

ACRP | AIRPORT COOPERATIVE RESEARCH PROGRAM 2022

ANNUAL REPORT OF PROGRESS



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AIRPORT COOPERATIVE RESEARCH PROGRAM

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

The need for ACRP was identified in *TRB Special Report 272: Airport Research Needs: Cooperative Solutions* in 2003, based on a study sponsored by the Federal Aviation Administration (FAA). 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 of Philadelphia International Airport (PHL) taken by David Rosenblum. Courtesy of PHL.

NATIONAL ACADEMIES

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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.nationalacademies.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 the AOC Chair

One of the pillars of ACRP is our dedication to cooperation and collaboration with industry stakeholders. The program depends on this participation throughout all stages of our process, including the submission of research ideas, volunteering to serve as technical experts, conducting the research, and spreading the word about our over 500 available publications.

We take pride in the partnerships we have cultivated as part of the ACRP Oversight Committee (AOC) to guide the program, including Airlines for America (A4A), the American Association of Airport Executives (AAAE), the Airports Consultants Council (ACC), the Airports Council International—North America (ACI-NA), the U.S. Environmental Protection Agency (EPA), the National Association of State Aviation Officials (NASAO), and the Federal Aviation Administration (FAA).

Furthering our ideal of cooperation and collaboration, this year ACRP signed a letter of intent with the Airport Minority Advisory Council (AMAC); we committed to supporting each other's missions with specific actions and activities. By promoting ACRP, the AMAC offers its members the opportunity to participate on research panels, submit proposals, and attend Insight Events or free webinars, in addition to exposure to myriad ACRP publications. One of our first activities was an event we held in September, Expanding DBE Participation in Aviation, for professionals who may not be familiar with ACRP. Topics included an ACRP overview, the lifecycle of an ACRP project, what to expect as a contractor, how to submit a successful proposal, and the opportunity to hear from those who have served as prime contractors and those who have served as subcontractors. Through participant surveys, we know that individuals benefit from ACRP through professional development, networking, giving back to the industry, and being on the cutting edge of industry issues.

Along with expanding and strengthening our relationships with our industry partners, we also recognize that we need to make our engagement with our volunteers as smooth and effective as possible. One way we've accomplished this is through our problem statement submission process, which continues to evolve. We are now using an electronic survey to collect problem statement ideas. Of course, collaboration on the problem statements is essential regardless of the collection method to this point, the volunteers of the Aviation Standing Committees are ready to step up and assist anyone wanting feedback.

As always, the FAA continues to provide tremendous support to ACRP, and we are thankful to them for their sponsorship.

— Rhonda K. Hamm-Niebruegge

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Introduction

The past few years have brought a great deal of upheaval to the airport industry. Years of needing to adapt to unprecedented air travel disruptions and health crises have led to lasting change. In 2022, industry practitioners continued to acclimate to an evolving landscape through collaboration and the cross-cultural sharing of ideas, information, best practices, and new technologies.

The Airport Cooperative Research Program (ACRP) has played an integral role in fostering collaboration within the airport industry since its establishment in 2005. ACRP relies on participation from industry stakeholders to identify research ideas, serve as technical experts, and help conduct relevant research that has real-world impacts at airports around the globe. In 2022, ACRP continued to expand and strengthen its partnerships with practitioners to conduct and disseminate essential research to the airport community.

ACRP provides high-quality, industry-driven research to address day-to-day challenges in the airport industry in the form of research reports, case studies, Insight Events, webinars, and more. ACRP's *2022 Annual Report of Progress* showcases the program's activities and accomplishments and how they encourage collaboration and innovation to solve the most pressing issues facing the aviation industry today.

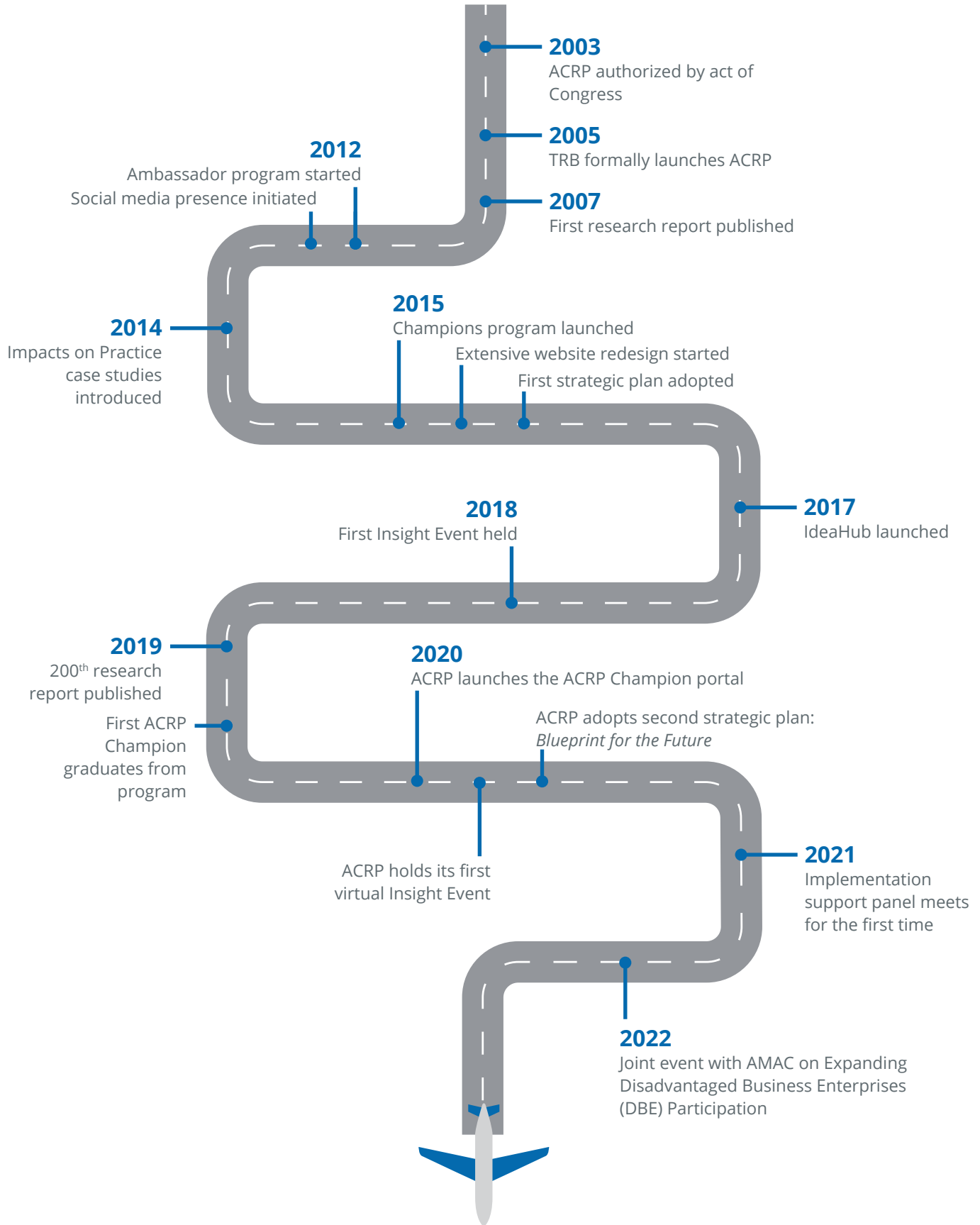
WHAT IS ACRP?

ACRP is an applied research program managed by the Transportation Research Board 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. ACRP addresses and helps solve the airport industry's most pressing issues today.

KEY MILESTONES IN ACRP HISTORY

Since its inception in 2005, ACRP has grown and evolved to meet changing industry needs and leverage the latest technologies. As information-sharing channels have become increasingly digital, ACRP has continued to innovate tactics to disseminate critical information and cultivate industry-wide practitioner engagement.

ACRP Milestones





Meet the ACRP Staff



Marci A. Greenberger, ACRP Manager

Marci A. Greenberger is the ACRP Manager and has worked with the Transportation Research Board (TRB) of the National Academies since 2008. Prior to becoming ACRP's 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 management positions at airports in Rhode Island, Indiana, and California. Marci is an Accredited Airport Executive through 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.

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. His 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. He holds a BA in Geography and a certificate in Cartography from George Mason University.

Theresia Schatz



Theresia Schatz retired from ACRP in 2022 after 13 years of service as an SPO managing research projects. Before that, 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. Theresia is an Accredited Airport Executive through AAEE 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.



Matthew Griffin

Matthew Griffin joined ACRP as an SPO in October 2019. He previously served as the Director of Regulatory Affairs and Education at the Airport Consultants Council (ACC). Matthew also served as the Senior Manager for Policy and Regulatory Affairs at the Airports Council International-North America and spent time with the Capital Region Airport Authority in Lansing, Michigan. Before joining the staff, he served on various ACRP panels. Matthew holds a BS in Aviation Management from Purdue University as well as a private pilot's certificate.

Jordan Christensen



Jordan Christensen joined ACRP staff as an SPO in July 2021. She previously worked at the Boise Airport as the Airport Security Manager where she was responsible for developing and managing the airport emergency operations program, airport security program, and credentialing and training, and co-managed airport operations. Jordan also previously served on the Board of Directors for National Safe Skies Alliance. She has a Certified Member designation from AAAP, graduated with a BA in Aviation Management from Westminster College, and recently completed her MBA at Boise State University.



Edward McDonald

Edward McDonald joined ACRP as an SPO in June 2022. He has over 25 years of experience in aviation and aerospace leadership from multi-modal transportation organizations in the Great Lakes, Pacific Northwest, and Southeastern regions. Ed brings with him expertise in cognitive and behavioral neuroscience, organizational resilience, enterprise risk, safety management, business continuity, disaster preparedness, environmental sustainability governance, human resources management, diversity-equity-inclusion accessibility and social justice, and strategic planning. In addition, he holds an undergraduate degree in Business Administration and an MS in Business Psychology, and is currently a doctoral candidate at Franklin University in Organizational Leadership.

Sarah Kosling



Sarah Kosling joined ACRP in 2020 as an Associate Program Officer/Business Analyst. She has a background in international development, specializing in the areas of strategic foresight and data analysis. Previously, she served in the Peace Corps in Nepal as a food security volunteer and is passionate about sustainable urban development in the Global South. She holds a BS in Biology from Denison University.



Brittany Summerlin-Azeez

Brittany Summerlin-Azeez serves as ACRP's Program Coordinator and joined the program in 2017. She manages the day-to-day administrative and logistical aspects of meetings and correspondence between SPOs, committee members, and sponsors. She also assists with the Ambassador and Champion programs. Brittany has a background in human resources and sales. She holds a BS in English and Political Science from Howard University and has a green belt certificate from Lean Six Sigma.

