MEMORANDUM

TO:        DISTRIBUTION

FROM:  Michael R. Salamone
        Manager, Airport Cooperative Research Program
        Transportation Research Board

SUBJECT:  Project Panel Nominations for the FY2017 Airport Cooperative
          Research Program

        Immediate Action Requested

July 31, 2016

The purpose of this announcement is to solicit nominations for individuals to serve on oversight panels for recently selected FY2017 Airport Cooperative Research Program (ACRP) research projects.

The ACRP is an applied, contract research program with the objective of developing near-term solutions to issues facing airport-operating agencies. The ACRP undertakes research and other technical activities in a variety of airport-related areas, including operations, design, construction, legal, engineering, maintenance, human resources, administration, policy, planning, environment, and safety. The ACRP is sponsored by the Federal Aviation Administration (FAA) and managed by the National Academies of Sciences, Engineering, and Medicine, acting through the Transportation Research Board (TRB), in coordination with Airport Consultants Council, Airports Council International—North America, American Association of Airport Executives, National Association of State Aviation Officials, and Airlines for America. The program is governed by the ACRP Oversight Committee (AOC), which is comprised of airport-industry representatives appointed by the Secretary of the U.S. Department of Transportation.

The AOC met on July 21, 2016, and selected ACRP research projects for FY2017. Descriptions of the new research projects are attached. We will be forming a panel for each of these projects. We are asking you to nominate yourself or individuals for specific projects with expertise directly relevant to the research proposed, and we would particularly welcome your help in identifying women and minority candidates. Your nominations would be appreciated as soon as possible, but no later than September 21, 2016, so that we can move the program forward in a timely manner.

Self-nominations may be processed through the MyACRP portal at http://www.trb.org/ACRP/Portal.aspx.
To ensure proper consideration of all nominations, we need information on each nominee's affiliation, title, address, approximate age, and, most importantly, professional qualifications related to the particular project. A current resume is necessary to determine relevant knowledge and experience. TRB and its Airport Cooperative Research Program (ACRP) recognize the value that diversity of experience, perspectives, and technical expertise add to the research results we produce.

When forming project panels ACRP balances functional disciplines (that is, specific areas of knowledge and experience) with organizational affiliation and audience characteristics to assemble a group of practitioners who have relevant views on a particular research topic. To further broaden diversity of experience, ACRP also seeks to diversify gender and ethnic characteristics as well as other socio-demographic aspects, such as geographic representation, formal education, management level, and length of professional career.

ACRP's goal is to develop the best products possible--products that are objective and credible and that significantly advance the state of knowledge or practice. Our experience shows that these results are best attained with guidance from panels of subject-matter experts, who bring diverse perspectives and life experiences to bear on any given topic and who are able to gauge the effectiveness of proposed research approaches and to successfully monitor the research.

We request that you provide certain ethnic and gender information in support of our goal. Self-reporting is voluntary.

Communication to determine an individual's interest and availability in serving will be made from this office only after we have matched available expertise (e.g., knowledge and experience as presented in the resume) with that required by the nature of the project.

Generally, panels for the new research projects are scheduled to meet starting in November of each year. Panel members are prohibited from submitting or participating in preparation of proposals on projects under their jurisdiction. They serve on the panels without compensation, but are reimbursed for travel and subsistence expenses. Travel insurance is provided at no cost to the members. In many cases, only two meetings are held in the life of a project, and these normally occur in Washington, D.C. The first meeting is to develop a project statement that is used to solicit proposals; the second meeting is to select a research organization from among those submitting proposals. Other meetings may be dictated by project circumstances; however, they are few and usually at least a year apart. Participation on each panel will number approximately eight. Panels operate under the guidance of ACRP staff and a permanent chair. There is usually liaison representation from the FAA, TRB, and relevant industry associations; the ACRP staff serves as the secretariat.

Thank you for your interest in the ACRP. If you have any questions or need additional information, please feel free to contact me at 202/334-1268.

Attachment
Use this form only when a resume is not submitted. A resume is preferred.

