planning and Development	\$400,000(11)	\$400,000	CDM/Wilbur Smith	7/17/2011	5/31/2015	Completed - Published as Report 143		
03-25	Impact of Regulatory Compliance Costs on Small Airports	\$300,000(11)	\$299,987	Unison Consulting, Inc.	6/3/2011	1/31/2013	Completed - Published as Report 90 and Web-Only Document 15		
03-26	Understanding Airline and Passenger Choice in Regions with Multi-Airport Regions	\$250,000(11)	\$250,000	InterVISTAS Consulting Group	8/4/2011	9/30/2013	Completed - Published as Report 98		
03-27	Evaluating Methods for Counting Aircraft Operations at Non-Towered Airports	\$400,000(11)	\$400,000	Woolpert	11/21/2011	11/28/2014	Completed - Published as Report 129		
03-28	The Role of U.S Airports in the National Economy	\$400,000(12)	\$399,984	Economic Development Research Group	7/17/2012	1/30/2015	Completed - Published as Report 132		
03-29	Effects of Airline Industry Changes on Small- and Non-Hub Airports	\$300,000(13)	\$299,972	GRA, Inc.	7/22/2013	4/30/2015	Completed - Published as Report 142		
03-30	Unmanned Aircraft Systems (UAS) at Airports: A Primer	\$150,000(13) \$50,000(14)	\$199,000	Futron Corporation	8/7/2013	6/19/2015	Completed - Published as Report 144		
03-31	Aligning Community Expectations with Airport Roles	\$500,000(14)	\$500,000	Mead & Hunt	6/16/2014	10/31/2016	Completed - Published as WebResource 1		
03-32	Guidance for Preparing and Using Airport Design Day Flight Schedules	\$400,000(14)	\$349,966	HNTB Corporation	7/17/2014	6/17/2016	Completed - Published as Research Report 163		
03-33	NextGen - Airport Planning and Development	\$500,000(14)	\$500,000	Leigh Fisher	7/11/2014	9/30/2016	Completed - Published as Report 150, Volume 5		
03-34	NextGen - Understanding the Airport's Role in Performance-Based Navigation (PBN)	\$500,000(14)	\$500,000	Saab Sensis Corporation	6/9/2014	2/8/2016	Completed - Published as Report 150, Volume 1		
03-35	Improving Airport Services for International Customers	\$600,000(14)	\$600,000	Landrum & Brown, Inc.	6/6/2014	6/10/2016	Completed - Published as Research Report 161		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-36	Using Disaggregated Socioeconomic Data in Air Passenger Demand Studies	\$500,000(15)	\$499,747	GRA Incorporated	6/19/2015	6/28/2018	Completed - Published as Research Report 194		
03-37	Using GIS for Collaborative Land Use Compatibility Near Airports	\$350,000(15)	\$350,000	Grafton Technologies	8/26/2015	8/31/2018	Completed - Published as Research Report 200		
03-38	Understanding FAA Grant Assurance Obligations	\$150,000(15)	\$150,000	Unison Consulting, Inc.	7/28/2015	5/2/2017	Completed - Published as Research Report 184		
03-39	Generating Revenue from Commercial Development On or Adjacent to Airports	\$375,000(15)	\$375,000	Mead & Hunt, Inc.	5/11/2015	1/31/2017	Completed - Published as Research Report 176		
03-40	Air Demand in a Dynamic Competitive Context with the Automobile	\$500,000(16)	\$499,816	Resource Systems Group, Inc.	7/14/2016	2/15/2019	Completed - Publication Pending	D. Anderson K. Warden	L. Goldstein
03-41	Common Performance Metrics for Airport Infrastructure and Operational Planning	\$400,000(16)	\$399,981	Booz Allen Hamilton	9/23/2016	3/22/2018	Completed - Published as Research Report 190		
03-42	Airports and UAS	\$1,000,000(17)	\$999,957	Booz Allen Hamilton	2/3/2017	6/1/2019	Completed - Publication Pending	M. Dipilato J. Raymond	T. Schatz
03-43	Integrating Airport Ground Access and Metropolitan Surface Transportation Planning Efforts	\$500,000(17)	\$326,173	WSP	4/27/2017	3/29/2019	Completed - Publication Pending	M. Lawrence D. Rinsler	J. Navarrete
03-44	Best Practices in Building Air Service Through Incentive Programs	\$400,000(17)	\$324,863	GRA, Inc.	4/11/2017	7/31/2019	Completed - Publication Pending	G. Mahns	J. Navarrete
03-45	Collecting and Sharing of Operational and Safety Data	\$400,000(17)	\$400,000	Booz Allen Hamilton	5/17/2017	2/28/2020	Research in Progress	P. Davenport S. Gardner	M. Greenberger
03-46	Implementing Privatization: Guidance for Airport Decision-Makers	\$350,000(18)	\$349,985	WSP	4/24/2018	10/30/2019	Research in Progress	R. Fiertz	T. Schatz

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-47	Rethinking Airport Parking Facilities to Protect and Enhance Non-Aeronautical Revenue	\$450,000 (18)	\$450,000	Intervistas	4/18/2018	10/17/2019	Research in Progress	L. McDonald	T. Schatz
03-48	Advanced Ground Vehicle Technologies (AGVT) for Airside Operations	\$250,000 (18)	\$250,000	Purdue University	7/9/2018	10/8/2019	Research in Progress	M. Woods	M. Greenberger
03-49	Effective Collaboration to Plan and Respond to Communicable Disease Threats	\$600,000 (19)	\$600,000	Eastern Research Group, Inc	3/15/2019	1/14/2021	Research in Progress		M. Greenberger
03-50	An Airport-Centric Study of the Urban Air Mobility Market	\$350,000 (19)	\$350,000	Ascension Group	7/3/2019	10/2/2020	Research in Progress	N. Sizou M. Washington	J. Navarrete
03-51	Electric Aircraft on the Horizon-an Airport Planning Perspective	\$450,000 (19)	\$449,820	WSP USA, Inc.	6/14/2019	12/13/2020	Research in Progress	C. Nutting	J. Navarrete
03-52	Airport Common Use Program Development Guidebook	\$400,000 (20)					In Development		T. Schatz
03-53	Development of Baggage Handling System Decision Making Framework Based on Total Cost of Ownership	\$340,000 (20)	\$0				In Development		J. Navarrete
03-54	General Aviation Airports Runway Length Analysis	\$300,000 (20)	\$0				In Development		J. Navarrete
03-55	Airport Biometrics—A Primer	\$250,000 (20)	\$0				In Development		T. Schatz
03-56	Airside Planning, Design, and Operations: Electronic Resource Library	\$300,000 (20)	\$0				In Development		T. Schatz
03-57	Understanding Coming Improvements and Transformations in Wireless Connectivity: Concepts for Smarter Airports	\$400,000 (20)	\$0				In Development		T. Schatz