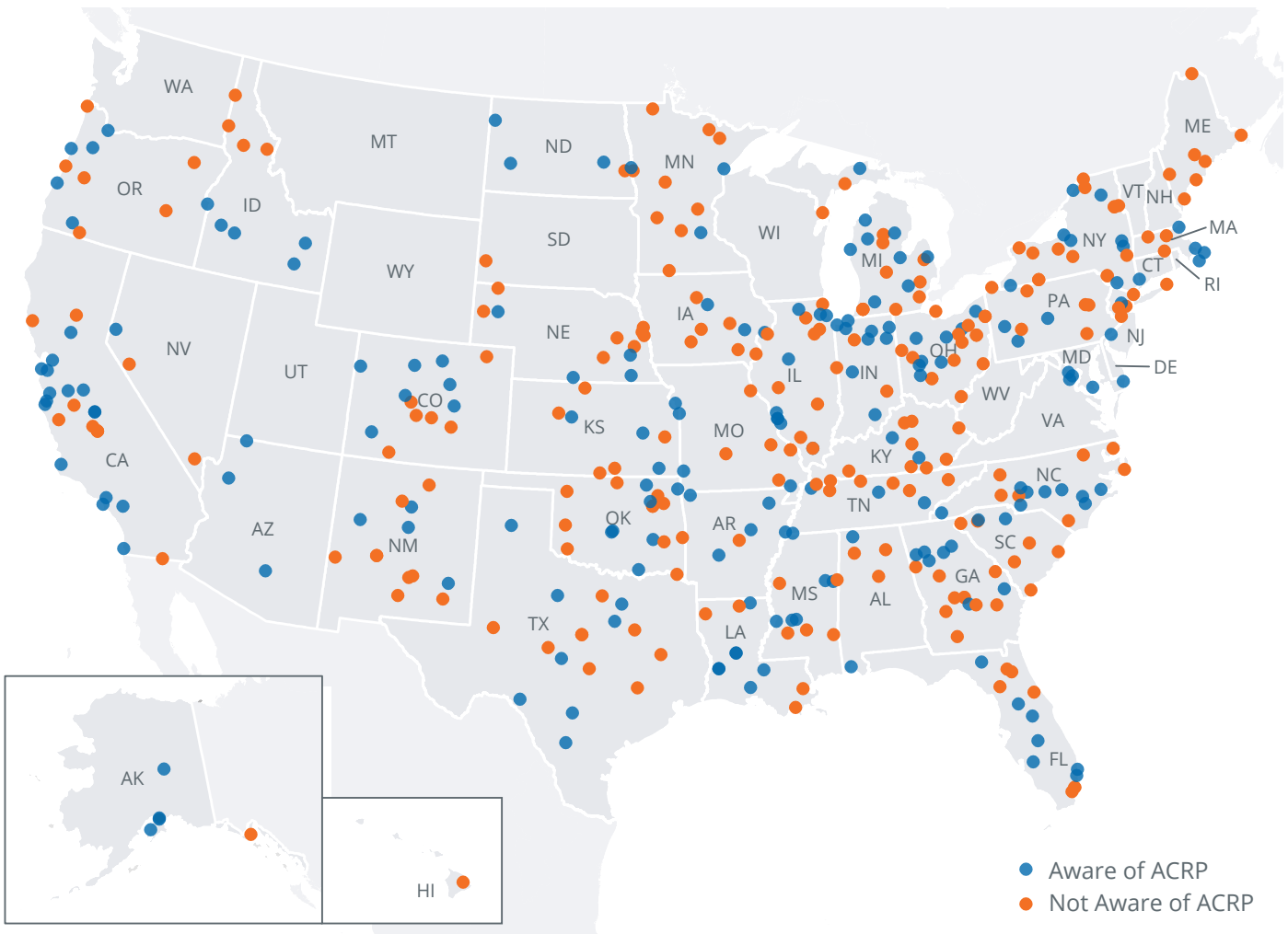


Measuring ACRP's Impact

In 2021, ACRP sought to gain a deeper understanding of how its products are being used by practitioners and how its research is benefiting the airport industry. ACRP developed a survey to measure this impact and reached out to airport practitioners directly to see how they utilize ACRP research. ACRP also surveyed those who downloaded products, and project participants such as panel members and research teams. The program created an Impact Report with the survey results to shed light on important characteristics and behaviors of program users.

The survey results provided important demographic information about ACRP research. The survey found that typical users of research products work at an airport, at a consultancy group, or in academia, and hold positions in executive management. Eighty percent of survey respondents were practitioners at general aviation (GA) airports. Of all the practitioners who responded, 45 percent were aware of ACRP prior to receiving the survey, and 55 percent were not aware of ACRP. The percent not aware indicates an opportunity for ACRP to further its outreach to these smaller GA airports to increase awareness of the program and the many resources ACRP has to offer. Survey respondents indicated that the greatest barrier to implementing ACRP research is lack of funding, hangar development issues, and compliance with regulations. Overall, respondents found that ACRP provides value by producing research that is useful and relevant and addresses challenges airports may not have the resources to solve on their own. ACRP will continue to measure impact regularly to maintain program relevance, remain connected with the airport community, and track industry trends.





Airport awareness of ACRP. The map shows airports aware of ACRP (blue) and airports not aware of ACRP (orange). Not all National Plan of Integrated Airport Systems (NPIAS) airports were included in the survey.



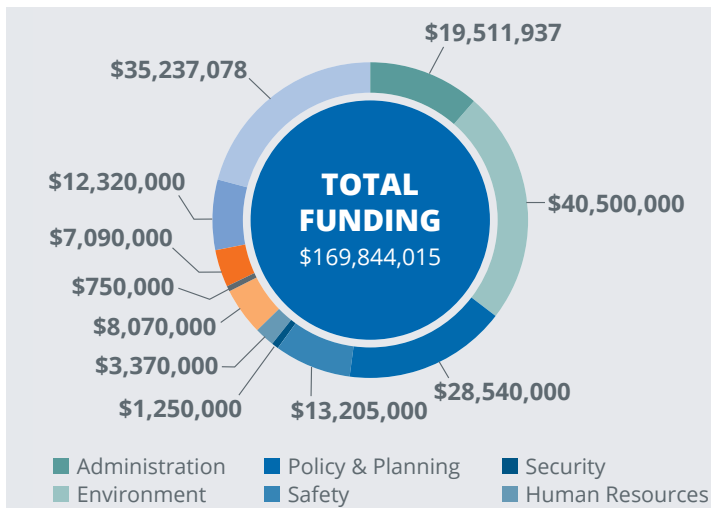
Research and Publications

Input from industry stakeholders drives ACRP research, which in turn provides near-term, practical solutions to meet airport needs. ACRP solicits research ideas and problem statements from airport operators, industry associations, federal and state transportation agencies, universities, aviation consultants, and more to understand the most relevant industry issues. Every year, ACRP’s Oversight Committee (AOC) conducts a formal review process and selects problem statements to develop into fully funded research projects run by volunteer topic expert panels. Ultimately, these research projects will yield new resources to help airport practitioners address pressing issues in the industry. In 2022, ACRP selected 8 research projects, 10 synthesis of practice topics, and 3 legal research topics for FY 2023 that address key issues such as emergency response planning, planning for electric vehicles at airports, and understanding the experiences of women and minority employees at airports.

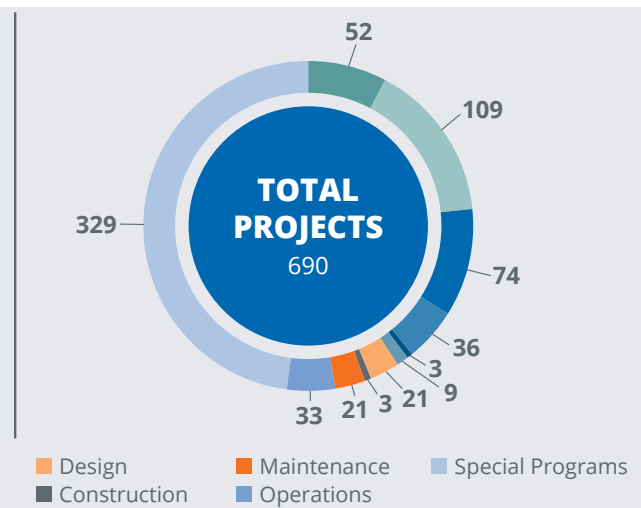
PROJECTS AND FUNDING

ACRP has provided more than \$169 million in funding for 690 research projects since its inception in 2005. These research projects cover a range of topics relevant to airports, from operations and maintenance to environmental issues. The images below illustrate the breakdown of funding and projects by research topic.

Funding by Research Topic (2005–2022)

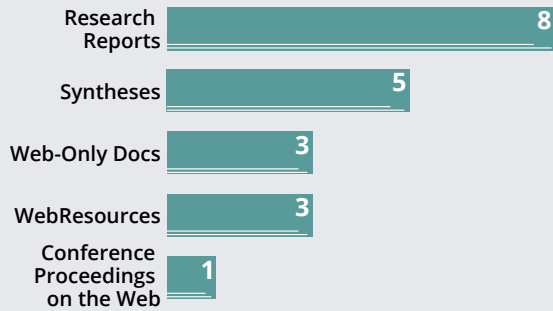


Projects by Research Topic (2005–2022)



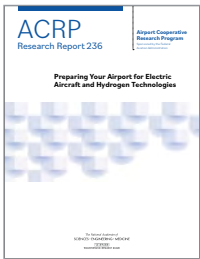
Data runs through fiscal year 2022

2022 Publications by Type



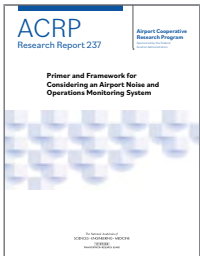
2022 Publication Highlights

In 2022, ACRP published 20 new research products covering a variety of topics from preparing airports for electric aircraft and hydrogen technologies to establishing successful pollinator programs at airports to developing a tool to analyze small aircraft runway length. Below are several examples of timely research reports published in 2022. To view the full list of 2022 publications, see Appendix B.



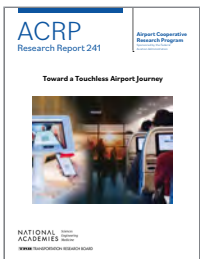
ACRP Research Report 236: *Preparing Your Airport for Electric Aircraft and Hydrogen Technologies*

ACRP Research Report 236 offers an introduction to the emerging electric aircraft industry, gives estimates of potential market growth, and provides information to help airports estimate the potential impacts of electric aircraft on their facilities and be prepared to accommodate them. The report also provides general guidelines to airports to help them incorporate electric aircraft into their operations and long-range planning.



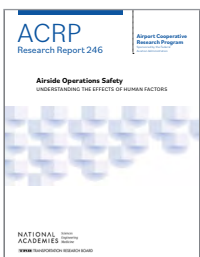
ACRP Research Report 237: *Primer and Framework for Considering an Airport Noise and Operations Monitoring System*

ACRP Research Report 237 is a comprehensive resource to help airport industry practitioners assess the potential benefits and costs of acquiring, maintaining, and updating a Noise and Operations Monitoring System (NOMS) or flight tracking tools without permanent noise monitors. This report provides valuable information for practitioners considering acquiring a NOMS as well as those exploring enhancements to their current system.



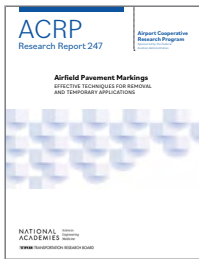
ACRP Research Report 241: *Toward a Touchless Airport Journey*

ACRP Research Report 241 presents solutions from emerging and existing technologies to non-technological solutions. The report details the current level of readiness, barriers to expect in implementation, and specific tips on getting started for each solution. Practitioners can also find information on technology gaps and the need for medium- and long-term solutions with further development opportunities that could minimize touchpoints.



ACRP Research Report 246: *Airside Operations Safety: Understanding the Effects of Human Factors*

ACRP Research Report 246 provides a thorough review of runway incursion incidents involving airport personnel and vehicles and the factors that led to them. This report provides airport executives and operations personnel with best practices and an understanding of how to implement mitigation strategies across their workforce and tenant base.