Nomination for ACRP Project Number: ______________________

NOMINEE: ________________________________________________

First Name | Middle Name | Last Name

Employer: ________________________________________________

Current Job Title: _________________________________________

Address: _________________________________________________

Phone #: __________________ Fax #: __________________ Email: __________

Years at Current Position: __________ Years of Experience Relevant to this ACRP Project: __________

Education:

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Professional Licenses: ______________________________________

Fields of Special Knowledge or Interest (e.g., operations, planning, vehicle engineering):

__________________________________________________________

__________________________________________________________

Comments: ______________________________________________

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__________________________________________________________

Please see reverse side...
ACRP Panel Nomination Form

Optional Information on Nominee

Please check one:  □ Male  □ Female  Date of Birth: _____________

Ethnicity (please check one):

(A) American Indian or Alaskan Native; origin in any of the original peoples of North America.

(B) Black; origin in any of the black racial groups.

(H) Hispanic, Mexican, Puerto Rican, Central or South American, or other Spanish culture or origin, regardless of race.

(P) Asian or Pacific Islander; origin in any of the original peoples of the Far East, Southeast Asia, or the Pacific Islands. Includes China, Japan, Korea, the Philippine Islands, Samoa, and the Indian subcontinent.

(W) White; origin in any of the original peoples of Europe, North Africa, or the Middle East.

(2) Two or more races (not Hispanic or Latino); all persons who identify with more than one of the above five races

Name of Nominator: __________________________________________

Address: ___________________________________________________

________________________________________________________________

Please return to:  Michael R. Salamone, Manager
                 Airport Cooperative Research Program
                 Transportation Research Board
                 The National Academies of Sciences, Engineering and Medicine
                 500 Fifth Street, NW
                 Washington, D.C.  20001

                 or

                 EMAIL: ACRP@nas.edu
The Airport Cooperative Research Program (ACRP) is a contract research program with the objective of developing near-term, practical solutions to problems facing airport-operating agencies. Program oversight and governance are provided by representatives of airport operating agencies and others appointed to the ACRP Oversight Committee (AOC) by the Secretary of Transportation.

The ACRP is sponsored by the Federal Aviation Administration (FAA) and managed by the National Academies of Sciences, Engineering, and Medicine, through the Transportation Research Board (TRB), in coordination with American Association of Airport Executives, Airport Consultants Council, Airports Council International-North America, National Association of State Aviation Officials, and Airlines for America.

The AOC met on July 21, 2016, and selected projects for the Fiscal Year 2017 program. The purpose of this announcement is to inform the airport industry and research community of these new projects.

The ACRP undertakes research and other technical activities in response to the needs of airport operators on issues involving administration, environment, legal, policy, planning, safety, human resources, design, construction, maintenance, and operations at airports.

This announcement contains excerpts from original problem statements, along with scoping guidance from the AOC to introduce the selected projects to the airport industry and research community. With the exception of ACRP Project 03-42 and 09-16, detailed project statements (e.g., requests for proposals) formally soliciting research proposals are expected to be released starting in November 2016.

For Project 03-42 and Project 09-16 an expedited selection process will be used as described below:

- Request for qualifications posted—mid-August (anticipated)
- Qualification submittal due-date—end of September (anticipated)
- Invitation to shortlisted proposers to submit a detailed research approach—end of October (anticipated)
- Detailed research approach due-date—mid-November (anticipated)
- Contractor selection—mid-December (anticipated)

Address inquiries to:

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Transportation Research Board  
The National Academies of Sciences, Engineering, and Medicine  
500 Fifth Street NW  
Washington, DC 20001  
202/334-1268  
msalamone@nas.edu

Authors of problem statements that were submitted for the FY 2017 cycle may see the disposition of their submittal along with review comments collected from industry practitioners and the AOC by going to: [http://www.trb.org/ACRP/ACRPProjects.aspx](http://www.trb.org/ACRP/ACRPProjects.aspx) and selecting the index for FY 2017 problem statements.

Authors of unselected problem statements are encouraged to resubmit their problem statement for the next program cycle.
Airport Cooperative Research Program
Projects in the Fiscal Year 2017 Program

All ACRP project statements will be available only on the World Wide Web. Each project statement will be announced by e-mail. An instruction to register for e-mail notification of Requests for Proposals is available at [http://www.trb.org/acrp](http://www.trb.org/acrp). RFPs will be posted at the same Internet address when they are active.