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-58	Measuring the Effect of Changes in Air Service Connectivity on Regional Economic Development	\$500,000 (20)	\$0				In Development		J. Navarrete
04: Safety									
04-01	Analysis of Aircraft Overruns and Undershoots for Runway Safety Areas	\$250,000(06)	\$249,986	Applied Research Associates	9/19/2006	1/31/2008	Completed - Published as Report 3		
04-02	Lightning-Warning Systems for Use by Airports	\$200,000(06)	\$199,937	MDA Federal, Inc.	11/7/2006	11/7/2008	Completed - Published as Report 8		
04-03	Guidebook for Approach Light System Hazard Assessment and Mitigation	\$300,000(07)	\$300,000	Virginia Polytechnic Institute and State University	10/3/2007	2/2/2009	Completed - Published as Research Results Digest 6 and Web-Only Document 4		
04-04	Simulation-Based Training and Exercise of Civil Aviation Emergency Response Personnel	\$500,000(07)	\$499,093	Applied Research Associates	9/12/2007	12/31/2011	Completed - Results to 04-04A		
04-04A	Evaluating the Airport Emergency Response Operations Simulation (AEROS) Tool	\$300,000(12)	\$290,000	Futron Corporation	6/18/2013	9/17/2014	Terminated		
04-04B1	Emergency Management Training for Airport Critical Incidents	\$125,000(15)	\$25,000	Engineering and Computer Simulations, Inc.	3/30/2015	8/31/2015	Completed		
04-04B2	Emergency Management Training for Airport Critical Incidents	\$125,000(15)	\$219,000	Emergency Preparedness Solutions, LLC	6/8/2016	3/30/2018	Completed - Published as Research Report 187		
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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
04-07	Airport Apron Management and Control Programs	\$300,000(08)	\$300,000	Ricondo & Associates	5/8/2009	8/30/2011	Completed - Published as Report 62		
04-07A	Use of Towbarless Tractors at Airports - Best Practices	\$300,000(08)	\$38,795	Ricondo & Associates	4/20/2009	8/30/2011	Completed - Published as Research Results Digest 15		
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, Inc.	7/6/2010	3/1/2012	Completed - Published as Report 73		
04-11	Guidebook on Integrating GIS in Emergency Management at Airports	\$350,000(11)	\$274,949	Barich, Inc.	7/12/2011	2/28/2013	Completed - Published as Report 88		
04-12	Integrating Web-Based Emergency Management Collaboration Tools into Airport Operations - A Primer	\$400,000(11)	\$400,000	Innovative Emergency Management	7/15/2011	7/31/2013	Completed - Published as Report 94		
04-13	Integrating Community Emergency Response Teams at Airports (A-CERTs)	\$400,000(11)	\$400,000	Innovative Emergency Management, Inc.	7/26/2011	7/26/2013	Completed - Published as Report 95		
04-14	Development of a Runway Veer-Off Location Distribution Risk Assessment Model and Reporting Template	\$200,000(12)	\$200,000	Airport Safety Management Consultants	6/6/2012	12/5/2013	Completed - Published as Report 107		
04-15	Airport Terminal Incident Response Planning	\$325,000(12)	\$325,000	Innovative Emergency Management, Inc	7/10/2012	4/2/2014	Completed - Published as Report 112		
04-16	Safety Risk Management for Airports	\$300,000(13)	\$299,992	Futron Corporation	6/18/2013	11/14/2014	Completed - Published as Report 131		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
04-17	Applying an SMS Approach to Wildlife Hazard Management	\$250,000(13)	\$250,000	BASH Incorporated	1/17/2014	6/15/2015	Completed - Published as Report 145		
04-18	Runway Protection Zone (RPZ) Risk Assessment Tool	\$400,000(14)	\$400,000	Applied Research Associates	6/4/2014	7/11/2016	Completed - Published as Research Report 168		
04-19	Airport Emergency Planning Template: NIMS - Incident Command System Compliance	\$300,000(15)	\$300,000	FTI Consulting, Inc.	12/3/2015	8/31/2018	Completed - See 04-19A	M. Tonnaciff	J. Navarrete
04-19A	Airport Emergency Planning Template Tool Enhancements	\$190,000 (19)	\$190,000	Ankura Consulting, Inc.	3/15/2019	8/21/2021	Research in Progress	M. Tonnaciff J. Showalter	J. Navarrete
04-20	Design Considerations for Airport EOCs	\$400,000(16)	\$249,900	Faith Group, LLC	8/23/2016	3/30/2018	Completed - Published as Research Report 189		
04-21	Emergency Communication Models for Persons with Disabilities and Non-English Speakers	\$400,000(17)	\$400,000	Innovative Emergency Management	5/18/2017	11/18/2018	Completed- Published as Research Report 201		
04-22	Evaluating Compatibility Zoning at General Aviation Airports	\$350,000(17)	\$350,000	Mead & Hunt	5/23/2017	1/31/2019	Completed - Publication Pending	H. Cyrus M. Hovan	M. Greenberger
04-23	Guidebook for Creating and Maintaining Social Media for Emergency Management at Airports	\$350,000(18)	\$350,000	Barich Inc	3/12/2018	2/15/2020	Research in Progress	J. Showalter M. Tonnaciff	M. Greenberger
04-24	Airport Contributions to the Study, Investigation, and Interdiction of Human Trafficking	\$500,000	\$0				In Development		J. Navarrete
05: 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		
05-02	Guidebook on Best Practices for Airport Cybersecurity	\$350,000(13)	\$350,000	Grafton Technologies, Inc.	8/21/2013	3/31/2015	Completed - Published as Report 140		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
06: 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	10/30/2012	Completed - Published as Report 75		
06-03	Establishing a Coordinated Local Family Assistance Program for Airports	\$300,000(15)	\$300,000	Tetra Tech, Inc.	5/8/2015	10/14/2016	Completed - Published as Research Report 171		
06-04	Identifying and Evaluating Airport Workforce Requirements	\$250,000(15) \$330,000(17)	\$580,760	ICF Incorporated	6/4/2015	4/15/2018	Completed - Published as Research Report 186		
06-05	Guidance for Diversity in Airport Businesses Contracting and Workforce Programs	\$500,000(18)	\$500,000	The Cadmus Group	5/25/2018	9/24/2019	Completed - Publication Pending	N. Kumar	T. Schatz
06-06	Cultivating Talent in the Airport Environment	\$250,000(19)	\$250,000	ICF Incorporated	5/24/2019	8/23/2020	Research in Progress	R. Didio	T. Schatz
06-07	Enhancing Academic Programs to Cultivate Future Airport Industry Professionals	\$300,000 (19)	\$300,000	The Ohio State University	6/1/2019	8/31/2020	Research in Progress	T. Cuddy	T. Schatz
06-08	Human Factors in Airport Operations	\$400,000 (19)	\$0	Futron Aviation	7/19/2019	3/21/2021	In Development		M. Greenberger
07: 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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
07-04	Airport Passenger Terminal Planning and Design: Spreadsheet Models and User's Guide	\$400,000(07)	\$400,000	Landrum & Brown	6/6/2007	10/31/2009	Completed - Published as Report 25, Volume 2		
07-05	Airport Passenger Terminal Planning and Design: Guidebook	\$400,000(07)	\$400,000	Landrum & Brown	6/28/2007	10/31/2009	Completed - Published as Report 25, Volume 1		
07-06	Airport Signage and Wayfinding Information Guidelines	\$250,000(08)	\$250,000	Gresham, Smith and Partners	8/21/2008	3/1/2011	Completed - Published as Report 52		
07-07	Evaluating Terminal Renewal Versus Replacement Options	\$400,000(10)	\$400,000	Ricondo & Associates	8/16/2010	3/15/2012	Completed - Published as Report 68		
07-08	Improving Terminal Design to Increase Revenue Generation and Customer Satisfaction	\$500,000(11)	\$496,888	Landrum & Brown	6/3/2011	11/30/2013	Completed - Published as Report 109		
07-09	Apron Planning and Design Guidebook	\$250,000(12)	\$250,000	Ricondo & Associates	6/15/2012	7/31/2013	Completed - Published as Report 96		
07-10	General Aviation Facility Planning	\$300,000(12)	\$300,000	Delta Airport Consultants	5/17/2012	2/28/2014	Completed - Published as Report 113		
07-11	Airport Escalators and Moving Walkways - Cost-Savings and Energy Reduction Technologies	\$250,000(12)	\$249,947	Project Performance Corp.	9/18/2012	7/31/2014	Completed - Published as Report 117		
07-12	Guidebook for Airport Terminal Restroom Planning and Design	\$250,000(12)	\$249,986	Architectural Alliance	3/25/2013	9/30/2014	Completed - Published as Report 130		
07-13	Enhancing Airport Wayfinding for the Aging Travelers and Persons with Disabilities	\$450,000(14)	\$450,000	Gresham Smith & Partners	6/9/2014	2/17/2017	Completed - Published as Research Report 177		
07-14	Improving Intelligibility of Airport Terminal Public-Address Systems	\$350,000(15)	\$350,000	Wilson Ihrig & Associates	7/7/2015	1/7/2017	Completed - Published as Research Report 175		
07-15	Airport Passenger Terminal Design: Electronic Resources Library	\$300,000(15)	\$300,000	Intermodal Logistics Consulting, Inc.	7/7/2015	5/15/2017	Completed - Published as WebResource 2		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
07-15A	Airport Passenger Terminal Design Library-Updates to ACRP WebResource 2	\$250,000(19)	\$250,000	Intermodal Logistics Consulting, Inc.	5/24/2019	5/23/2022	Research in Progress	W. Reinhardt	T. Schatz
07-16	Airport Terminal Ancillary Service Spaces and Restroom Planning and Design	\$350,000(18)	\$349,637	Alliance	2/28/2018	5/21/2020	Research in Progress	W. Reinhardt M. Sedarous	J. Navarrete
07-17	Update ACRP Report 40: Airport Curbside and Terminal Area Roadway Operations	\$500,000 (20)	\$0				In Development		
07-18	Develop Airfield Design Guidelines for Unmanned Aerial Vehicles	\$400,000 (20)	\$0				In Development		T. Schatz
08: Construction									
08-01	Sustainable Airport Construction Practices	\$150,000(09)	\$150,000	Ricondo & Associates	6/1/2009	6/22/2010	Completed - Published as Report 42		
08-02	Guidebook for Integrating Collaborative Partnering into Traditional Airport Practices	\$350,000(17)	\$350,000	Michigan State University	5/11/2017	1/31/2019	Completed - Published as Research Report 196		
08-03	Construction Safety and Phasing Plans	\$250,000(19)	\$250,000	Garver	8/21/2019	11/20/2020	Research in Progress		M. Greenberger
09: 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	11/6/2006	4/30/2010	Completed - Published as Report 39		
09-02	Best Practices Manual for Working in or Near Airport Movement Areas	\$500,000(11)	\$325,000	Ricondo & Associates	8/31/2011	11/30/2013	Completed - Published as Report 101		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
09-03	Airport Parking Garage Lighting Solutions	\$300,000(12)	\$300,000	Virginia Polytechnic Institute and State University	6/4/2012	10/31/2014	Completed - Published as Report 124		
09-04	Optimizing Airport Building Operations and Maintenance Through Retrocommissioning: A Whole Systems Approach	\$250,000(12)	\$249,835	Sebesta Blomberg & Associates	12/14/2012	12/31/2014	Completed - Published as Report 139		
09-05	Guidance on Successful Computer Maintenance Management Systems (CMMS) Selection and Practices	\$300,000(12)	\$300,000	Ross & Barrunzini	7/12/2012	10/17/2014	Completed - Published as Web-Only Document 23		
09-06	Evaluating Impacts of Sustainability Practices on Airport Operations and Maintenance	\$300,000(12)	\$312,000	Booz Allen Hamilton	9/27/2012	4/25/2014	Completed - Published as Report 110		
09-07	Airport Maintenance Roles in Planning, Design, Construction, Commissioning, and Activation	\$200,000(12)	\$200,000	Michigan State University	11/13/2012	10/31/2014	Completed		
09-08	Balancing Airport Stormwater and Bird Hazard Management	\$250,000(12)	\$249,209	Environmental Resource Solutions	10/1/2012	8/29/2014	Completed - Published as Report 125		
09-09	LED Airfield Lighting System Operation and Maintenance	\$340,000(13)	\$340,000	Burns Engineering	8/9/2013	9/30/2015	Completed - Published as Report 148		
09-10	Benchmarking and Profiling Airport Terminal End Uses	\$400,000(13)	\$399,331	Texas A&M University	9/16/2013	9/30/2015	Completed - Published as CRP CD 178		
09-11	Pavement Maintenance Guidelines for General Aviation Airport Management	\$350,000(14)	\$350,000	Texas A&M University Transportation Institute	6/16/2014	5/13/2016	Completed - Published as Report 159		
09-12	NextGen - Leveraging NextGen Spatial Data to Benefit Airports	\$200,000(14)	\$200,000	Woolpert, Inc.	6/13/2014	6/3/2016	Completed - Published as Report 150, Volume 4		
09-13	Considering Life Cycle Costs in Airport Asset Procurement	\$350,000(15)	\$349,897	CH2M Hill	5/19/2015	11/18/2016	Completed - Published as Research Report 172		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
09-14	Advanced Computer Maintenance Management System (CMMS) Integration for Airports	\$375,000(16)	\$374,950	CH2M Hill	6/9/2016	9/8/2017	Completed - Published as Web-Only Document 23		
09-15	Building Information Modeling (BIM) Beyond Design	\$750,000(17)	\$400,000	CAD Concepts	5/12/2017	6/30/2019	Completed - Publication Pending	D. Rinsler	M. Greenberger
09-16	Best Practices for Airport Obstruction Management	\$300,000(17)	\$299,981	Hanson Professional Services	2/15/2017	12/31/2018	Completed- Published as Research Report 195 and WebResource 7		
09-17	Collecting, Applying, and Maintaining Pavement Condition Data at Airports	\$250,000(17)	\$250,000	Applied Pavement Technology, Inc.	4/17/2017	12/31/2018	Completed- Published as Research Report 203		
09-18	Rapid Airfield Concrete Pavement Slab Replacement and Patching	\$400,000(19)	\$400,000	Nichols Consulting Engineers	4/24/2019	7/23/2020	In Development		M. Greenberger
09-19	Airfield Pavement Markings- Effective Removal and Temporary Application Techniques	\$450,000(19)	\$450,000	Texas A&M Transportation Institute	6/1/2019	11/30/2020	Research in Progress	J. Carlini	T. Schatz
09-20	Consequences of Delayed Maintenance of Airport Assets	\$300,000	\$0				In Development		
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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
10-05	Reference Guide on Understanding Common Use at Airports	\$500,000(08)	\$399,981	Barich, Inc.	5/30/2008	9/29/2009	Completed - Published as Report 30		
10-06	Handbook to Assess the Impacts of Constrained Parking at Airports	\$400,000(08)	\$398,563	Ricondo & Associates	6/16/2008	3/8/2010	Completed - Published as Report 34		
10-07	Current Status and Future Implications of Passenger Self-Tagging	\$350,000(09)	\$350,000	Barich, Inc.	6/16/2009	7/30/2010	Completed - Published as Report 41 and Web-Only Document 10		
10-08	Applying Intelligent Transportation Systems to Improve Airport Traveler Access Information	\$350,000(09)	\$350,000	Gresham, Smith and Partners	4/13/2009	4/30/2012	Completed - Published as Report 70		
10-09	Elimination or Reduction of Baggage Recheck for Arriving International Passengers	\$400,000(09)	\$400,000	InterVISTAS Consulting Group	7/22/2009	10/31/2011	Completed - Published as Report 61		
10-10	Guidebook for Airport Irregular Operations (IROPS) Contingency Planning	\$600,000(10)	\$599,976	Mead & Hunt	8/26/2010	2/24/2012	Completed - Published as Report 65		
10-10A	Guidebook for Airport Irregular Operations (IROPS) Contingency Planning - Training Sessions	\$300,000(12)	\$151,053	Mead & Hunt	2/24/2012	1/31/2013	Completed - Training Sessions Held		
10-11	Guidebook to Creating a Collaborative Environment Between Airport Operations and Maintenance	\$500,000(11)	\$399,840	Amadeus Consulting	7/27/2011	4/30/2013	Completed - Published as Report 92		
10-12	Guidebook for Through-the-Fence (TTF) Operations	\$350,000(12)	\$350,000	Mead & Hunt	7/30/2012	2/28/2014	Completed - Published as Report 114		
10-13	A Guidebook for Integrating NIMS for Personnel and Resources at Airports	\$200,000(12)	\$200,000	System Planning Corp.	5/23/2012	8/24/2013	Completed - Published as Report 103		
10-14	Being Prepared for IROPS: A Business Planning and Decision-Making Approach	\$300,000(12)	\$299,395	MCR Federal, LLC	8/2/2012	11/4/2013	Completed - Published as Report 106		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
10-15	Guidebook for Airport Winter Operations	\$400,000(12)	\$400,000	Gresham, Smith and Partners	6/25/2012	8/29/2014	Completed - Published as Report 123		
10-16	Commercial Ground Transportation at Airports: Best Practices	\$300,000(13)	\$300,000	Leigh Fisher	7/10/2013	5/8/2015	Completed - Published as Report 146 and Web-Only Document 25		
10-17	Implementing Integrated Self-Service at Airports	\$450,000(13)	\$449,980	Barich, Inc.	8/5/2013	2/4/2015	Completed - Published as Report 136		
10-18	Preventative Maintenance at General Aviation Airports: Primer and Guidebook	\$400,000(13)	\$299,496	Delta Airport Consultants	9/18/2013	2/18/2015	Completed - Published as Report 138		
10-19	Guidebook for Advancing Collaborative Decision Making (CDM) at Airports	\$300,000(13)	\$299,783	Mosaic ATM, Inc.	9/3/2013	12/3/2014	Completed - Published as Report 137		
10-20	Guidance for Planning, Design, and Operations of Airport Communications	\$300,000(13)	\$251,700	TranSecure, Inc.	8/9/2013	1/15/2015	Completed - Published as Research Report 182		
10-20A	Guidance for Planning, Design, and Operations of Airport Communications	\$98,325(13)	\$98,325	Burns Engineering, Inc.	3/9/2016	4/1/2017	Completed - Published as Research Report 182		
10-21	Complying with Federal Regulations: An Integrated Approach	\$350,000(14)	\$350,000	Aviation Management Consulting	6/27/2014	12/31/2015	Completed - Published as Report 156		
10-22	Improving Stakeholder Engagement in Aircraft Accident Planning	\$500,000(14)	\$499,988	Futron Corporation	4/18/2014	1/15/2017	Completed - Published as Web-Only Document 31		
10-23	IROPS Stakeholder Communication and Coordination	\$400,000(14)	\$399,930	Metron Aviation, Inc.	6/9/2014	12/8/2015	Completed - Published as Report 153		
10-24	Guidance for Developing Ramp Control Facilities	\$400,000(15)	\$399,997	Metron Aviation, Inc.	4/24/2015	7/23/2016	Completed - Published as Research Report 167		
10-25	Public-Notification Programs at Airports	\$200,000(15)	\$194,600	SSI, Inc.	7/1/2015	8/31/2016	Completed - Published as Research Report 170		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
10-26	Airport Microgrid Implementation Toolkit	\$450,000(18)	\$450,000	Rocky Mountain Institute	6/22/2018	1/31/2020	Research in Progress	J. Wolfers-Lawrence T. Cuddy	T. Schatz
10-27	Using Collaborative Decision Making to Enhance the Management of Adverse Conditions, IROPS, and Crises	\$300,000(19)	\$300,000	WSP	7/8/2019	7/7/2020	Research in Progress		T. Schatz
10-28	Guide for Integrating Crisis Management and Business Continuity at Airports	\$500,000 (20)	\$0				In Development		
10-29	Development of Predictive Model for Jet Blast Exposure	\$450,000 (20)	\$0				In Development		J. Navarrete
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) \$50,000(13) \$200,000(14) \$350,000(15) \$200,000(16) \$75,000(17) \$240,000(18) \$240,000(19)		Transportation Research Board	2/1/2006		Continuing Project: See 11-01 Table	D. Fuller F. SanMartin	T. Schatz