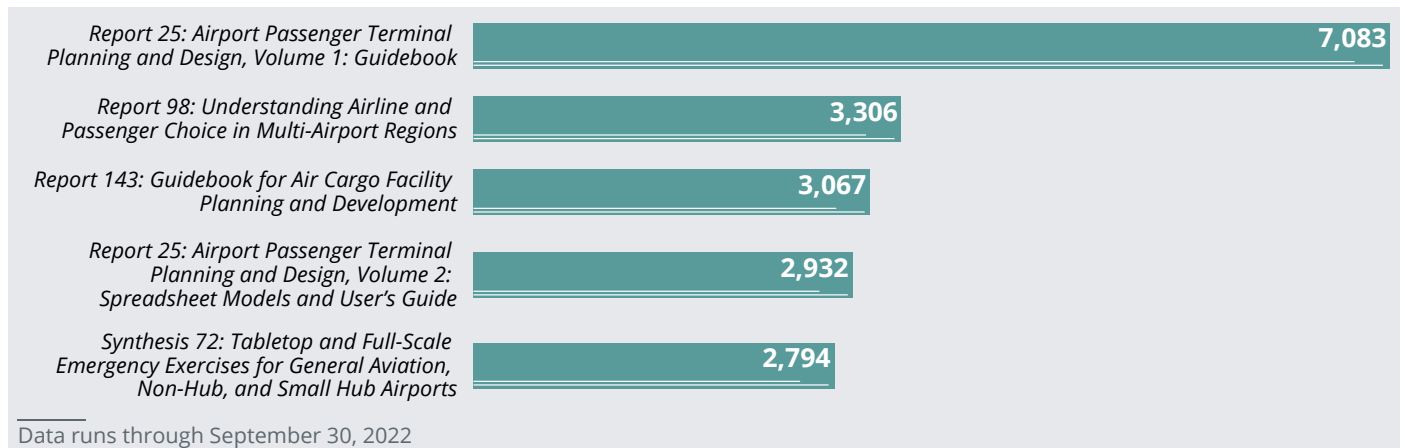
ACRP Research Report 247: Airfield Pavement Markings: Effective Techniques for Removal and Temporary Applications

The removal of existing pavement markings or application of temporary markings is often required during airfield construction projects. Current methods can leave traces of former markings, which can be mistaken for active markings by pilots and ground personnel and cause confusion. *ACRP Research Report 247* provides airport operators with better methods and procedures for removing old airfield markings as well as applying temporary markings to minimize such confusion and the associated safety risks.

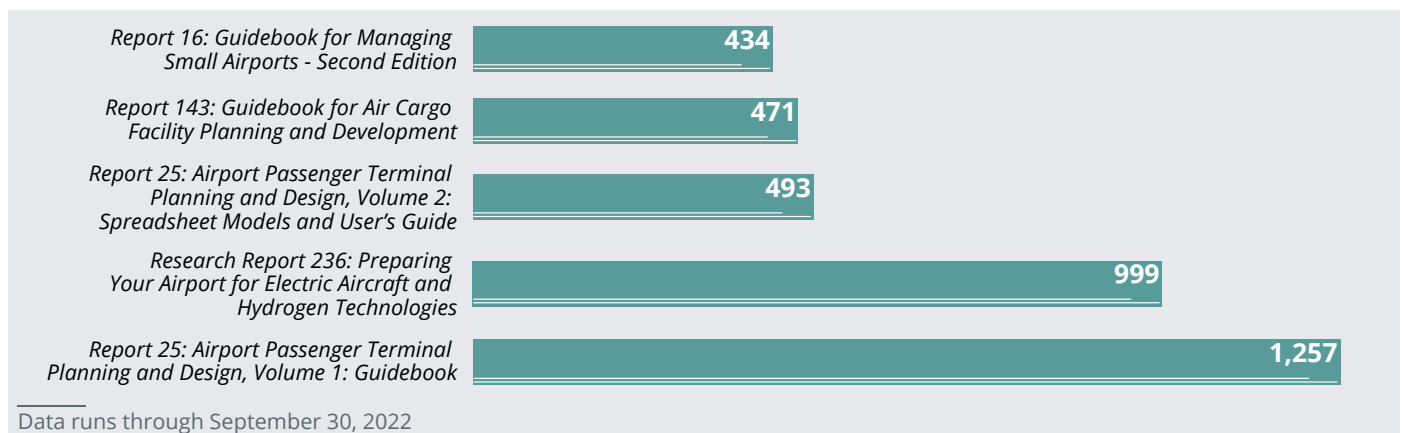
RESEARCH IN ACTION

ACRP maintains a research library of more than 500 research products that are available online to practitioners around the globe to download for free. The graphs below show the publications with the most engagement (that were viewed or read online without being downloaded) and the publications that were downloaded the most in 2022.

Publications with the Most Engagement in 2022



Publications with the Most Downloads in 2022



ACRP Research Collections

ACRP research is published in various formats and covers a wide array of subjects. The Research Collections series aggregate all relevant products and publications—from research reports to syntheses of practice to legal research digests and more—on specific themes in one central location. ACRP collections currently feature research results on such pressing and timely topics as infectious disease, fuels and fueling, and GA airports.



Communication and Collaboration

ACRP engages industry practitioners through interactive events, competitions, and programs. In 2022, ACRP continued to grow these efforts to connect with stakeholders from seasoned industry executives to graduate and undergraduate researchers.

PROBLEM STATEMENTS

ACRP research is driven by feedback from industry practitioners on the most pressing issues they face in their day-to-day roles. ACRP first launched its collaborative online platform, IdeaHub, in 2017 for airport practitioners to generate and share ideas and eventually turn them into problem statements with the goal of receiving ACRP research funding. In 2022, ACRP continued to improve the process for submitting problem statements to make it easier and more efficient. In response to user feedback, ACRP streamlined the submission process by replacing the online IdeaHub portal with a more condensed and user-friendly digital form. Users are now able to collaborate with peers at their own pace and submit a research idea for funding consideration without creating an account. This process will allow more users to efficiently share their ideas and bring attention to the most important industry research needs.

ACRP COLLABORATION INITIATIVES

Collaboration with airport stakeholders is integral in every step of the research process, and ACRP continues to strengthen old and develop new partnerships to explore new ideas and methods for addressing important challenges within the industry today. In 2022, ACRP entered into a letter of intent with the Airport Minority Advisory Council (AMAC). AMAC is dedicated to promoting the full participation of minority-owned, women-owned, and disadvantaged business enterprises (M/W/DBEs) in contracting opportunities and professional development in the aviation and aerospace industries. The partnership between ACRP and AMAC will facilitate information sharing and cooperation that will help to increase diversity in project panels and proposals while allowing ACRP research to reach a broader and more diverse audience.



Industry practitioners gathered for the Expanding DBE Participation in Aviation event in September 2022.

In September 2022, ACRP and AMAC held an event titled Expanding DBE Participation in Aviation. This event allowed AMAC members to learn more about engaging in ACRP research, including proposing on ACRP projects. Participants heard not only from ACRP on best practices for submitting proposals, but also from contractors and subcontractors who have practical experience working on ACRP projects. Participants also learned about the RFP process and submitting a successful proposal ahead of the release of RFPs in November and December. A networking reception sponsored by AMAC, the Airport Consultants Council (ACC), and CKL Engineering followed the event.

BRIDGING THE GAP

The 2021 Impact Report indicated that there are still many airports, mostly GA airports, that do not engage with ACRP. As GA airports' resources are limited, they could benefit greatly from ACRP research results. On October 25, 2022, the FAA and ACRP gave a presentation to GA airport operators about ACRP resources, how to participate in the research cycle, the benefits of engaging with ACRP, and a summary of some of the resources that are most beneficial to GA airport operators. The webinar can be viewed here:

<https://www.faa.gov/airports/acrp/>.



Screenshot from Bridging the Gap webinar presented by FAA and ACRP.

ACRP INSIGHT EVENTS

ACRP launched the Insight Event series in 2018 to address the ever-evolving issues the aviation industry must navigate. These events cover a range of issues from blockchain technology at airports to public-private partnerships and bring together subject matter experts and industry practitioners to share their experiences and best practices in a collaborative, innovative setting. Since the program was launched, ACRP has convened six Insight Events.

Future of Aviation

ACRP held its Future of Aviation Insight Event in March 2022. The two-day event took an in-depth look at mid-term (2035) and long-term (2060 and beyond) trends shaping the airport industry. Stakeholders attended panel discussions and breakout sessions to discuss themes of people, infrastructure, technology and innovation, and climate and sustainability. Max Hirsh of the Airport City Academy led the keynote session, which explored the topic of airport urbanism.

Systemic Inequalities in the Airport Industry: Exploring the Racial Divide

In April 2022, ACRP held the Insight Event, Systemic Inequalities in the Airport Industry: Exploring the Racial Divide. The event offered candid conversations and the sharing of personal experiences to explore the challenges posed by systemic racism in the airport industry, what is being done to address them, and future research needs. The event incorporated panel discussions and an audience breakout session as well as a keynote discussion with Bradley Mims, FAA Deputy Administrator.

INDUSTRY CONFERENCES

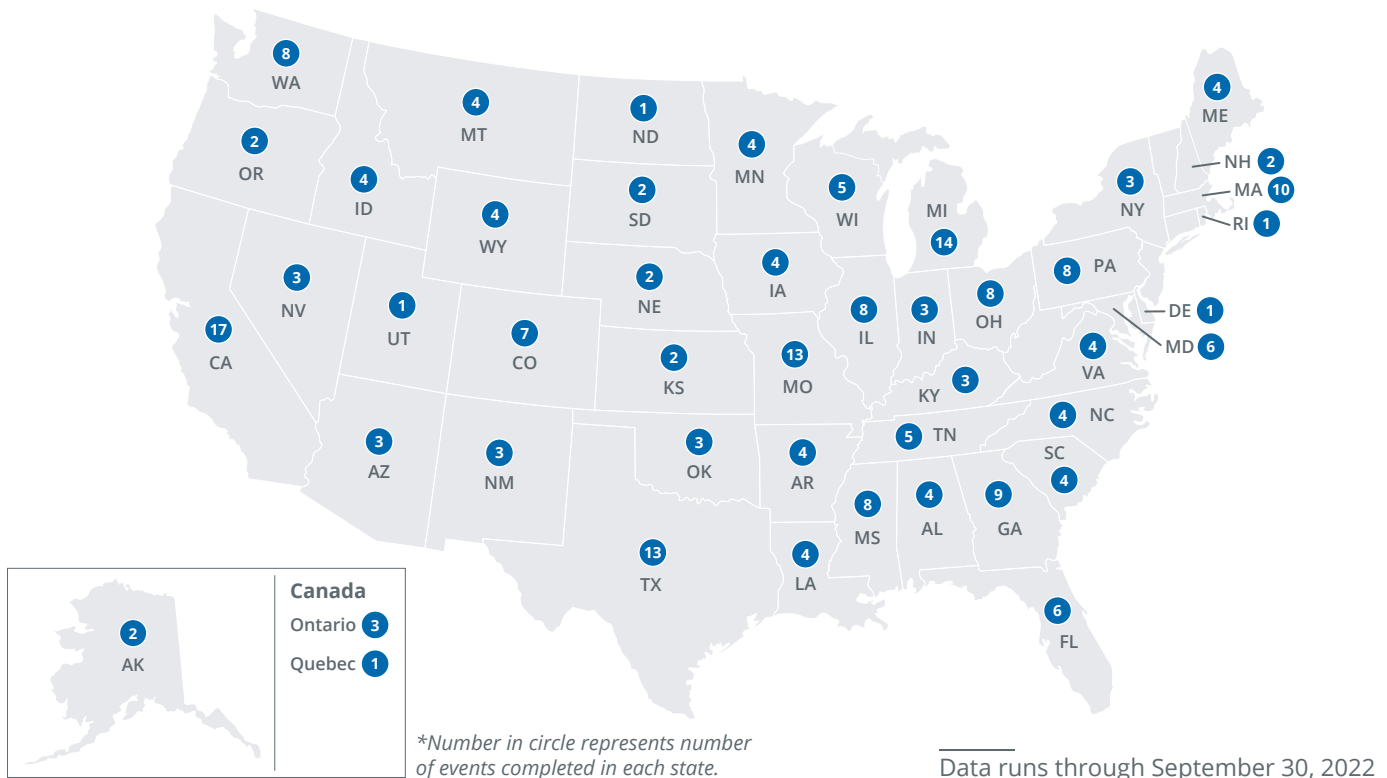
In 2022, ACRP staff traveled to nine industry events across the country to speak about ACRP and its research initiatives. These events covered topics ranging from general aviation to diversity in airport businesses and aviation emissions.