Proposals should evidence strong capabilities gained through extensive, successful experiences. Any research agency interested in submitting a proposal should first make a frank and thorough self-appraisal to determine whether or not it possesses the capability and experience necessary to ensure successful completion of the project. The specifications for preparing proposals are set forth in a brochure, *Information and Instructions for Preparing Proposals*, available at the website referenced above. Proposals will be rejected if they are not prepared in strict conformance with the section entitled, “Instructions for Preparing and Submitting Proposals.”

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Summary of Approved Research Projects

■ Project 02-76
_Evaluating the Environmental Benefits of Electric Air Conditioning and Power at Gates_

Research Field: Environment
Allocation: $300,000

Airport-related emissions are an increasing global and local air quality concern as air travel increases and airports are challenged to reduce their environmental impacts. One means of reducing the emissions associated with aircraft auxiliary power units and diesel ground power units is the use of electric pre-conditioned air and ground power converter units. Through the Voluntary Airport Low Emissions Program, the FAA encourages their installation at airports in nonattainment areas, yet many airports do not have the expertise and guidance to determine if these options would be appropriate at their facilities.

The objective of this research is to provide guidance to airports that seek to incorporate gate electrification systems. The guidance should address key factors, such as climate, ground power technologies, and cost.

■ Project 02-77
_Design and Use of a Green Revolving Fund at Airports_

Research Field: Environment
Allocation: $350,000

While there are several potential sources for funding airport sustainability projects (capital budget, utility rebates and subsidies, and competitive grants such as FAA’s VALE program), these sources each have challenges in terms of what they can be spent on and overall funding availability. Energy performance contracting requires extensive and complex procurement support and may not be viable for small projects. Moreover, after an action is completed, there may be limited ability to measure the cost savings from the project. Few airports have implemented a formalized process to evaluate whether or not to pursue a utility cost reduction activity based on its projected return on investment, and without tracking savings; organizations cannot clearly see the financial and environmental benefits of projects. A green revolving fund tailored to airports could address these challenges by creating a transparent, centralized process for airports to capture and track the financial benefits of resource conservation projects, and then leverage the savings into flexible, self-financing for more green projects.

The objective of this research is to develop a toolkit for airports to establish a green revolving fund as a new and efficient method to fund sustainability projects and to create an effective performance tracking mechanism.

■ Project 02-78
_Handbook for Airports Evaluating Climate Resilience Through Benefit Cost Analysis_

Research Field: Environment
Allocation: $450,000

There is an increasing emphasis among transportation infrastructure providers to ensure that new capital investments and improvements are resilient to impacts from climate change and extreme weather events. However, the benefits of resilient infrastructure accrue throughout the lifetime of an asset and most typically are measured as potential losses avoided, rather than (for example) revenue increases. Benefit-cost analysis (BCA) is a useful method for balancing gradually accrued, unconventional, and risk-dependent benefits with the upfront financial costs of adaptation investments. If appropriately applied, a BCA can help airports better understand and demonstrate the tradeoffs of investing in climate adaptation measures in the context of deep uncertainty. While many BCA models and tools are available, airports have significant and unique challenges to conducting a climate-risk enhanced BCA, including diversity of funding and financing mechanisms and specific climate-related risks facing a given facility.

The objective of this research is to develop a handbook for airport industry practitioners who wish to use a BCA approach to evaluate investments in climate adaptation and resilience.
**Project 02-79**  
*AEDT Noise Model Improvements to Account for Terrain and Man-made Structures*

Research Field: Environment  
Allocation: $500,000

Several ACRP projects and other research have produced results to enhance the predictive accuracy of the FAA’s AEDT model, including improvements to its modeling of general aviation aircraft, nonstandard approach and departure profiles, and aircraft activity during low power settings. Another key issue that would enhance AEDT’s accuracy would be improving the modeling of terrain and manmade structures. These features can impact the noise level experienced by people near airports, often either reducing noise impacts (through shielding) or increasing noise impacts (by reflection).

The objectives of this research are to develop modeling improvements that would better account for terrain and manmade structures in AEDT and to provide guidance to help airport industry practitioners determine when accounting for terrain and manmade structures is warranted.