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) \$40,000(12) \$216,000(13) \$123,576(14) \$250,000(15) \$149,500(17) \$230,000(18) \$300,000(19)	Various	2/1/2006	Continuing Project: See 11-02 Table	L. Miller	M. Greenberger		
11-03	Synthesis of Information Related to Airport Practices	\$500,000(06) \$700,000(07) \$500,000(08) \$500,000(09) \$900,000(10) \$700,000(11) \$1,270,000(12) \$1,160,000(13) \$1,053,000(14) \$1,170,000(15) \$1,220,000(16) \$1,220,000(17) \$1,220,000(18) \$ 495,000(19)	Transportation Research Board	2/1/2006	Continuing Project: See 11-03 Table 3, 4, 8, 12, 13, 17, 18, 22, and 23	P. Magnotta	T. Schatz		
11-04	Graduate Research Award Program on Public-Sector Aviation Issues	\$100,000(08) \$100,000(09) \$100,000(10) \$140,000(11) \$140,000(12) \$140,000(13) \$140,000(14) \$568,779(15) \$907,580(16) \$507,409(17) \$632,627(18) \$595,000(19)	Transportation Research Board (08-13) Old Dominion University Research Foundation (14)		Continuing Project: Papers Published as TRB TRR 2184, 2206, 2266, 2325, 2400, and 2471; Status Reports Published as Research Results Digests 14, 19, and 25.	R. Samis	L. Goldstein		
11-04A	Airport Research Competition for Universities	included in 11-04 (15) (16) (17) (18) (19)	Old Dominion University Research Foundation	5/9/2014	12/31/2020	Research in Progress	R. Samis	L. Goldstein	