- January 10-12** TRB Annual Meeting
- May 1-2** Arizona Airports Association Spring Conference
- May 9-11** Utah State Aeronautics Conference
- May 24-26** FAA Aviation Emission Characterization (AEC) Roadmap Conference
- June 5-8** AAAE Annual Conference
- June 20-21** AMAC Airport Business Diversity Conference
- September 11-13** NASAO Annual Conference
- September 18-20** ACI-NA Annual Conference
- November 1-4** Noise Around Airports NAE Conference

AMBASSADORS

The ACRP Ambassador program comprises a select group of experienced airport professionals who volunteer to attend industry conferences and events across the country to help amplify ACRP’s research. While attending these events, Ambassadors staff exhibit booths and present ACRP research findings to encourage implementation, engage fellow practitioners in the research process, and share information and key messages about the program.

As of September 2022, Ambassadors have attended 11 industry events. Since the initiative’s inception in 2012, Ambassadors have engaged thousands of practitioners at 234 events across the United States and Canada.



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. This national competition challenges teams of undergraduate and/or graduate students working with faculty advisors to create innovative design solutions to address airport issues in four main areas: airport operation and maintenance, runway safety/runway incursions/runway excursions, airport environmental interactions, and airport management and planning. Students can win cash prizes for their design solutions, and first-place winners are given the opportunity to present their work at a national award ceremony.

The 2022 award ceremony was held at the National Academies of Science, Engineering, and Medicine building in Washington, DC, where Trish Hiatt, Deputy Director of the FAA's Airport Safety and Standards Directorate, and Joe Winingar, the FAA's Acting Director of Safety, Air Traffic Organization presented awards. The following teams received honors:

Florida Institute of Technology, *Implementing Alternative, Renewable Energy Sources for Ground-based Airport Operations*—First place, Airport Environmental Interactions Challenge.



Left to right: Faculty advisor Dr. Deborah Carstens, students Nikhita Agasam and Tejas Krsna, and Trish Hiatt.

Purdue University, *Simple, Affordable, Flexible, and Expandable Runway Status Lights*—First place, Runway Safety/Runway Incursions/Runway Excursions Challenge.



Left to right: Faculty advisor Dr. Mary Johnson, student team member Tai Wei Jiang, and Trish Hiatt.

University of South Florida, *Design the Allocation of External Alternative Aircraft Taxiing System at Airports*—First place, Airport Operation and Maintenance Challenge.



Left to right: Faculty advisors Professor Joseph Post and Dr. Yu Zhang, and Trish Hiatt.

Purdue University, *Airport Unmanned Self-Driving Wheelchair*—First place, Airport Management and Planning Challenge.



Left to right: Student team member Luigi Dy and Joe Winingar.

GRADUATE RESEARCH AWARDS

The ACRP Graduate Research Awards stimulate thought, discussion, and research from those who are likely to become future managers, operators, designers, and policymakers in aviation. This graduate student research program encourages applied research on airport and related aviation system issues to improve the quality, reliability, safety, and security of the civil aviation system. In 2022, eight students received ACRP funding to conduct their unique research projects. In addition to funding, award recipients receive access to a panel of expert advisors in their research area, an opportunity to present their final papers at the TRB Annual Meeting, and their papers are also considered for publication in the *Transportation Research Record: Journal of the Transportation Research Board*.

The 2022 award winners are:

- » **Saed Aker, Arizona State University:** *Design and Material Aspects of Sustainable Cold Recycling Technology for Airport Pavement Rehabilitation Practices.*
- » **Arafat Alam, University of Nebraska-Lincoln:** *Experimental and Numerical Study of Multi-Layer Cellular Concrete for EMAS Application.*
- » **Ryan Case, Purdue University:** *Geographic Information System (GIS) Application to Unmanned Aircraft Systems (UAS) Data Mapping.*
- » **Xiao Chen, Rutgers, The State University of New Jersey:** *Impact of Sea Level Rise on Airfield Pavement Performance in Coastal Areas.*
- » **Mark Jackson, University of Cincinnati:** *Arrayed Thermoelectric Sensors for Detection of Runway Surface Conditions.*
- » **Xiaofan Liang, Georgia Institute of Technology:** *Toward an Inclusive Aerotropolis: Critical Connectivity Analysis around Atlanta Airport.*
- » **Mohammad Noroozi, University of South Florida:** *Development of a Novel Foreign Object Debris Detection Framework Using Unmanned Aerial System and Computer Vision Algorithms.*
- » **Sen Wang, Purdue University:** *Determinants of Airport Parking Revenues: An Econometric Analysis.*



Representatives of the 2021-2022 Graduate Research Awards winners along with staff.

ACRP CHAMPIONS

The ACRP Champion program is designed for early- to mid-career professionals and provides participants with learning and professional development opportunities while facilitating the dissemination of ACRP research. ACRP Champions must be sponsored by their respective organizations and complete a series of “missions” designed to build knowledge and drive engagement in ACRP’s research and dissemination activities over a 2-year period. Through these missions, Champions can grow their professional networks, facilitate and initiate research, and develop valuable ACRP expertise.

Champion Spotlight

In 2022, Matt Dowell, Deputy Director of the Golden Triangle Regional Airport (GTR), successfully completed the Champion program. During his time as a Champion, Mr. Dowell made several important contributions to ACRP, including serving on the Champion Advisory Group (CAG) and as a project panel member for ACRP Project 03-50, “An Airport-Centric Study of the Urban Air Mobility Market.” He also served as an ACRP Ambassador with the 2020–2022 cohort and became an Accredited Airport Executive (AAE) through the AAEE accreditation program.





Digital Engagement and Dissemination

ACRP aims to amplify its reach to share its research with as many practitioners as possible. Over the years, ACRP has expanded the platforms it uses to disseminate its research and uses several web-based channels to reach new practitioners and keep existing users updated and engaged.

WEBINARS

ACRP's webinar series offers research teams and principal investigators (PIs) the opportunity to discuss their research findings, lessons learned, and cutting-edge solutions to issues facing the airport industry with a large audience of airport practitioners across the country.

Key Metrics



Number of webinars hosted in 2022

Average webinar satisfaction rating in 2022



Practitioners who have attended at least one webinar



Practitioners reached since 2011 (including repeat attendees)

Data runs through September 30, 2022

“Great content and speakers.”

— Practices in Airport Emergency Plans webinar

“Well presented and informative. Thank you.”

— Feedback on Rethinking Airport Parking to Enhance Revenues webinar

SOCIAL MEDIA

Social media provides relevant and accessible platforms 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.



Month	Twitter		LinkedIn		Facebook
	Impressions ¹	Engagements ²	Impressions ¹	Engagements ²	Total Reach ³
January	1,817	35	756	20	172
February	1,061	28	1,183	76	365
March	1,742	20	1,858	145	735
April	15,254	241	3,232	220	563
May	706	27	1,358	53	492
June	566	26	575	40	101
July	620	24	1,558	84	765
August	2,373	63	3,451	198	2,853
September	458	18	1,378	44	333

¹ Number of times a post is displayed online.

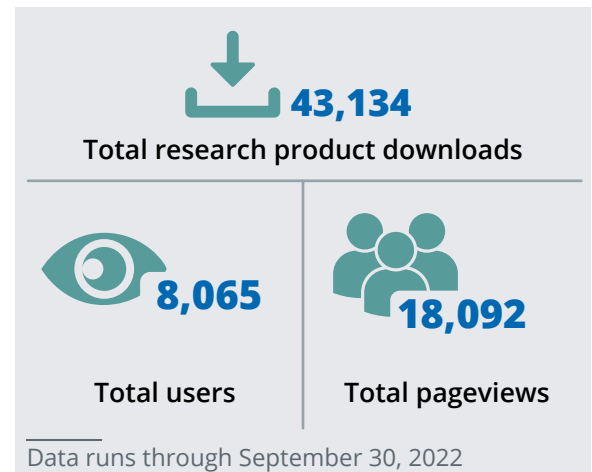
² Number of interactions a post or page receives (i.e., reactions, shares, comments, and link clicks).

³ Number of times a post or page was viewed at least once.

Data runs through september 30, 2022

WEBSITE

ACRP's website is integral for providing up-to-date program information, announcing events and deadlines, and accessing ACRP research and other publications. The website is a complete repository in which practitioners and stakeholders can find information on all program activities. In 2022, ACRP has continued to refine and modernize content, including a new, more streamlined and user-friendly program page for ACRP's University Design Competition. Students can easily access information on previous winners and competition guidelines and the evaluation process, and submit their projects through the online platform.





Appendix A: Publications of the Airport Cooperative Research Program, 2022

RESEARCH REPORTS

No.	Proj . No.	Title, Pages, Publication Year
236	03-51	Preparing Your Airport for Electric Aircraft and Hydrogen Technologies, 174 p. (2022)
237	02-89	Primer and Framework for Considering an Airport Noise and Operations Monitoring System, 50 p. (2022)
238	07-18	Airfield Design for Large Unmanned Aircraft Systems—A Guide, 126 p. (2022)
239	01-48	Assessing Airport Programs for Travelers with Disabilities and Older Adults (& WR 14), 126 p. (in production)
240	11-02/Task 40	Primer for Airport Organizational Redesign, 56 p. (2022)
241	11-02/Task 41	Toward a Touchless Airport Journey, 68 p. (2022)
242	03-57	Transformations in Wireless Connectivity—Guide to Prepare Airports (in production)
243	03-50	Urban Air Mobility: An Airport Perspective (in production)
244	01-36	Advancing the Practice of State Aviation System Planning, 210 p. (in production)
245	01-42	Guide to Evaluating Airport Governance Structures, 98 p. (2022)
246	06-08	Airside Operations Safety: Understanding the Effects of Human Factors, 96 p. (2022)
247	09-19	Airfield Pavement Markings: Effective Techniques for Removal and Temporary Applications, 30 p. (2022)

SYNTHESES (PROJECT 11-03)

No.	Proj . No.	Title, Pages, Publication Year
116	S01-24	Examples of Facility Space Provided for Community Use at Airports, 68 p. (2022)
117	S10-17	Agricultural Operations on Airport Grounds, 94 p. (2022)
118	S01-25	Airport Parking Pricing Strategies, 52 p. (2022)
119	S10-18	Considerations for Establishing and Maintaining Successful Pollinator Programs on Airports, 114 p. (2022)
120	S01-23	Airport Software Solutions and Services Sourcing, 150 p. (2022)

WEB-ONLY DOCUMENTS

No.	Proj . No.	Title, Pages, Publication Year
52	04-04B1	Command-Level Decision Making for Transportation Emergency Managers (joint with TCRP WOD 75 and NCHRP WOD 321), 259 p. (2022)
53	07-18	Measuring and Understanding the Relationship Between Air Service and Regional Economic Development (& WR 12), 148 p. (2022)
54	03-54	Small Aircraft Runway Length Analysis Tool, 107 p. (2022)

WEBRESOURCES

No.	Proj . No.	Title, Pages, Publication Year
10	11-02/Task 37	Periodic Publication on Transformative Technology at Airports Update (2022)
11	08-03	Construction Safety and Phasing Plans (2022)
12	03-58	Air Service Development and Regional Economic Activity (& WOD 53) (2022)
13	03-53	Airside Planning, Design, Construction, Operations and Maintenance (in production)
14	01-48	Tools to Assess Airport Programs for Travelers with Disabilities and Older Adults (& Rep. 239) (in production)