**Project 02-80**  
*Quantifying Emissions Reductions at Airports from the Use of Alternative Jet Fuel*

Research Field: Environment  
Allocation: $500,000

*ACRP Web-Only Document 13: Alternative Fuels as a Means to Reduce PM2.5 Emissions at Airports,* published in 2012, explored the potential benefits of using alternative fuels for aircraft and ground service equipment to reduce PM2.5 emissions. This research indicated the greatest benefit would stem from using alternative jet fuels in aircraft, and recommended further research in that area. Interest in the potential benefits of alternative jet fuels continues to increase, and now there is a desire by airports and air quality regulators to explore other emissions benefits (e.g., hazardous air pollutants, NOx, SOx, ozone); however, these benefits are not well understood. Since the publication of *ACRP Web-Only Document 13,* new data and analytical techniques are available to further the understanding of potential emissions reductions at airports from the use of alternative jet fuels.

The objective of this research is to update and expand the contents of *ACRP Web-Only Document 13,* focusing on the emissions reduction benefits of alternative jet fuels.

**Project 02-81**  
*Commercial Space Transportation Noise Measurements*

Research Field: Environment  
Allocation: $600,000

A number of airports wish to support the growing demand for commercial space operations and therefore are seeking launch site operator licenses from the FAA. As these airports develop to become dual-use sites, they will need to conduct environmental analysis, including quantifying the potential noise impacts from space operations. ACRP Project 02-66, *Commercial Space Operations Noise and Sonic Boom Modeling and Analysis,* is developing a noise model compatible with the FAA’s AEDT. A critical factor in the model’s validation and ultimate predictive accuracy is a robust database of rocket/engine/motor noise data for commercial space launch operations, yet current noise data for these activities are lacking.

The objective of this research is to design and perform a noise measurement campaign of commercial space transportation activity to build a high-fidelity dataset to help validate the ACRP Project 02-66 noise model and enhance its predictive accuracy.

**Project 03-42**  
*Integrating UAS into Airports*

Research Field: Policy and Planning  
Allocation: $1,000,000

Activity from unmanned aircraft systems (UAS) continues to grow for both recreational and non-recreational uses. Most common recreational uses are by hobbyists for photography, racing, and sport. Non-recreational uses include law enforcement, emergency response, media coverage, delivery services, surveying, and utility inspection. Many airport operators see the potential benefits of using UAS at airports for inspections, wildlife hazard management, security management, and emergency response to increase efficiency and reduce cost. But the rapid increase in UAS activity, the many stakeholders employing the technology and the
evolving regulatory landscape also have resulted in airports facing new challenges as they strive to provide users, tenants, and customers with a safe, secure, and predictable operating environment. Airports need guidance, tools, and other resources to effectively address UAS issues and integrate UAS into their day-to-day operations and planning.

This research may result in one or more projects and multiple objectives, which may include: (1) development of a UAS research roadmap for ACRP that identifies high-priority issues, needs, and high-value research deliverables most relevant and useful to airports; (2) research to produce deliverables with the highest priority, i.e., those with the greatest value and usefulness within the available budget, such as guidebooks, manuals, reports, tools, templates, etc.; and (3) design an effective means of dissemination and implementation for the airport industry such as public engagement material, training curricula, webinars, videos, etc.

Note: This project will be using the expedited selection process described on page 1.

- **Project 03-43**
  **Integrating Airport Access Planning with the Metropolitan Surface Transportation Plan**

  Research Field: Policy and Planning  
  Allocation: $500,000

Urban commercial service airports, metropolitan transportation planning organizations (MTPOs), and local land-use/transportation planning agencies all have independent and inter-related planning processes bound by legal and policy requirements to ensure compatibility. Increasing congestion has the potential to limit a region’s global competitiveness, and shrinking transportation resources dictate that all modes work cooperatively to solve joint transportation challenges in the most effective and efficient manner.