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
11-05	Implementation of ACRP Strategic Plan	\$600,000(10) \$148,947(11) \$200,000(12) \$600,000(13) \$600,000(14) \$650,000(15) \$1,250,000(16) \$600,000(17) \$900,000(18) \$900,000(19)	Various	Various			Continuing Project	J. Showalter	M. Greenberger
11-06	Evaluating ACRP Processes	\$250,000(10)	Transportation Research Board				Completed - Results to AOC		
11-07	ACRP Problem Statement Development	\$500,000(13) \$300,000(14)	Transportation Research Board				Completed - Published as Research Results Digest 20		
11-08	ACRP Insight Events - Discussions on Critical Issues in the Airport Industry	\$600,000(16)	Transportation Research Board				Continuing Project		M. Greenberger
11-08(16-01)	Forum on Challenges to Implementing Successful Land Use Strategies at Airports	\$100,000(16)	The Cadmus Group, LLC	11/9/2016	9/30/2018		Completed - Published as CPW 24		
11-08(16-02)	Forum on Economic and Social Sustainability at Airports	\$100,000(16)	The Cadmus Group, LLC	11/9/2016	9/30/2018		Completed - Published as CPW 23		
11-08(16-03)	Forum on Airport Roles in Reducing Communicable Diseases Transmission	\$100,000(16)	Eastern Research Group, Inc.	12/13/2016	12/11/2019		Completed - Published Conference Proceedings 55		
11-08(16-04)	Public Private Partnerships - What Are the Lessons Learned?	\$100,000(16)	Eastern Research Group	10/13/2017	12/11/2019		Completed - Publication Pending		T. Schatz
11-08(19-01)	Blockchain Technology and Airports	\$120,000	Eastern Research Group	3/21/2019	12/31/2020		Research in Progress		T. Schatz