CONFERENCE PROCEEDINGS ON THE WEB

No.	Proj . No.	Title, Pages, Publication Year
29	N/A	The Future of Aviation: Proceedings of an ACRP Insight Event, 42 p. (2022)

Notes:

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

Appendix B: Summary of Project Status Through December 31, 2022

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	\$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		
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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
01-24	Renewable Energy as an Airport Revenue Source	\$400,000(13)	\$399,612	Harris Miller Miller & Hanson	8/13/2013	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	Engineering 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 - Published as Research Report 210		
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 & Report 16 Second Edition		
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		
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- Published as Research Report 215		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
01-36	Guidebook for Developing State Aviation System Plans	\$300,000(18)	\$299,999	Kimley-Horn & Associates	4/29/2019	3/31/2021	Completed - Published as Research Report 244	A. Velayos C. Nutting J. Raymond	M. Griffin
01-37	Performance Measures for State Aviation Agencies	\$250,000(18)	\$250,000	Mead & Hunt Inc.	6/18/2018	3/20/2020	Completed - Published as Research Report 223		
01-38	Market Characteristics for Property at Small Airports	\$200,000(18)	\$200,000	Aviation Management Consulting Inc.	5/9/2018	3/20/2020	Completed - Published as Research Report 213		
01-39	Creating Marketing Techniques to Improve Revenue Generation Partnerships	\$300,000(19)	\$300,000	Global Dynamic Group	10/6/2019	12/31/2020	Contract terminated: remaining research underway on Project 01-39A	D. Duchow	J. Navairrete
01-39A	Creating Marketing Techniques to Improve Revenue Generation Partnerships	AOC allocated an additional \$140,00 to be combined with unused funds from original contract.	\$200,000	Meehan Aviation Group	6/17/2021	11/30/2022	Research in Progress	D. Duchow	J. Navairrete
01-40	Evaluating the Traveler's Perspective to Improve the Airport Customer Experience	\$500,000 (19)	\$500,000	IOS Partners, Inc.	5/1/2019	9/30/20	Completed - Published as Research Report 231		
01-41	Blockchain Technology and Airports - A Primer	\$330,000 (19)	\$330,000	InterVISTAS	6/14/2021	8/13/2022	Research in Progress		M. Griffin
01-42	Review of Airport Governance Structures	\$300,000 (19)	\$300,000	Crawford, Murphy & Tilly, Inc.	4/24/2019	3/31/2021	Completed - Published as Research Report 245	M. Vasconcelos	M. Griffin
01-43	Conducting Consumer Research of Air Passengers	\$450,000 (19)	\$450,000	JD Frantz Research, Inc.	6/10/2019	4/30/2021	Completed - Published as Research Report 235		
01-44	Airport Insurance Requirements	\$300,000 (20)	\$299,133	Eastern Research Group	7/20/2020	4/22/2022	Completed - To be published as Research Report 248	C. Gillette	M. Griffin
01-45	Updated Guidebook for Airport Project Delivery Systems	\$450,000 (20)	\$450,000	HKA Global	5/8/2020	7/29/2022	Research in Progress	P. Dickerson	M. Griffin

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
01-46	A Guide for Geospatial Data Governance Policies and Procedures	\$450,000 (20)	\$349,911	Woolpert	5/5/2021	11/4/2022	Research in Progress	C. Criswell	E. McDonald
01-47	Guide to Airport Innovation—Creating an Organizational Fit for the Future	\$300,000 (20)	\$300,000	Barich, Inc	9/11/2020	7/22/2022	Research in Progress	R. Didio	M. Griffin
01-48	Assessing the Effectiveness of Airport Services and Programs for Passengers with Disabilities	\$500,000 (20)	\$500,000	IOS Partners, Inc	5/5/2019	12/3/2021	Completed - To be published as Research Report 239	W. Major	M. Greenberger
01-49	The Evolution of Knowledge Management at Airports	\$350,000 (20)	\$350,000	Spy Pond Partners	3/15/2020	11/29/2022	Research in Progress	C. Nutting	M. Greenberger
01-50	Data Privacy Management Guidance for Airports	\$350,000 (22)	\$349,085	Del Ray Solutions LLC	4/19/2022	10/18/2023	Research in Progress	N. Lomangino	M. Griffin
01-51	Improving Airport Organizational Practices to Enhance ACDBE/DBE Participation	\$400,000 (22)	\$399,998	AMAC	6/16/2022	12/14/2023	Research in Progress	A. Horton	J. Navarrete
01-52	Championing the Airport System—Challenging the Paradigm	\$690,000 (22)	\$649,945	Frutron Aviation	7/14/2022	1/15/2024	Research in Progress	Donald Harper	M. Greenberger
01-53	Review and Update of ACRP Administration and Human Resources	\$500,000 (22)	\$0				In Development		E. McDonald
02: Environment									
02-001	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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-002	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		
02-003	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		
02-003A	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		
02-004	Research Needs Associated with Particulate Emissions at Airports	\$100,000(06)	\$99,897	Environmental Consulting Group, Inc.	1/2/2007	3/1/2008	Completed - Published as Report 6		
02-004A	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		
02-005	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		
02-006	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		
02-007	Handbook for Analyzing the Costs and Benefits of Alternative Turbine Engine Fuels at Airports	\$500,000(07)	\$499,960	CSSI, Inc.	10/22/2007	10/29/2010	Completed - Published as Report 46		
02-008	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		
02-009	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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-010	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		
02-011	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		
02-012	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		
02-013	Guidebook of Practices for Improving Environmental Performance at Small Airports	\$200,000(09) \$75,000(08)	\$200,000	Gresham, Smith and Partners	6/16/2009	8/20/2010	Completed - Published as Report 43		
02-014	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		
02-015	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		
02-016	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		
02-017	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		
02-018	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		
02-019	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		
02-020	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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-020A	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		
02-021	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		
02-022	Incorporating Sustainability into Traditional Airport Projects	\$300,000(09)	\$300,000	Landrum & Brown	7/12/2010	5/31/2012	Completed - Published as Report 80		
02-023	Alternative Fuels as a Means to Reduce PM2.5 Emissions at Airports	\$500,000(10)	\$499,798	Project Performance Corp.	7/6/2010	4/30/2012	Completed - Published as Web-Only Document 13		
02-024	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		
02-025	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		
02-026	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		
02-027	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		
02-027A	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		
02-028	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		
02-029	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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-030	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		
02-031	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		
02-032	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		
02-033	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		
02-034	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		
02-035	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		
02-036	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		
02-037	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		
02-038	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		
02-039	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		
02-040	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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-041	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		
02-042	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		
02-043	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		
02-044	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		
02-045	Methodology to Improve EMDS/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		
02-046	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		
02-047	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		
02-048	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		
02-049	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		
02-050	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		
02-051	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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-052	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		
02-053	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		
02-054	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		
02-055	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-Only Document 36		
02-056	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		
02-057	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 Report 162		
02-058	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 Report 179		
02-059	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		
02-060	Use and Potential Impacts of AFFF Containing Per and Polyfluoroalkyl Substances (PFASs) at Airports	\$480,000(15)	\$299,995	Dillon Consulting Limited	7/29/2015	10/28/2016	Completed - Published as Report 173		
02-061	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		
02-062	Green Stormwater Infrastructure Strategies for Airports	\$350,000(15)	\$299,970	The Cadmus Group, LLC	4/30/2015	11/21/2016	Completed - Published as Report 174, Volumes 1 & 2		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-063	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 Report 180		
02-064	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		
02-065	Tracking Alternative Jet Fuel	\$250,000(15)	\$249,961	Metron Aviation	6/19/2015	7/29/2016	Completed - Published as Research Report 165		
02-066	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		
02-067	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		
02-068	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 Report 193		
02-069	Integrating Airport Sustainability and the NEPA Process	\$400,000(16)	\$400,000	Vanasse Hangen Brustlin, Inc.	9/29/2016	1/31/2019	Completed - Published as Research Report 209		
02-070	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		
02-071	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 Published as Report 14		
02-072	Developing a Comprehensive Renewable Resources Strategy	\$300,000(16)	\$300,000	Cadmus Group, LLC	9/29/2016	8/31/2018	Completed- Publication Published as Report 197		
02-073	Interactive Tool for Understanding NEPA at General Aviation Airports	\$250,000(16)	\$249,864	RS&H, Inc.	8/5/2016	3/31/2019	Completed - Published as Research Report 211		
02-074	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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-075	Benefit-Cost Analyses Guidebook for Airport Stormwater	\$450,000(16)	\$325,000	The Cadmus Group, LLC	9/21/2016	12/31/2018	Completed - Published as Research Report 208		
02-076	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 - Published as Research Report 207		
02-077	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		
02-078	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		
02-079	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 - Published as Web-Only Doc 43		
02-080	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		
02-081	Commercial Space Transportation Noise Measurements	\$600,000(17)		Blue Ridge Research and Consulting LLC	8/1/2017	3/31/2020	Completed - Published as Web-Only Document 47		
02-082	Developing a Roadmap to to Achieve Zero-Emissions Status	\$350,000(18)	\$350,000	Cadmus Group, LLC	6/20/2018	10/19/2019	Completed - Published as Report 220 Pre-Pub		
02-083	Measuring Quality of Life in Communities Surrounding Airports	\$400,000(18)		Harris Miller, Miller, & Hanson Inc.	4/30/2018	12/31/2019	Completed- Published as Report 221		
02-084	Evaluating the Use of Spatially Precise Diurnal Population Data in Aviation Noise Studies	\$300,000(18)		Metron Aviation, Inc.	5/8/2018	5/29/2020	Completed - Published as Web-Only Document 48		
02-085	Commercial Space Vehicle Emissions Modeling	\$450,000(18)	\$449,973	Blue Ridge Research and Consulting LLC	6/1/2018	11/30/2020	Completed - Published as Web-Only Document 51		
02-086	Measuring the Impact of Temporary Flight Restriction on Airports	\$400,000(18)	\$400,000	Metron Aviation, Inc.	5/25/2018	11/30/2019	Completed- Published as Research Report 224		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-087	Determining Airfield Pavement Deice and Anti-Icer Contributions to Airport Stormwater	\$400,000(18)	\$350,000	LimnoTech Inc.	6/1/2018	12/31/2020	Completed - Publication Pending	M. Lamprecht J. Barrilleaux	J. Navarrete
02-088	Techniques for Modifying NextGen Flight Track Design to Reduce Noise Exposure and	\$400,000	\$0				Canceled		
02-089	A Primer and Framework for Considering an Airport Noise and Operations Monitoring System (NOMS)	\$250,000(20)	\$249,940	Landrum & Brown	4/27/2020	10/27/2021	Completed - Published as Research Report 237		
02-090	Development of Airport Construction Emission Inventory Tool (ACEIT) Version 2.0	\$350,000(20)	\$349,982	C & S Companies	3/1/2021	2/28/2023	Research in Progress	T. Cuddy	J. Navarrete
02-091	Development of PFAS Source Differentiation Guidelines for Airports	\$490,000(20)	\$299,838	Terracon Consultants	5/11/2021	11/10/2022	Research in Progress	M. Lamprecht	J. Navarrete
02-092	General Aviation Airports and Resilience: Complete Toolkits for Self-Directed Planning	\$320,000(21)	\$320,000	The Cadmus Group	7/27/2021	1/26/2023	Research in Progress	T. Cuddy	E. McDonald
02-093	Guidebook for PFAS Management at Airports	\$350,000(21)	\$350,000	RS&H	6/4/2021	1/31/2023	Research in Progress	M. Lamprecht	J. Navarrete
02-094	ACRP Project Panel to Update ACRP WebResource 4: Airport Air Quality Resource Library	\$150,000(21)	\$149,862	Crawford, Murphy, Tilly, Inc	9/16/2021	9/16/2022	Research in Progress	S. Staehle	M. Griffin
02-095	Update ACRP Report 135: Understanding Airport Air Quality and Public Health Studies Related to Airports	\$100,000(21)	\$99,979	SC&A	9/29/2021	3/31/2023	Research in Progress	A. Stasser	E. McDonald
02-096	Update ACRP Report 99: Guidance for Treatment of Airport Stormwater Containing Deicers	\$150,000(21)	\$150,000	Gresham Smith	11/3/2021	11/02/2023	Research in Progress	J. Johnson	J. Navarrete