While significant efforts have been made to improve modal planning coordination, it would appear that little success has been achieved toward understanding and incorporating adopted airport master plans into the MTPO surface transportation planning process. Today, both modal planning processes appear to operate independently, with little if any cross utilization of technical planning data to support the plan outcomes of other, complementary travel modes. Both aviation and surface modes are undergoing major upgrades to their planning processes in response to legislative mandates to hasten the project delivery process, reduce urban congestion, improve economic resilience, and increase intermodal compatibility.

Airport master planning guidelines have placed greater emphasis on passenger convenience, ground access, and access to airport facilities. Facility planning for airport terminal curbside, parking, and on-site circulation is required to be coordinated with planning efforts for the off-site interconnected regional surface transportation network to ensure compatibility. Given these emerging demands, it is important that airports work cooperatively with their MTPO partners to define a more collaborative planning process. This process would provide for an exchange of relevant existing modal data from the airport for use by the MTPO to more accurately represent the airport surface trip generation characteristics, improve off-site airport access, and develop a more compatible surface transportation intermodal plan.

The objective of this research, building on previous work throughout the Cooperative Research Programs, is to define a better procedure to ensure compatible planning outcomes for urban airports and their MTPO surface transportation planning partners.

- **Project 03-44**
  **Best Practices in Building Air Service Through Incentive Programs**

  Research Field: Policy and Planning  
  Allocation: $400,000

Growing air service is a near-constant goal of municipal planners and airport operators. Dating back to the inception of municipal airports in the 1920s, air service was linked to the economic health of a city. Despite the critical urban and regional economic role of airports, the tools to increase air traffic in an airport’s toolbox are limited. While small airports are eligible for federally funded airline route subsidy programs such as Essential Air Service and Small Community Air Service Development Grants, airports classified as large and medium hubs generally have relied on their one tool to build traffic: airport expansions. In 1999 and again in 2010, the FAA published initial and revised guidance documents on the FAA’s policy on the use of airport revenue and the design of airline incentive programs. In these guidance documents, the FAA
authorized and provided guidance to airports looking to use non-aeronautical airport revenue or other non-airport municipal monies to incentivize air carriers to launch new services at their airports.

In general, incentives offered can be one or a suite of possible options, including load factor guarantees (or revenue guarantees), reduced or waived fees levied on airlines for use of the airport (typically the fees airports charge airlines on a per-flight basis for use of the airfield termed landing fees and use of the terminal termed facility fees), and guaranteed marketing support for the new service. An additional potential result of implementing incentive programs might be an increased ability of airports to influence the possibility of increasing or improving airport connectivity, both direct and indirect. A measure of the effects of improved connectivity is the potential for enhancing economic benefits associated with expanding levels of air service. Incentive programs might offer the opportunity for reducing risks of expanding new air travel routes.

The objective of this research is to collect data related to active and recently initiated air service incentive programs including the number of flights brought in under these incentive programs, the airlines and the destinations of flights, and if these flights were retained; and to document best practices for the design and deployment of air service incentive programs to build new, high-impact, sustainable air service at small, medium, and large hub airports.

■ Project 03-45
Collecting and Sharing Airport Safety and Operational Data

Research Field: Policy and Planning
Allocation: $400,000

Airports face increasingly complex and interconnected operational environments. Changes from planned and unplanned origins can have a profound impact on airport services, efficiency, and safety. To improve management of such a complex system, research often explores data collection and sharing among airport and aviation stakeholders. The intent is generally to reduce organizational silos, improve common situational awareness among stakeholders, and promote the airport as a system of systems. This effort is led by collaborative decision making, safety management systems, and other safety data reporting initiatives. Airports need a quantitative, data-driven method or process to define and communicate how the airport operates for all stakeholders. Research is needed to describe a process, procedures, and methods for collecting and sharing airport operational and safety data for all stakeholders. This will help airport management make timely and effective decisions for improving airport safety and operations, and for dealing with planned and unplanned airport changes. It will also improve situational awareness among stakeholders and will support an organizational culture that recognizes all safety considerations.

The objective of this research is to develop a set of procedures and an overall methodology for identifying, collecting, and sharing airport safety and operational data with internal and external stakeholders.