Legal Aspects of Airport Programs

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

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
02-05	Practices to Achieve Airport-Compatible Land Uses and Minimize Obstructions in Navigable Airspace	Jocelyn Waite	August 2010	Completed - Published as Legal Research Digest 14	
03-01	Fair Disclosure and Airport Impact Statements in Real Estate Transfers	Larry Thomas, Esq.	July 2009	Completed - Published as Legal Research Digest 12	
03-02	Compilation of State Aviation Authorizing Legislation	Jodi Howick, Esq.	August 2009	Completed - Published as Legal Research Digest 15	
03-03	Survey of Minimum Standards: Commercial Aeronautical Activities at Airports	Kaplan Kirsch Rockwell, LLP	July 2009	Completed - Published as Legal Research Digest 11	
03-04	Airport Rates and Charges: Law and Policy	Spiegel & McDiarmid LLP	November 2009	Completed - Incorporated into 4-05	
03-05	State and Federal Regulations That May Affect Initiatives to Reduce Airports' GHG Emissions	Kaplan Kirsch Rockwell, LLP	November 2009	Completed - Published as Legal Research Digest 17	
03-06	An Index and Digest of Decisions: Compilation of Airport Law Resources	Kaplan Kirsch Rockwell, LLP	December 2009	Completed - Published as Legal Research Digest 13 (CRP-CD-108)	
04-01	Airport Responsibility for Wildlife Management	Broad and Cassell	April 2011	Completed - Published as Legal Research Digest 20	
04-02	Legal Issues Related to Developing Safety Management Systems and Safety Risk Management at U.S. Airports	Foley & Lardner	December 2011	Completed - Published as Legal Research Digest 19	
04-03	Analysis of Federal Laws, Regulations, Case Law, and Survey of Existing Airport NPDES Permits Regarding Tenant-Operator Responsibilities Under NPDES and Storm Water Management BMP's Under Owner/Airport's Operating Permits	CDM	September 2012	Completed - Published as Legal Research Digest 25	
04-04	Buy America Requirements for Federally Funded Airports	Conner Gwyn Schenk	March 2011	Completed - Published as Legal Research Digest 18	
04-05	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters Through December 2012	Spiegel & McDiarmid LLP	February 2012	Completed - Published as Legal Research Digest 21 (CRP-CD-141)	

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
04-06	The Role of the Airport Sponsor in Airport Planning and Environmental Reviews of Proposed Development Projects Under the National Environmental Policy Act (NEPA) and State Mini-NEPA Laws	Conner Gwyn Schenk	March 2012	Completed - Published as Legal Research Digest 22	
04-07	Procurement of Airport Development and Planning Contracts	Broad and Cassell	April 2011	Completed - Published as Legal Research Digest 16	
05-01	Regulations Affecting the Exercise of First Amendment Activities at Airports	Jodi Howick, Esq.	August 2013	Completed - Published as Legal Research Digest 26	
05-02	Sovereign Immunity for Public Airport Operators	Seay Law International, PA	November 2013	Completed - Published as Legal Research Digest 24	
05-03	The Fourth Amendment and Airports	Jodi Howick	August 2014	Completed - Published as Legal Research Digest 27	
05-04	A Guide for Compliance with Grant Agreement Obligations to Provide Reasonable Access to an AIP-Funded Public Use General Aviation Airport	Kaplan Kirsch Rockwell, LLP	July 2013	Completed - Published as Legal Research Digest 23	
06-01	Operational and Legal Issues with Fuel Farms	Kaplan Kirsch Rockwell, LLP	September 2014	Completed - Published as Legal Research Digest 28	
06-02	Contract Risk Management for Airport Agreements	Broad & Cassell	May 2015	Completed - Published as Legal Research Digest 30	
07-01	Impact of Firearms Laws on Airports	The Thomas Law Firm	March 2015	Completed - Published as Legal Research Digest 29	
07-02	Preemption of Worker Retention and Labor Peace Agreements at Airports	Kaplan Kirsch Rockwell, LLP	October 2015	Completed - Published as Legal Research Digest 31	
08-01	Legal Issues Related to the Implementation and Operation of Safety Management Systems for Airports	Kaplan Kirsch Rockwell, LLP	June 2018	Completed - Published as Legal Research Digest 36	
08-02	Legal Risks of Operating a Public Airport	Jodi Howick	May 2016	Completed - Published as Legal Research Digest 33	
08-03	Evolving Law on Airport Implications by Unmanned Aerial Systems Operations	Ravich Law Firm, P.A.	May 2016	Completed - Published as Legal Research Digest 32	

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
08-04	Legal Consideration in the Funding and Development of Multi-Modal Facilities	Timothy Karaskiewicz	May 2016	Completed - Published as Legal Research Digest 35	
09-01	Airport Public Health Preparedness & Response: Legal Rights, Powers & Duties	University of Arizona	February 2017	Completed - Published as Legal Research Digest 34	
09-02	Legal Issues Relating to Airports Promoting Competition	Kaplan Kirsch Rockwell, LLP	February 2017	Completed- Published as Legal Research Digest 37	
09-03	Permitted Airport Involvement in Economic Development Efforts	William J. Estes	April 2017	Completed	M. Greenberger
10-01	Update of Compilation of FAA/DOT Airport Legal Determinations	Ravich Law Firm, PA	April 2018	Research in Progress	M. Greenberger
10-02	Legal Issues Relating to Large Scale Airport Construction Projects	University of Nevada, Las Vegas	October 2017	Completed - Publication Pending	M. Greenberger
10-03	Legal Issues Relating to Airport Commercial Contracts	Leftwich	June 2018	Research in Progress	T. Schatz
10-04	Updated Survey of Laws and Regulations Applicable to Airport Commercial Ground Transportation	Carlos Sun	November 2018	Research in Progress	T. Schatz
11-01	Permissible Uses of Airport Revenue and Property	Kaplan Kirsch, Rockwell, LLP	September 2018	Research in Progress	T. Schatz
11-02	Accommodation of Federal Agencies Rights and Obligations of Host Airports			Terminated	
11-03	Analysis of Laws, Regulations, and Case Laws Regarding Airport Customer Facility Charges			In Development	T. Schatz
12-01	Legal Implications of Data Collection at Airports			In Development	T. Schatz
12-02	Developing Lease Terms for New General Aviation Development			In Development	T. Schatz