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
02-097	Update to the Guidelines, Tools, and Resources Related to ACRP Reports 11, 147, and 160	\$650,000 (22)	\$449,953	ICF Incorporated	6/30/2022	12/29/2023	Research in Progress	A. Strasser	J. Navarrete
02-097A	Update ACRP Report 43: Improving Environmental Performance at Small Airports	\$300,000 (22)	\$0				In Development		J. Navarrete
02-098	Airport Energy Resiliency	\$1,200,000 (22)	\$400,000	Hanson Professional Services	4/4/2022	10/04/2023	Research in Progress	Jean Wolfers-Law	M. Greenberger
02-099	Use of Equity and Environmental Justice Data to Support Airport Decision Making	\$400,000 (22)	\$397,661	HMMH	5/16/2022	11/15/2023	Research in Progress	M. Washington	J. Navarrete
02-100	Carbon Removal and Reduction to Support Airport Net-Zero Goals: A Playbook and Tools	\$600,000 (22)	\$600,000	Mead & Hunt	3/16/2022	11/15/2023	Research in Progress	A. Cohen	M. Greenberger
02-101	Onboarding Employees to Airport Environmental Issues	\$400,000 (22)					In Development		J. Navarrete
02-102	A Balanced Look at Local Airport Activity and Climate Change	\$400,000 (22)	\$0				In Development		E. McDonald
02-103	Scan of Technologies to Remove Residual PFAS from Airport Firefighting Equipment	\$310,000 (23)	\$0				In Development		J. Navarrete
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		

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

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

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-27	Evaluating Methods for Counting Aircraft Operations at Non-Towered Airports	\$400,000(11)	\$400,000	Woolbert	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)	\$349,986	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		
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 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 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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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	1/15/2020	Completed - Published as Research Report 204		
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 - Published as Research Report 212 Volume 1, 2, and 3		
03-43	Integrating Airport Ground Access and Metropolitan Surface Transportation Planning Efforts	\$500,000(17)	\$326,173	WSP	4/27/2017	1/29/2020	Completed - Published as Research Report 216		
03-44	Best Practices in Building Air Service Through Incentive Programs	\$400,000(17)	\$324,863	GRA, Inc.	4/11/2017	1/29/2020	Completed - Published as Research Report 218		
03-45	Collecting and Sharing of Operational and Safety Data	\$400,000(17)	\$400,000	Booz Allen Hamilton	5/17/2017	2/28/2020	Completed - Published as Research Report 222		
03-46	Implementing Privatization: Guidance for Airport Decision-Makers	\$350,000(18)	\$349,985	WSP	4/24/2018	6/30/2020	Completed - Published as Research Report 227		
03-47	Rethinking Airport Parking Facilities to Protect and Enhance Non-Aeronautical Revenue	\$450,000(18)	\$450,000	Intervistas	4/18/2018	5/5/2020	Completed - Published as Research Report 225		
03-48	Advanced Ground Vehicle Technologies (AGVT) for Airside Operations	\$250,000(18)	\$250,000	Purdue University	7/9/2018	10/8/2019	Completed - Published as Research Report 219		
03-49	Effective Collaboration to Plan and Respond to Communicable Disease Threats	\$500,000 (19)	\$500,000	Eastern Research Group, Inc	3/15/2019	11/1/2022	Research in Progress	J. Wilhelmi	M. Greenberger

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-50	An Airport-Centric Study of the Urban Air Mobility Market	\$350,000 (19)	\$350,000	WSP USA, Inc.	7/3/2019	12/31/2021	Completed - To be published as Research Report 243	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	5/15/2021	Completed - Published as Research Report 236		
03-52	Airport Common Use Program Development Guidebook	\$400,000 (20)	\$400,000	Barich, Inc.	4/30/2020	8/26/2022	Research in Progress	L. Loarte	M. Griffin
03-53	Development of Baggage Handling System Decision Making Framework Based on Total Cost of Ownership	\$340,000 (20)	\$344,666	Studdiford Technical Solutions	5/20/2020	10/30/2022	Research in Progress	C. Nutting	J. Navarrete
03-54	General Aviation Airports Runway Length Analysis	\$300,000 (20)	\$300,000	Virginia Tech	6/12/2020	4/29/2022	Completed - Published as Web-Only Document 54	K.Duffy	J. Navarrete
03-55	Airport Biometrics—A Primer	\$250,000 (20)	\$250,000	InterVistas	5/7/2020	2/8/2021	Completed - Published as Research Report 233		
03-56	Airside Planning, Design, and Operations: Electronic Resource Library	\$300,000 (20)	\$300,000	Hanson, Inc	5/5/2020	10/31/2021	Completed - To be published as WebResource 13		M. Greenberger
03-57	Guidebook to Prepare Airports for Transformations in Wireless Connectivity	\$400,000 (20)	\$400,000	Skymanatics, LLC	6/22/2020	2/22/2022	Completed - To be published as Research Report 242	R. Sanchez	M. Greenberger
03-58	Measuring the Effect of Changes in Air Service Connectivity on Regional Economic Development	\$500,000 (20)	\$500,000	InterVistas	5/18/2020	2/22/2022	Completed - Published as WebResource 12	S. Glasgow	J. Navarrete
03-59	Airports and the Homeless	\$400,000 (21)	\$400,000	The Cadmus Group	5/11/2021	1/31/2023	Research in Progress	W. Reinhardt	J. Navarrete
03-60	Incorporating Shock Events into Traffic and Forecasting and Airport Planning	\$450,000 (21)	\$450,000	InterVistas Consulting Inc.	8/24/2021	2/3/2023	Research in Progress	M. Lawrance	M. Griffin
03-61	Assessing and Improving Data Analytic Capabilities in Airports	\$300,000 (21)	\$299,950	ICF Incorporated, LLC	8/18/2021	12/31/2021	Research in Progress	S. Austin	M. Griffin

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
03-62	A Toolkit for Establishing Airport Catchment Areas	\$300,000 (21)	\$300,000	Purdue University	6/4/2021	12/3/2022	Research in Progress	C. Criswell	J. Navarrete
03-63	Modernizing Air Cargo Operations in U.S. Airports	\$350,000 (21)	\$349,847	Strategic Aviation Solutions, International, Inc.	7/28/2021	1/28/2023	Research in Progress	L. Loarte	J. Navarrete
03-65	ACRP Policy and Planning Product Updates	\$500,000 (22)	\$0				In Development	J. Carlini	M. Griffin
03-66	Digital Twins for Airports	\$350,000 (22)	\$0				In Development	A. Goldsmith	M. Griffin
03-67	Peer-to-Peer Car Sharing Challenges and Opportunities at Airports	\$400,000 (22)	\$400,000	InterVISTAS	6/6/2022	12/5/2023	Research in Progress	S. Gill	J. Navarrete
03-68	Integrated Contingency Planning for Small and Non-Hub Airports	\$400,000 (22)	\$400,000		6/1/2022	12/1/2023	Research in Progress	M. Cozad	E. McDonald
03-69	Identifying Congestion and Safety Risks Due to Heterogeneous Airport Curbside Activity and Remedial Solutions	\$350,000 (23)	\$0				In Development		J. Navarrete
03-70	Incorporating Emerging Technologies into Airport In-Terminal Concession Programs	\$500,000 (23)	\$0				In Development		J. Navarrete
03-71	Guidance for Planning for Future Electric Vehicle Growth at Airports	\$600,000 (23)	\$0				In Development		M. Griffin
03-72	Economic Impact of E-Commerce on Airport Industry	\$400,000 (23)	\$0				In Development		E. McDonald
03-73	Best Practices in Transitioning to Lead-Free AVGas	\$500,000 (23)	\$0				In Development		J. Navarrete
03-74	ACRP WebResource to Support Research into Air Traveler Choice Models	\$350,000 (23)	\$0				In Development		E. McDonald

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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	MIDA 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 - Published as Web-Only Document 52, joint with TCRP Web-Only Document 75 and NCHRP Web-Only Document 321		
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 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
04-07A	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		
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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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 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		
04-19A	Airport Emergency Planning Template Tool Enhancements	\$190,000 (19)	\$190,000	Ankura Consulting, Inc.	3/15/2019	8/21/2021	Completed - Published as WebResource 9		
04-20	Design Considerations for Airport EOCs	\$400,000(16)	\$249,900	Faith Group, LLC	8/23/2016	3/30/2018	Completed - Published as 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 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 - Published as Research Report 206		
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	Completed - Published as WebResource 8		
04-24	Airport Contributions to the Study, Investigation, and Interdiction of Human Trafficking	\$500,000 (20)	\$400,000	The Cadmus Group	6/8/2020	8/31/2022	Completed - To be published as Research Report 249	E.Black	J. Navarrete
04-25	Airports and Pandemics-- Reducing the Spread of Communicable Diseases	\$900,000 (21)	\$900,000	The Cadmus Group	7/16/2021	3/25/2024	Research in Progress	C. Schweitzer	J. Navarrete
04-26	A Framework for Airport Evacuation: Assessment of Landside Capacity Using Micro-Meso Simulation Tool	\$400,000 (21)	\$400,000	Salus Solutions	1/30/2021	1/30/2023	Research in Progress	W. Reinhardt	M. Griffin
04-27	Alternative Methods to Manage Tree Growth Near Airports	\$300,000 (21)	\$300,000	Mead & Hunt	5/10/2021	11/9/2022	Research in Progress	C. Criswell	M. Greenberger

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
04-28	Developing Alternative Aircraft Arresting Systems	\$575,000 (21)	\$575,000	Dayton University	6/11/2021	6/10/2023	Research in Progress	N. Subbotin	M. Griffin
04-29	Transportation Emergency Response Application (TERA): Migration Options Beyond 2020	\$50,000 (21)	\$50,000				In Development		S. Parker
04-30	Airport Emergency Management Capabilities Development	\$450,000 (23)	\$0				In Development		E. McDonald
04-31	Providing Adequate and Balanced Trainer Facilities for Required and Recurrent Training for Airport Firefighters	\$350,000 (23)	\$0				In Development		M. Griffin
04-32	Guidance in Using Existing and Emerging Technologies to Identify and Mitigate Human Trafficking in Airports	\$400,000 (23)	\$0				In Development		J. Navarrete
04-33	Guidebook for Measuring Financial Benefits of Airport Safety Management Systems	\$400,000 (23)	\$0				In Development		E. McDonald
04-34	Best Practices for Building and Improving an Aircraft Rescue and Firefighting Program	\$500,000 (23)	\$0				In Development		M. Griffin
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		
05-03	Mitigating and Responding to Airport Cybersecurity Events	\$600,000 (22)	\$0				In Development	T. McKeever	M. Griffin