■ Project 04-21
Alternative Methods of ADA Compliance for Airport Emergency Communications

Research Field: Safety
Allocation: $400,000

Emergency situations often place demands on airports to effectively communicate with people who may not speak English or have a disability. Airports of all sizes and types, but particularly Part 139 airports, need ready-to-use guidance, electronic solutions, and practical models for making all their emergency communications fully ADA-compliant. Many smaller airports lack the resources to build accommodations into their public communications systems. Airports also need model language for crisis/emergency communications plans and practical solutions to accommodate passengers who do not speak English or who have disabilities. Airport emergency responders, PIOs, managers, and stakeholders can benefit from ready-to-insert modules to assist these special populations in emergencies. This would include such things as social media scripts in languages other than English and provision for non-visual messaging and websites that could be used in crisis/emergency communications plans. Given the fast-evolving importance and usefulness of websites and social media, improving ADA compliance is essential.

The objective of this research is to improve the ability of airports to communicate during emergencies with all passengers despite communication difficulties and to improve ADA
compliance through use of websites and social media.

■ Project 04-22
_Evaluating the Effectiveness of Hazard Zoning at General Aviation Airports_

Research Field:  Safety  
Allocation:  $350,000

Airports manage assets and risk under various programs, with many tied to either operating budgets or capital budgets. In recent years, airports have been developing integrated systems to manage operational and capital expenses together to gain efficiencies. Severe weather and emergency planning is usually a distinct function within the airport, and risk factors accounted for during emergency planning are not tied to asset management or capital planning. Importantly, costs associated with damages or disruptions from weather-related events that are below thresholds for requesting federal aid are rarely captured and tracked by airports or relevant emergency management departments. Effective integration of management systems can reduce the impacts sustained during specific events as well as establish a cogent risk identification and quantification process to help reduce ongoing costs and service disruptions associated with severe weather and climate change. Currently, however, there is no guide for incorporating climate and severe weather risks into asset management or capital planning processes at plans. Research is needed to help airports understand how climate risks add uncertainty to maintenance and capital budgets, and how this exposure can be mitigated and addressed through changes to airport asset management and capital planning.

The objective of this research is to identify the potential benefits from collaborative partnering in construction and develop guidance for airports.

■ Project 09-15
_Building Information Modeling: Airport Facility Management and Assessing Return on Investment_

Research Field:  Maintenance  
Allocation:  $750,000

Building information modeling (BIM) offers tools that allow airport decision makers to understand all the components of airport facilities, including location and attributes, to minimize the total cost of owning and operating airport facilities. BIM is an emerging technology just beginning to be used at airports, however there is no guidance for airports in its use and implementation.

This research may result in one or more projects and multiple objectives, which may include a compilation of previous ACRP research on BIM, prioritizing BIM issues for further research, and research to produce new deliverables with the highest priority, i.e., those with the greatest value and usefulness to the industry within the available budget.

■ Project 09-16
_Best Practices for Airport Obstruction Management_

Research Field:  Maintenance  
Allocation:  $300,000

Airports are required to protect surfaces described in FAR Part 77 and Part 139. Airports also monitor and protect flight procedures surfaces described in Order 8260.3 (TERPS) because impact to these procedures would result in a quantifiable change to airport performance (e.g., higher approach minimums). By contrast, air carriers are required to evaluate obstructions based on Part 121 or Part 135 and Advisory Circular 120-91, which requires the use of
an obstacle accountability area (OAA), unique to each air carrier. The OAA does not typically coincide with any of the surfaces protected by airports. Air carriers are required to use the “best and most accurate available obstacle data for a particular time at the time of analysis.” These data sources do not require the approval of the FAA. Airports do provide obstruction data to the FAA which is made available to airlines through various database and publications. However, there is no clear or comprehensive way of reconciling the various data sources.

The objective of this project is to develop best practices for airport obstruction evaluation and management.

*Note: This project will be using the expedited selection process described on page 1.*

- **Project 09-17**  
  *Collecting and Using Pavement Condition Index Data in Airport Decisions*

Research Field: Maintenance  
Allocation: $250,000

The collection of pavement condition data and the reporting of pavement condition index (PCI) are time-consuming and thus expensive. The data are used in a number of applications, including determining maintenance and repair. Such obstacles as aircraft operations may limit the ability to collect the data.

The objective of this research is to identify best practices in collecting pavement distresses for use in the PCI.