Quick Response for Special Needs

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
Task 01	Model for Improving Energy Use in U.S. Airport Facilities	Texas A&M University Energy Systems Laboratory	10/13/2006	7/31/2007	Completed - Published as Research Results Digest 2	
Task 02	Ground Access to Major Airports by Public Transportation	Matthew Coogan	8/16/2006	9/30/2007	Completed - Published as Report 4	
Task 03	Evaluation and Mitigation of Aircraft Slide Evacuation Injuries	George Washington University	10/9/2006	12/15/2007	Completed - Published as Report 2	
Task 04	Airport Safety Management Systems for Airports: Overview	MITRE Corporation	1/2/2007	11/2/2007	Completed - Published as Report 1, Volume 1	
Task 05	Quarantine Facilities for Arriving Air Travelers: Identification of Planning Needs and Costs	System Planning Corp.	3/28/2007	11/3/2007	Completed - Published as Report 5	
Task 06	Interagency-Industry Collaboration on Pandemic Planning for Aviation: A Workshop	Transportation Research Board	2/15/2007	9/15/2007	Completed - Workshop Held - Published as TRB Conference Proceedings 41	
Task 07	Current and Emerging Issues Facing the Airport Industry	Transportation Research Board	8/1/2007	1/31/2009	Completed - Published as Research Results Digest 5	
Task 08	Enhanced Modeling of Aircraft Taxiway Noise - Scoping	Wyle Laboratories, Inc.	2/14/2008	8/31/2009	Completed - Published as Web-Only Document 9, Volume 1	
Task 09	Visibility of Airfield Signs and Markings from Aircraft and Ground Vehicles				Canceled	
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, A4A	
Task 11	A Summary of How Proposed Firefighting Standards Would Impact Airports	GRA, Inc.	12/23/2008	6/15/2009	Completed - Published as Web-Only Document 7 and Research Results Digest 7	
Task 12	Ramp Incident Data from Selected Large and Medium Hub Airports	Ricondo & Associates	4/17/2009	8/30/2011	Completed - Results to FAA	
Task 13	Research Symposium on the Transmission of Disease in Airports and on Aircraft	Transportation Research Board			Completed - Symposium Held - Published as TRB Conference Proceedings 47	

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
Task 14	Helping Airports Understand the Payment Card Industry Data Protection Standard (PCI DSS)	Barich, Inc.	10/15/2009	5/15/2010	Completed - Published as Research Results Digest 11	
Task 15	Aviation Industry Familiarization and Training for Part-Time Airport Policymakers	Delta Airport Consultants	1/19/2010	11/18/2010	Completed - Published as Report 58	
Task 16	Analysis, Scoping, and Prioritizing ACRP Deicing Problem Statements				Canceled	
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	1/2/2010	8/30/2011	Completed - Published as Report 57	
Task 19	Symposium on Air Travel and the Spread of Disease				Canceled	
Task 20	Developing Problem Statements on Information Technology Issues at Airports	Transportation Research Board	12/1/2011	12/1/2011	Completed - Workshop Held - Results to AOC	
Task 21	Innovative Airport Response to Threatened and Endangered Species	Environmental Science Associates	4/22/2013	8/29/2014	Completed - Published as Report 122	
Task 22	Best Practices for General Aviation Aircraft Fuel-Tank Sampling	Hagerty Environmental LLC	8/14/2013	4/13/2014	Completed - Published as Research Results Digest 21	
Task 23	Alternative IT Delivery Methods and Best Practices for Small Airports	Barich, Inc.	8/5/2013	7/31/2014	Completed - Published as Report 128	
Task 24	ACRP Electronic Product Options	Grafton Technologies, Inc.	7/27/2015	1/26/2016	Completed - Final deliverables available for download	
Task 25	Developing Environmental Problem Statements	Harris Miller Miller & Hanson, Inc.	9/12/2014	4/23/2015	Completed	
Task 26	AOC Strategic Planning	Ricondo & Associates	9/12/2014	8/24/2015	Completed	
Task 27	Update to Models for Risk Assessment of Runway Safety Areas	Airport Safety Management Consultants, LLC	11/1/2016	3/15/2017	Completed - Published on website	

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
Task 28	Recovering International Recyclables from In-Flight Service	GeneraCycle, Inc.	6/16/2017	2/28/2019	Completed - Publication Pending	J. Navarrete
Task 29	ACRP Research Roadmap on Airport Operations and Maintenance	Harris Miller Miller & Hanson Inc.	7/17/2017	7/16/2018	Completed - Published Roadmap	
Task 30	ACRP Research Roadmap on Airport Design & Construction	Harris Miller Miller & Hanson Inc.	7/6/2017	12/25/2019	Completed - Publication Pending	J. Navarrete
Task 31	ACRP Oversight Committee Workshop on Emerging Issues		1/1/2018	9/30/2018	Completed - Publication Pending	M. Greenberger
Task 32	ACRP Research Roadmap on Environmental Issues	Harris Miller Miller & Hanson Inc.	5/9/2018	11/29/2019	Research in Progress	J. Navarrete
Task 33	ACRP Research Roadmap on Policy and Planning Issues	Steer Davies & Gleeve	2/12/2017	3/31/2019	Completed - Publication Pending	T. Schatz
Task 34	Business Process Review for TRB's Cooperative Research Program				Completed	
Task 35	Research Roadmap on Administration and Human Resources Issues	ICF Incorporated	4/2/2019	4/1/2020	Research in Progress	J. Navarrete
Task 36	Research Roadmap on Safety Issues	Futron Aviation	5/1/2019	4/30/2020	Research in Progress	T. Schatz
Task 37	Periodic Report on Transformative Technology for Airports	Barich, Inc.			Research in Progress	M. Greenberger