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 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 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- Published as Report 217		
06-06	Cultivating Talent in the Airport Environment	\$250,000(19)	\$250,000	ICF Incorporated	5/24/2019	11/23/2020	Completed - Published as Research Report 232		
06-07	Enhancing Academic Programs to Cultivate Future Airport Industry Professionals	\$300,000 (19)	\$300,000	The Ohio State University	6/1/2019	11/23/2020	Completed - Published as Research Report 230		
06-08	Human Factors in Airport Operations	\$385,000 (19)	\$385,000	Futron Aviation	7/19/2019	12/31/2021	Completed - Published as Research Report 246	J. Carlini	M. Griffin
06-09	Quantifying and Understanding Women and Minority Airport Employee Populations to Track Progress	\$800,000 (23)	\$0				In Development		J. Navarrete
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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
07-02	Airport Curbside and Terminal Area Roadway Operations	\$400,000(06) \$150,000(09)	\$528,000	Jacobs Consultancy	11/15/2006	5/19/2010	Completed - Published as Report 40		
07-03	Developing Improved Civil Aircraft Arresting Systems	\$500,000(07)	\$499,455	Protection Engineering Consultants	5/23/2007	10/31/2009	Completed - Published as Report 29		
07-04	Airport Passenger Terminal Planning and Design: Spreadsheet Models and User's Guide	\$400,000(07)	\$400,000	Landrum & Brown	6/6/2007	10/31/2009	Completed - Published as Report 25, Volume 2		
07-05	Airport Passenger Terminal Planning and Design: Guidebook	\$400,000(07)	\$400,000	Landrum & Brown	6/28/2007	10/31/2009	Completed - Published as Report 25, Volume 1		
07-06	Airport Signage and Wayfinding Information Guidelines	\$250,000(08)	\$250,000	Gresham, Smith and Partners	8/21/2008	3/1/2011	Completed - Published as Report 52		
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 Report 177		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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 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		
07-15A	Airport Passenger Terminal Design Library-Updates to ACRP WebResource 2	\$250,000(19)	\$250,000	Intermodal Logistics Consulting, Inc.	5/24/2019	8/31/2022	Completed - Published as an update to WebResource 2	W. Reinhardt	J. Navarrete
07-16	Airport Terminal Ancillary Service Spaces and Restroom Planning and Design	\$350,000(18)	\$349,837	Alliance	2/28/2018	5/29/2020	Completed - Published as Research Report 226		
07-17	Update ACRP Report 40: Airport Curbside and Terminal Area Roadway Operations	\$500,000 (20)	\$500,000	InterVISTAS Consulting Incorporated	10/1/2020	8/15/2023	Research in Progress	W. Reinhardt	M. Griffin
07-18	Develop Airfield Design Guidelines for Unmanned Aerial Vehicles	\$400,000 (20)	\$399,918	Woolpert, Inc.	5/11/2020	11/1/2021	Completed - Published as Research Report 238	J. Schroeder	M. Greenberger
07-19	Update to ACRP Report 25: Airport Passenger Terminal Planning and Design	\$500,000 (22)	\$499,880	Ricondo & Associates	5/24/2022	9/23/2023	Research in Progress	C. Nutting	E. McDonald
07-20	Unruly Airport Passengers	\$400,000 (23)	\$0				In Development		J. Navarrete
07-21	Understanding Opportunities with Deploying Private Wireless Network at Airports	\$400,000 (23)	\$0				In Development		M. Griffin
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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
08-03	Construction Safety and Phasing Plans	\$250,000(19)	\$250,000	Garver	8/21/2019	11/20/2020	Completed - Published as WebResource 11		
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		
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 - Publication Pending		
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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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 Report 172		
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	1/30/2020	Completed - Published as Report 214		
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 Report 203		
09-18	Rapid Airfield Concrete Pavement Slab Replacement and Patching Guidance	\$400,000(19)	\$400,000	Nichols Consulting Engineers	4/24/2019	3/15/2021	Completed - Published as Research Report 234		
09-19	Airfield Pavement Markings- Effective Removal and Temporary Application Techniques	\$450,000(19)	\$450,000	Texas A&M Transportation Institute	6/1/2019	12/31/2021	Completed - Published as Research Report 247	J. Carlini	M. Griffin
09-20	Consequences of Delayed Maintenance of Airport Assets	\$300,000 (20)	\$299,705	University of Nevada Las Vegas	1/15/2021	7/15/2022	Research in Progress	M. Woods	M. Griffin

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
09-21	Guidelines for the Effective Transition of Asset Data from Design/Construction to Operations and Maintenance	\$400,000(20)	\$299,063	Woolpert	8/24/2021	2/24/2023	Research in Progress		E. McDonald
09-22	Cost-Effective Training for Airfield Electricians at Small Airports	\$300,000 (22)	\$0				Research in Progress	M. Woods	E. McDonald
10: Operations									
10-01	Optimizing the Use of Aircraft Deicing and Anti-Icing Fluids	\$300,000(06) \$50,000(08) \$100,000(08)	\$349,030	APS Aviation, Inc.	3/20/2007	7/31/2010	Completed - Published as Report 45		
10-02	Planning for Offsite Airport Terminals	\$350,000(06)	\$350,000	MarketSense	12/18/2006	9/1/2009	Completed - Published as Report 35		
10-03	Guidebook for Evaluating Airport Parking Strategies and Supporting Technologies	\$300,000(07)	\$300,000	Jacobs Consultancy	9/14/2007	9/1/2009	Completed - Published as Report 24		
10-04	Airports and the Newest Generation of General Aviation Aircraft	\$500,000(07)	\$496,390	GRA, Inc.	6/27/2007	5/31/2009	Completed - Published as Report 17, Volumes 1 and 2		
10-05	Reference Guide on Understanding Common Use at Airports	\$500,000(08)	\$399,981	Barich, Inc.	5/30/2008	9/29/2009	Completed - Published as Report 30		
10-06	Handbook to Assess the Impacts of Constrained Parking at Airports	\$400,000(08)	\$398,563	Ricondo & Associates	6/16/2008	3/8/2010	Completed - Published as Report 34		
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		

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

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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 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 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 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		
10-26	Airport Microgrid Implementation Toolkit	\$450,000(18)	\$450,000	Rocky Mountain Institute	6/22/2018	5/31/2020	Completed - Published as Report 228		
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	9/15/2020	Completed - Published as Research Report 229		
10-28	Guide for Integrating Crisis Management and Business Continuity at Airports	\$500,000 (20)	\$499,973	Hegerty Consulting, Inc	5/27/2020	2/26/2022	Completed - Publication pending	S. Austin	M. Griffin

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
10-29	Aircraft Jet Blast Estimation Tool	\$450,000 (20)	\$449,983	Blue Ridge Research and Consulting	8/1/2020	5/31/2023	Research in Progress	R. Bale	E. McDonald
10-30	Evaluating the Effectiveness of an Airport's Wildfire Hazard Management Program	\$400,000 (20)	\$400,000	Mead & Hunt	3/20/2020	11/4/2022	Research in Progress	J. Weller	M. Greenberger
10-31	Guidebook for Virtual Airport Ramp Control Operations Facilities	\$350,000 (20)	\$350,000	Ricondo	3/20/2020	9/11/2022	Completed - Publication Pending	K. Duffy	M. Greenberger
10-32	Airside Automated Ground Vehicle Technology (AGVT) Demonstration to Support Airport Operations	\$450,000(21)		Ernst & Young - Parthenon	6/1/2021	5/20/2023	Research in Progress	J. Torres	M. Griffin
10-33	Incorporating Emerging Ground Access Technologies at Airports	\$500,000 (22)	\$500,000	WSP	3/18/2022	11/22/2023	In Development	P. Forrester	E. McDonald
10-34	Airport Microgrid Toolkit Upgrade to ACRP WebResource	\$100,000 (22)	\$0				In Development		M. Griffin
10-35	ADS-B Airport Traffic Count Validation and Recommendations	\$400,000 (23)	\$0				In Development		M. Griffin
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	J. Christensen

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)		Various	2/1/2006		Continuing Project: See 11-02 Table	L. Miller	M. Greenberger
		\$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)							
		\$200,000(21)							
		\$100,000(22)							
11-03	Synthesis of Information Related to Airport Practices	\$500,000(06)		Transportation Research Board	2/1/2006		Continuing Project: See 11-03 Table 3, 4, 8, 12, 13, 17, 18, 22, and 23	P. Magnotta	J. Christensen
		\$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)							
		\$405,000(20)							
		\$405,000(21)							

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
11-04	Graduate Research Award Program on Public-Sector Aviation Issues	\$100,000(08) \$100,000(09) \$100,000(10) \$140,000(11) \$140,000(12) \$140,000(13) \$140,000(14) \$568,779(15) \$907,580(16) \$507,409(17) \$632,627(18) \$596,000(19) \$605,589(20) \$550,000(21) \$682,078(22)	Transportation Research Board (08-13) Old Dominion University Research				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.	E. Black	M. Griffin
11-04A	Airport Research Competition for Universities	included in 11-04 (15) (16) (17) (18) (19) (20) (21) (22)		Old Dominion University Research Foundation	5/9/2014	1/31/2022	Research in Progress	R. Samis	M. Griffin
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) \$900,000(20)		Various			Continuing Project	J. Showalter	M. Greenberger
11-06	Evaluating ACRP Processes	\$900,000(21) \$900,000(22)		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		

No.	Title	Allocation	Contract Amount	Contractor	Start Date	End Date	Status	FAA Liaison(s)	Staff Officer
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)	\$100,000	The Cadmus Group, LLC	11/9/2016	9/30/2018	Completed - Published as Conference Proceedings on the Web 24		
11-08(16-02)	Forum on Economic and Social Sustainability at Airports	\$100,000(16)	\$100,000	The Cadmus Group, LLC	11/9/2016	9/30/2018	Completed - Published as Conference Proceedings on the Web 23		
11-08(16-03)	Forum on Airport Roles in Reducing Communicable Diseases Transmission	\$100,000(16)	\$100,000	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)	\$119,994	Eastern Research Group	10/13/2017	12/11/2019	Completed- Published as Conference Proceedings 26		
11-08(19-01)	Blockchain Technology and Airports	\$120,000 (19)	\$119,929	Eastern Research Group	3/21/2019	12/31/2020	Completed - Published as Conference Proceedings 28		
11-08(20-01)	Future of Aviation	\$120,000 (20)	\$119,932	HMMH	1/31/2020	1/31/2023	Completed - Published as Conference Proceedings on the Web 29		J. Navarrete
11-08(20-02)	On Demand Aviation Services for Passengers and Goods	\$119,963 (20)	\$119,963	Eastern Research Group	3/23/2020	1/20/2023	Research in Progress	C. Gillette	M. Griffin
11-08/ 21-01	ACRP Insight Event – Future of Airport Finances	\$170,000 (20)	\$0	HMMH			Research in Progress		M. Griffin
11-08/ 21-02	ACRP Insight Event --Issues on Systemic Racism	\$170,000 (20)	\$119,525	Metro Analytics	12/14/2020	12/13/2021	Contract Terminated. Remaining funds to be transferred to new ACRP Project 11-08/21-02A		J. Navarrete
11-11	Facilitating Implementation of ACRP Products	\$500,000 (20)	\$0				In Development	R. Didio	M. Greenberger
11-11	ACRP Strategic Initiatives	\$700,000 (20)	\$0				In Development		M. Greenberger

**ACRP PROJECT 11-01
Legal Aspects of Airport Programs**

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
01-01	Compilation of DOT and FAA Airport Legal Determinations and Opinion Letters through December 31, 2018	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	Terminated	
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 - Published as Legal Research Digest 38	
10-03	Legal Issues Relating to Airport Commercial Contracts	Parker, Poe, Adams & Bernstein	June 2018	Completed - Published as Legal Research Digest 41	
10-04	Updated Survey of Laws and Regulations Applicable to Airport Commercial Ground Transportation	Carlos Sun	November 2018	Completed - Published as Legal Research Digest 39	
11-01	Permissible Uses of Airport Revenue and Property	Kaplan Kirsch, Rockwell, LLP	September 2018	Completed - Published as Legal Research Digest 40	
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	Kaplan Kirsch Rockwell, LLP	March 2020	Research in Progress	J. Christensen
12-01	Legal Implications of Data Collection at Airports	CrowzNest	December 2019	Completed - Published as Legal Research Digest 42	
12-02	Developing Lease Terms for New General Aviation Development			In Development	J. Christensen
13-01	Legal Considerations for Telecommunications at Airports	Del Ray Solutions	March 2019	Completed - Published as Legal Research Digest 43	

No.	Title	Consultant	Start Date	Estimated Completion Date	Staff Officer
14-01	Legal Considerations for Airports Responding to Pandemics		February 2022	Research in Progress	J. Christensen
15-01	Accommodating Federal Agencies at Airports and Related Contractual Concerns			In Development	J. Christensen
15-02	Legal Issues Concerning General Aviation Airports' Safety and Security			In Development	J. Christensen
15-03	Legal Impacts to Airports from State Legalization of Marijuana			In Development	J. Christensen
15-04	Civil Rights Requirements at Federally Obligated Airports			In Development	J. Christensen

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

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
Task 01	Model for Improving Energy Use in U.S. Airport Facilities	Texas A&M University Energy Systems Laboratory	10/13/2006	7/31/2007	Completed - Published as Research Results Digest 2	
Task 02	Ground Access to Major Airports by Public Transportation	Matthew Coogan	8/16/2006	9/30/2007	Completed - Published as Report 4	
Task 03	Evaluation and Mitigation of Aircraft Slide Evacuation Injuries	George Washington University	10/9/2006	12/15/2007	Completed - Published as Report 2	
Task 04	Airport Safety Management Systems for Airports: Overview	MITRE Corporation	1/2/2007	11/2/2007	Completed - Published as Report 1, Volume 1	
Task 05	Quarantine Facilities for Arriving Air Travelers: Identification of Planning Needs and Costs	System Planning Corp.	3/28/2007	11/3/2007	Completed - Published as Report 5	
Task 06	Interagency-Industry Collaboration on Pandemic Planning for Aviation: A Workshop	Transportation Research Board	2/15/2007	9/15/2007	Completed - Workshop Held - Published as TRB Conference Proceedings 41	
Task 07	Current and Emerging Issues Facing the Airport Industry	Transportation Research Board	8/1/2007	1/31/2009	Completed - Published as Research Results Digest 5	
Task 08	Enhanced Modeling of Aircraft Taxiway Noise - Scoping	Wyle Laboratories, Inc.	2/14/2008	8/31/2009	Completed - Published as Web-Only Document 9, Volume 1	
Task 09	Visibility of Airfield Signs and Markings from Aircraft and Ground Vehicles				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, AAA	
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)	Haggerty	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	11/2/2010	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 - Published as Web-Only Document 46	
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 - Published as Web-Only Document 40	
Task 31	ACRP Oversight Committee Workshop on Emerging Issues	VHB	1/1/2018	9/30/2018	Completed - Published as Research Results Digest 28	
Task 32	ACRP Research Roadmap on Environmental Issues	Harris Miller Miller & Hanson Inc.	5/9/2018	11/29/2019	Completed - Published as Web-Only Document 45	
Task 33	ACRP Research Roadmap on Policy and Planning Issues	Steer Davies & Gleeve	2/12/2017	3/31/2019	Completed - Published as Web-Only Document 39	
Task 34	Business Process Review for TRB's Cooperative Research Program	Navigator, Inc.			Completed	
Task 35	Research Roadmap on Administration and Human Resources Issues	ICF Incorporated	4/2/2019	6/1/2020	Completed - Published as Web-Only Document 49	
Task 36	Research Roadmap on Safety Issues	Futron Aviation	5/1/2019	7/31/2020	Completed - Published as Web-Only Doc 50	
Task 37	Periodic Report on Transformative Technology for Airports	Barich, Inc.	6/6/2019	12/5/2021	Issue 2 Completed - Published as an update to WebResource 10	M. Greenberger
Task 38	Problem Statement Development from Thought Leader Forum, Roadmaps, and Insight Events	VHB	7/21/2020	5/19/2022		
Task 39	ACRP Environment Products Update		7/21/2020	3/20/2021	Completed - Publication for Program use	
Task 40	Primer for Airport Organizational Redesign	ICF	2/24/2021	2/24/2022	Completed - Published as Research Report 240	

No.	Title	Contractor	Start Date	End Date	Status	Staff Officer
Task 41	Toward A Touchless Airport Journey	Barich, Inc	11/11/2020	2/28/2022	Completed - Published as Research Report 241	M. Greenberger
Task 42	Quick Response: Facilitation of AOC Thought Leader Forum	Eastern Research Group	11/4/2020	4/2/2022	Completed	M. Greenberger
Task 43	Quick Response: Successful Community Integration of Advanced Air Mobility	Mead & Hunt, Inc.	3/30/2022	1/29/2023	In Development	J. Navarrete

ACRP PROJECT 11-03
Synthesis of Information Related to Airport Practices

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
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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 120		
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 - Published as Synthesis 94		
S01-18	Value, Benefits, and Limitations of Qualifications Based Selection (QBS) for Airport Project Delivery	Gransberg & Associates	June 2018	Completed - Published as Synthesis 102		
S01-19	Data Acquisition and Protocols for Risk Management	Dubuque-Snyder Aviation Consulting LLP	June 2018	Completed - Published as Synthesis 106		
S01-20	Compilation of Data on the State of FBOs	Kramer Aerotek, Inc.	June 2018	Completed - Published as Synthesis 108		
S01-21	Benefits of Arts Programs to Airports and Stakeholders	Tim Karaskiewicz	June 2019	Completed - Published as Synthesis 114		
S01-22	Last Mile in General Aviation - Courtesy Vehicles and other forms of Ground Transportation	AirportAdmin, LLC	June 2019	Completed - Published as Synthesis 111		
S01-23	Procuring Software Solutions at Airports	Critical Ops LLC	October 2020	Completed - Published as Synthesis 120	S. Austin	
S01-24	Examples of Airports Providing Facility Space for Community Use	Midwest Airport Consultants	October 2020	Completed - Published as Synthesis 116	L. Loarte	
S01-25	Airport Parking Pricing Strategies	InterVISTAS	October 2020	Completed - Published as Synthesis 118	J. Jamison	
S01-26	Landscape of the FBO Industry in 2022	KRAMER Aerotek Inc.	May 2022	Research in Progress	Lois Kramer	J. Christensen
S01-27	State of Airport Loyalty Programs	Purdue University	July 2022	Research in Progress	Yi Gao	J. Christensen

02: Environment

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
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		
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		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
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		
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 - Published as Synthesis 100		
S02-21	Practices in Airport Renewable Energy Projects	Barrett Energy Resources Group	June 2019	Completed- Published as Synthesis 110		
S02-22	Airport Programs that Reduce Landside Vehicle Carbon Emissions	InterVISTAS	April 2022	Research in Progress	Peter Mandle	J. Christensen
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		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
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		
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 - Published as Synthesis 98		
S03-15	How Airports Plan for Changing Aircraft Capacity- the Effects of Upgauging	DY Consultants	June 2017	Completed - Published as Synthesis 97		
S03-16	State Aviation Funding: Project Prioritization and Selection Processes	Mead & Hunt	December 2020	Research in Progress	C. Nelmes	J. Christensen
S03-17	Airport Centric Advanced Air Mobility Market Study	RSG	May 2022	Research in Progress	Mark Fowler	J. Christensen
S03-18	Communication, Implementation, and Outcomes of Airport Economic Impact Studies	Kimley-Horn	April 2022	Research in Progress	Regan Schnug	J. Christensen

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
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		
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 Safety 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		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
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	Completed - Published as Synthesis 107		
S04-22	Airport Surface Weather Observation Options for General Aviation Airports	Delta Airport Consultants, Inc.	June 2018	Completed - Published as Synthesis 105		
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	Completed - Published as Synthesis 115		
S04-25	Escalator Falls	Katherine Hunter Zaworski	June 2019	Completed - Published as Synthesis 109		
S04-26	Managing an Emergency or Incident Associated with a Flight Diversion at Airports			In Development	K. Duffy	
05: Security						
S05-01	Intelligent Transportation System (ITS) Sensor Technology for General Aviation			Canceled		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
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 - Published as Synthesis 103		
S06-06	Airport Workforce Programs Supporting Employee Well-being	ICF Incorporated	June 2019	Completed - Published as Synthesis 113		
S06-07	Evolution of Airport Work Models and Strategies	DPrather Aviation Solutions	April 2022	Research in Progress	Daniel Prather	J. Christensen
07: Design						
S07-01	Impacts of Aging Travelers on Airports	Corgan Associates, Inc.	February 2013	Completed - Published as Synthesis 51		
S07-02	Communication Strategies for Airport Passenger Access and Mobility	Indiana University	June 2018	Completed - Published as Synthesis 101		
S07-03	Airfield Apron/Ramp Paint Markings	Garver		Research in Progress	M. Rottinghaus	J. Christensen
08: Construction						
S08-01	Airport Terminal Facility Activation Techniques	Arup	March 2009	Completed - Published as Synthesis 20		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
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 - Published as Synthesis 96		
S09-09	Automated Pavement Condition Survey Practices at Airports	Woolpert, Inc	December 2020	Research in Progress	M. Brynick	J. Christensen
S09-10	Airport Turf and Vegetation Management Practices	DPrather Aviation Solutions		In Development	Daniel Prather	J. Christensen
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
S10-03	Impact of Airport Deicing Products on Aircraft and Airfield Infrastructure	Montana State University, Western Transportation Institute	March 2007	Completed - Published as Synthesis 6		
S10-04	Airport Energy Efficiency and Cost Reduction	Miller Dunwiddie Architecture, Inc.	March 2009	Completed - Published as Synthesis 21		
S10-05	Ramp Safety Practices	Landry Consultants, LLC	May 2010	Completed - Published as Synthesis 29		
S10-06	Investigating Safety Impacts of Energy Technologies on Airports and Aviation	Harris Miller Miller & Hanson, Inc.	May 2010	Completed - Published as Synthesis 28		
S10-07	Expediting Aircraft Recovery at Airports	Prather Airport Solutions	May 2011	Completed - Published as Synthesis 38		
S10-08	Conducting Aeronautical Special Events at Airports	Prather Airport Solutions	February 2012	Completed - Published as Synthesis 41		
S10-09	Airport Wildlife Population Management	Savannah River Ecological Laboratory	February 2012	Completed - Published as Synthesis 39		
S10-10	Habitat Management to Deter Wildlife at Airports	Mississippi State University	March 2013	Completed - Published as Synthesis 52		
S10-11	Electric Vehicle Charging Stations at Airport Parking Facilities	Leigh Fisher	March 2013	Completed - Published as Synthesis 54		
S10-12	Airport Response to Special Events	KRAMER aerotek, Inc.	February 2013	Completed - Published as Synthesis 57		
S10-13	Overview of Airport Fueling System Operations	Stephan Quilty	May 2014	Completed - Published as Synthesis 63		
S10-14	Issues Related to Accommodating Animals Traveling through Airports	Smith-Woolwine Associates, Inc.	May 2014	Completed - Published as Synthesis 64		
S10-15	Evaluating Airport Performance with the Integration of UAS	Dprather Aviation Solutions LLC	June 2018	Completed - Published as Synthesis 104		

No.	Title	Topic Consultant	Start Date	Status	FAA Liaisons	Staff Officer
S10-16	Airport Operations Training at Small Airports	Dprather Aviation Solutions, LLC	June 2019	Completed - Published as Synthesis 112		
S10-17	Agricultural Operations on Airport Grounds	AirportAdmin, LLC	October 2020	Completed - Published as Synthesis 117		
S10-18	Improving Native and Honey Bee Foraging on Airports	VHB	October 2020	Completed - Published as Synthesis 119	J. Weller	
S10-19	Airport Landside Operations Data and Collection Methods	InterVISTAS	September 2022	Research in Progress	Gavin Duncan	J. Christensen
S10-20	Identifying Military Resources and Strategies to Improve Civilian Airport Resiliency	Critical Ops LLC		In Development		J. Christensen



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

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