Synthesis of Information Related to Airport Practices

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
01: 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	KRAMER aerotek, Inc.	March 2009	Completed - Published as Synthesis 19		
S01-03	Airport Insurance Coverage and Risk Management Practices	Ron Rakich & Assoc.	April 2010	Completed - Published as Synthesis 30		
S01-04	Airline and Airline-Airport Consortiums to Manage Terminals and Equipment	AvAirPros	April 2010	Completed - Published as Synthesis 31		
S01-05	Issues with Airport Organization and Reorganization	Kim Kenville Consulting	February 2012	Completed - Published as Synthesis 40		
S01-06	How Airports Measure Customer Service Performance	KRAMER aerotek, Inc.	February 2012	Completed - Published as Synthesis 48		
S01-07	Conducting Airport Peer Reviews	CTC & Associates	February 2012	Completed - Published as Synthesis 46		
S01-08	Understanding the Value of Social Media at Airports for Customer Engagement	Leigh Fisher	March 2013	Completed - Published as Synthesis 56		
S01-09	Practices to Develop Effective Stakeholder Relationships at Smaller Airports	Delta Airport Consultants, Inc.	May 2014	Completed - Published as Synthesis 65		
S01-10	Strategies for Maintaining Air Service	Sixel Consulting Group, Inc.	May 2014	Completed - Published as Synthesis 68		
S01-11	Planning for Operational Recovery at Small Airports	North Dakota State University	April 2015	Completed - Published as Synthesis 78		
S01-12	Airport Participation in Oil & Gas Development	KRAMER aerotek, Inc.	May 2016	Completed - Published as Synthesis 87		
S01-13	Food and Beverage and Retail Operators: The Costs of Doing Business at Airports	Unison Consulting, Inc.	June 2016	Completed - Published as Synthesis 81		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S01-14	Funding Industrial Aviation Development	Smith-Woolwine Associates, Inc.	May 2016	Completed - Published as Synthesis 79		
S01-15	Airport Operator Options for Delivery of FBO Services	KRAMER aerotek, Inc.	June 2016	Completed - Published as Synthesis 86		
S01-16	Microgrids and Their Application at Airports	Arup North America	June 2017	Completed - Published as Synthesis 91		
S01-17	Attracting Investment at General Aviation Airports Through Public-Private Partnerships and Leasing	Texas A&M Transportation Institute	May 2017	Completed - Publication Pending	K. Brockman	T. Helms
S01-18	Value Benefits, and Limitations of Qualifications Based Selection (QBS) for Airport Project Delivery	Gransberg & Associates	June 2018	Completed - Publication Pending	M. Rottinghaus	G. Staba
S01-19	Data Acquisition and Protocols for Risk Management	Dubuque-Snyder Aviation Consulting LLP	June 2018	Completed - Publication Pending	S. Gardner	T. Helms
S01-20	Compilation of Data on the State of FBOs	Kramer Aerotek, Inc.	June 2018	Research in Progress	C. Carson L. Luarte	G. Staba
S01-21	Benefits of Arts Programs to Airports and Stakeholders	Tim Karaskiewicz	June 2019	Research in Progress	T. Cuddy	G. Staba
S01-22	Last Mile in General Aviation - Courtesy Vehicles and Other Forms of Ground Transportation	AirportAdmin, LLC	June 2019	Research in Progress	W. Reinhardt	G. Staba
02: 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 North America	March 2007	Completed - Published as Synthesis 10		
S02-03	Compilation of Noise Programs in Areas Outside DNL 65	Harris Miller Miller, & Hanson, Inc.	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		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S02-05	Funding Opportunities for Airport Environmental Projects	Unison Consulting, Inc.	April 2010	Completed - Published as Synthesis 24		
S02-06	Airport Climate Adaptation and Resilience	AEA Group	April 2011	Completed - Published as Synthesis 33		
S02-07	Integrating Environmental Sustainability into Airport Contracts	Leigh Fisher	March 2012	Completed - Published as Synthesis 42		
S02-08	Environmental Assessment of Air and High-Speed Rail Corridors	Arizona State University	March 2012	Completed - Published as Synthesis 43		
S02-09	Environmental Management System Development Process	First Environment, Inc.	March 2012	Completed - Published as Synthesis 44		
S02-10	Outcomes of Green Initiatives: Large Airport Experience	First Environment, Inc.	March 2013	Completed - Published as Synthesis 53		
S02-11	Lessons Learned from Airport Sustainability Plans	A Ripple Effect, PLC	May 2014	Completed - Published as Synthesis 66		
S02-12	Airport Sustainability Practices - Drivers and Outcomes of Green Initiatives for Small and General Aviation Airports	Dprather Airport Solutions, LLC	May 2015	Completed - Published as Synthesis 69		
S02-13	Helicopter Noise Information for Airport Noise Managers	Landrum & Brown	May 2015	Completed - Published as Synthesis 76		
S02-14	Airport Sustainability Practices	Haley & Aldrich, Inc.	March 2015	Completed - Published as Synthesis 77		
S02-15	Airport Experience with Alternative Fuels for Ground Transport	The Cadmus Group, LLC	June 2016	Completed - Published as Synthesis 85		
S02-16	Airport Experience with Implementing Notifications Required by the Aircraft Drinking Water Rule	The Cadmus Group, LLC	April 2016	Completed - Published as Synthesis 88		
S02-17	Sustainability's Role in Airport Growth	The Cadmus Group, LLC	June 2017	Completed - Published as Synthesis 93		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S02-18	Airport Waste Management and Recycling Practices	Mead & Hunt	June 2017	Completed - Published as Synthesis 92		
S02-19	Clean Vehicles, Fuels, and Practices for Airport Private Ground Transportation Providers	University of South Florida	June 2017	Completed - Published as Synthesis 89		
S02-20	Lessons Learned from Airport Greenhouse Gas Reduction Efforts	Barrett Energy Resources Group	June 2018	Completed - Publication Pending	P. Magnotta	G. Staba
S02-21	Practices in Airport Renewable Energy Projects	Barrett Energy Resources Group	June 2019	Research in Progress	P. Magnotta M. Otey	G. Staba
03: 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	Economic Development Research Group	April 2008	Completed - Published as Synthesis 13		
S03-06	Strategies for Reuse of Underutilized or Vacant Airport Facilities	KRAMER aerotek, Inc.	April 2010	Completed - Published as Synthesis 25		
S03-07	Integrating Airport GIS Data with Public Agency GIS	Grafton Technologies	March 2013	Completed - Published as Synthesis 59		
S03-08	Backcountry Airstrip Preservation	T-O Engineering, Inc.	March 2013	Completed - Published as Synthesis 55		
S03-09	Cell Phone Lots at Airports	KRAMER aerotek, Inc.	May 2014	Completed - Published as Synthesis 62		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S03-10	Practices in Preserving and Developing Public-Use Seaplane Bases	Stephen Quilty	May 2014	Completed - Published as Synthesis 61		
S03-11	Transportation Network Companies: Challenges and Opportunities for Airport Operators	InterVISTAS, Inc.	June 2016	Completed - Published as Synthesis 84		
S03-12	Response Considerations for Communicable Diseases on Arriving Flights	Smith-Woolwine Associates, Inc.	June 2016	Completed - Published as Synthesis 83		
S03-13	Estimating Truck Trip Generation for Airport Air Cargo Activity	Resource Systems Group, Inc.	May 2016	Completed - Published as Synthesis 80		
S03-14	Simulation of Airside and Landside Operations in Airport Planning	Resource Systems Group, Inc.	May 2017	Completed - Publication Pending	W. Reinhardt	T. Helms
S03-15	How Airports Plan for Changing Aircraft Capacity- the Effects of Upgauging	DY Consultants	June 2017	Completed - Publication Pending	K. Duffy	T. Helms
04: 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		
S04-05	Bird Repellant Techniques on Airports	Mississippi State University	April 2010	Completed - Published as Synthesis 23		
S04-06	Current Airport Inspection Practices Regarding FOD	Prather Airport Solutions	April 2010	Completed - Published as Synthesis 26		
S04-07	Lessons Learned from Airport Safety Management Systems Pilot Study	Landry Consultants, LLC	April 2011	Completed - Published as Synthesis 37		
S04-08	Managing Aerial Firefighting Activities on Airports	Critical Path International	May 2011	Completed - Published as Synthesis 32		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S04-09	Model Mutual Aid Agreements for Airports	Smith-Woolwine Associates, Inc.	March 2012	Completed - Published as Synthesis 45		
S04-10	Safety Reporting Systems at Airports	Landry Consultants, LLC	February 2013	Completed - Published as Synthesis 58		
S04-11	Effective Cooperation Among Airports and Local and Regional Emergency Management Agencies for Disaster Preparedness and Response	Smith-Woolwine Associates, Inc.	February 2013	Completed - Published as Synthesis 50		
S04-12	Airport Emergency Post-Event Recovery Practices	Smith-Woolwine Associates, Inc.	June 2014	Completed - Published as Synthesis 60		
S04-13	Combining Mixed Use Flight Operations Safely at Airports	SMQ Airport Services	May 2015	Completed - Published as Synthesis 74		
S04-14	Airport Safety Risk Management Panel Activities and Outcomes	Airport Safety Management Consultants, LLC	April 2015	Completed - Published as Synthesis 71		
S04-15	Flight Operations Advisories at Non-Towered Airports	Dprather Aviation Solutions, LLC	May 2015	Completed - Published as Synthesis 75		
S04-16	Emergency Communications Planning for Airports	Smith-Woolwine Associates, Inc.	May 2015	Completed - Published as Synthesis 73		
S04-17	Tabletop and Full-Scale Emergency Exercises for General Aviation, Non-Hub, and Small Airports	Smith-Woolwine Associates, Inc.	May 2015	Completed - Published as Synthesis 72		
S04-18	Uses of Social Media to Inform Operational Response and Recovery During an Airport Emergency	Smith-Woolwine Associates, Inc.	June 2016	Completed - Published as Synthesis 82		
S04-19	Incorporating ADA and Functional Needs in Emergency Exercises	Smith-Woolwine Associates, Inc.	May 2017	Completed - Published as Synthesis 90		
S04-20	Airport Incident Reporting Practices	AMQ Airport Services		Completed - Published as Synthesis 95		
S04-21	Models for Law Enforcement at Airports	Hickory Ridge Group LLC	February 2019	Research in Progress		T. Helms

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S04-22	Airport Surface Weather Observation Options for General Aviation Airports	Delta Airport Consultants, Inc.	June 2018	Completed - Publication Pending	M.Hovan	T. Helms
S04-23	Airport Emergency Working Groups	Smith-Woolwing Associates, Inc.	July 2018	Completed - Published as Synthesis 99		
S04-24	Practices in Airport Emergency Plans	Tidal Basin Government Consulting	June 2019	Research in Progress	M. Tonnaciff	T. Zwahlen
S04-25	Escalator Falls	Katherine Hunter Zaworski	June 2019	Research in Progress	R. Didio	G. Staba
05: Security						
S05-01	Intelligent Transportation System (ITS) Sensor Technology for General Aviation			Canceled		
06: 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 and Training Procedures	Prather Airport Solutions	May 2010	Completed - Published as Synthesis 27		
S06-03	Exploring Airport Employee Commuting and Parking Strategies	DMR Consulting	May 2011	Completed - Published as Synthesis 36		
S06-04	Adapting New Maintenance Hires to the Airport Environment	SMQ Airport Services	March 2012	Completed - Published as Synthesis 49		
S06-05	Promoting Aviation Career Education in High Schools and Community Colleges	DPrather Aviation Solutions LLC	May 2018	Completed - Publication Pending	W.Reinhardt	T. Helms
S06-06	Airport Workforce Programs Supporting Employee Well-being	ICF Incorporated	June 2019	Research in Progress		G. Staba
07: Design						
S07-01	Impacts of Aging Travelers on Airports	Corgan Associates, Inc.	February 2013	Completed - Published as Synthesis 51		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S07-02	Communication Strategies for Airport Passenger Access and Mobility	Indiana University	June 2018	Completed - Publication Pending	V. Balgobin M. DiPietro	G. Staba
08: Construction						
S08-01	Airport Terminal Facility Activation Techniques	Arup	March 2009	Completed - Published as Synthesis 20		
09: 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	Completed - Published as Synthesis 34		
S09-04	Issues with Use of Airfield LED Light Fixtures	Rensselaer Polytechnic Institute	May 2011	Completed - Published as Synthesis 35		
S09-05	Repairing and Maintaining Airport Parking Structures While in Use	Walker Parking Consultants	February 2012	Completed - Published as Synthesis 47		
S09-06	Airside Snow Removal Practices for Small Airports with Limited Budgets	Stephan Quilty	June 2014	Completed - Published as Synthesis 67		
S09-07	Building Information Modeling for Airports	Arbor Services	May 2015	Completed - Published as Synthesis 70		
S09-08	Approaches to Mitigate Alkali Silica Reaction (ASR) Effects at Airports	Applied Pavement Technologies	June 2019	Completed - Publication Pending	G. Kline	T. Helms
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		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S 10-03	Impact of Airport Deicing Products on Aircraft and Airfield Infrastructure	Montana State University, Western Transportation Institute	March 2007	Completed - Published as Synthesis 6		
S 10-04	Airport Energy Efficiency and Cost Reduction	Miller Dunwiddie Architecture, Inc.	March 2009	Completed - Published as Synthesis 21		
S 10-05	Ramp Safety Practices	Landry Consultants, LLC	May 2010	Completed - Published as Synthesis 29		
S 10-06	Investigating Safety Impacts of Energy Technologies on Airports and Aviation	Harris Miller Miller & Hanson, Inc.	May 2010	Completed - Published as Synthesis 28		
S 10-07	Expediting Aircraft Recovery at Airports	Prather Airport Solutions	May 2011	Completed - Published as Synthesis 38		
S 10-08	Conducting Aeronautical Special Events at Airports	Prather Airport Solutions	February 2012	Completed - Published as Synthesis 41		
S 10-09	Airport Wildlife Population Management	Savannah River Ecological Laboratory	February 2012	Completed - Published as Synthesis 39		
S 10-10	Habitat Management to Deter Wildlife at Airports	Mississippi State University	March 2013	Completed - Published as Synthesis 52		
S 10-11	Electric Vehicle Charging Stations at Airport Parking Facilities	Leigh Fisher	March 2013	Completed - Published as Synthesis 54		
S 10-12	Airport Response to Special Events	KRAMER aerotek, Inc.	February 2013	Completed - Published as Synthesis 57		
S 10-13	Overview of Airport Fueling System Operations	Stephan Quilty	May 2014	Completed - Published as Synthesis 63		
S 10-14	Issues Related to Accommodating Animals Traveling through Airports	Smith-Woolwine Associates, Inc.	May 2014	Completed - Published as Synthesis 64		
S 10-15	Evaluating Airport Performance with the Integration of UAS	Dprather Aviation Solutions LLC	June 2018	Completed - Publication Pending	J.Patterson	T. Helms

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S 10-16	Airport Operations Training at Small Airports	Dprather Aviation Solutions, LLC	June 2019	Research in Progress	D. Williams	T. Zwahlen



Notice to Readers

Information about project status is available on the ACRP website at www.TRB.org/ACRP. Detailed project write-ups will be available only on the ACRP website.

How to Order ACRP Publications from TRB

ACRP publications are listed in Appendix A. To order ACRP publications visit our online store: www.trb.org. Secured purchases can be with made with VISA, Mastercard, or American Express. To order by phone please call (202) 334-3213.

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