The Vision 100—Century of Aviation Reauthorization Act established the Airport Cooperative Research Program (ACRP) and the ACRP was reauthorized in the FAA Modernization and Reform Act of 2012. The ACRP undertakes research and other technical activities in response to the needs of airport operators on various airport issues involving administration, environment, legal, policy, planning, safety, human resources, design, construction, maintenance, and operations at airports.

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

The ACRP Oversight Committee (AOC), the governing board for the program, met on July 20 and 21, 2014, and selected projects for the Fiscal Year 2015 program. The purpose of this announcement is to inform the airport industry and research community of these projects.

This announcement contains excerpts from original problem statements, along with guidance from the AOC to introduce the selected projects to the airport industry and research community. Detailed project statements (e.g., requests for proposals) formally soliciting research proposals for these projects are expected to be released starting in November 2014.

ACRP project statements are available only on the World Wide Web. Each project statement will be announced by e-mail. A form to register for e-mail notification of project statements is available at ACRP’s website, http://www.trb.org/acrp. Research project statements will be posted at the same Internet address when they are active.

The ACRP is an applied, contract research program with the objective of developing near-term solutions to problems facing airport-operating agencies. 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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Project numbers are hyperlinked to that project’s webpage on www.TRB.org/ACRP.
Summary of Approved Research Projects

■ Project 02-60
*Managing Perfluorocarbon Impacts at Airports*

Research Field: Environment  
Allocation: $480,000

Aqueous film forming foams (AFFF) have been used for extinguishing fires and firefighting training at military and commercial airports for decades. The use of AFFF resulted in the release of PerFlourinated Organic Surfactants (PFOS), the most commonly known perfluorocarbon (PFC), into the environment. Fluorinated surfactants are known to be extremely persistent in the natural environment and pose human and ecological health risks. Recognizing that the regulatory community has cautiously and deliberately been developing applicable criteria and corresponding policies to address legacy environmental impacts related to this emerging contaminant of concern, airports have been pursuing guidance on how to manage their liabilities, understanding that regulatory action could potentially lead to expensive assessment and remediation programs. Research is needed to help airports establish best management practices in their day-to-day operations, environmental assessment and sampling protocols, and site management strategies for PFOS compounds.

The objective of this research is to provide airport managers with a best management practices and strategies document for addressing perfluorinated compounds at their respective facility. The guidance document will address legacy impacts associated with PFCs released into the environment (i.e., soil, groundwater, sediment, and surface water) and operational considerations with ongoing use of PFC-laden material and residual PFC impacts in airport infrastructure.

■ Project 02-61
*Airport Stormwater Management: Compilation, Update, and Training Materials*

Research Field: Environment  
Allocation: $450,000

Handling and treating stormwater is a significant and costly issue for airports. Moreover, it is highly technical and subject to national and state policies and regulations. Since its inception, ACRP has conducted a considerable amount of research in airport stormwater management, delving into planning guidelines and practices, design, monitoring and testing, treatment, and data interpretation. Each of these projects was conducted separately, providing value to a targeted audience. The objective of this research is to consolidate ACRP research results related to stormwater management, exploring alternative ways to present the material, identifying apparent gaps in knowledge and practice, and developing training materials based upon ACRP results for practitioners.

■ Project 02-62
*Incorporating Green Infrastructure for Stormwater Management at Airports*

Research Field: Environment  
Allocation: $350,000

Airport stormwater has traditionally been managed with “gray” infrastructure which uses curbs, inlets, and pipes to move water offsite as quickly as possible with little, if any, water quality treatment. Yet moving water by pipes does not allow the water to infiltrate the ground, decreasing the opportunity for local watersheds to maintain healthy water levels. Furthermore, piping often sends large, inconsistent amounts of polluted water into a water body all at one time causing habitat damage, scouring of waterways, and occasional downstream flooding. As a result, the U.S. EPA is promoting green stormwater techniques, systems, and processes that mimic natural hydrological systems by filtering and infiltrating stormwater. Examples include bioretention, stormwater planters, bioswales, porous paving and pavers, engineered soils, and drainage wells. In addition, municipalities are moving toward green infrastructure to reduce capital costs and improve water quality while reducing flooding and water treatment costs. Research is needed to identify green infrastructure techniques for managing stormwater that are consistent with the unique operational aspects of airports.

The objective of this research is to develop a guidebook to help airports identify and implement viable green infrastructure techniques to supplement or replace traditional stormwater management methods on airport property.
Project 02-63
Improving Ground Access Vehicle Emissions Modeling

Research Field: Environment
Allocation: $300,000

Emissions from ground access vehicles are modeled in the FAA’s Emissions and Dispersion Modeling System (EDMS), soon to be incorporated into the Aviation Environmental Design Tool (AEDT), through the use of the U.S. EPA’s MOBILE-series vehicle emission factor model, soon to be replaced with the Motor Vehicle Emissions Simulator (MOVES). Yet there is no guidance for collecting airport ground access vehicle activity data and how best to model it. In many cases, vehicle counts are obtained from airport surveillance systems, toll booth records, traffic mechanisms, etc. In other cases, surveys count vehicles on airport roads and approximate speeds using speed guns, timers, and/or car-chasing. In addition, it is not clear how refined the simulated roadway network should be for an airport air quality assessment study. Depending on the type of study, roadways can be modeled just up to the airport property boundaries or further out. This is important since ground access vehicle emissions can exceed aircraft emissions at some airports. In addition, for those cases when ground access vehicle counts and speeds are surveyed, they must be scaled to represent the project year. This forecasting (as well as back-casting, depending on the study requirements) needs to be consistent to ensure airports can measure their progress on emissions reduction initiatives. Research is needed to provide guidance for consistently and accurately modeling ground access vehicle emissions.

The objective of this research is to develop a guidebook to help airport industry practitioners model ground access vehicle emissions. The guidebook should address how to incorporate the various types of ground access vehicle activities at airports, identify and select sources of ground access vehicle activity data, determine the level of roadway network detail that is appropriate for different studies, and forecast and back-cast vehicle activities.

Project 02-64
Guidance and Best Practices for Strategically Incorporating Pervious Pavement

Research Field: Environment
Allocation: $200,000

Airports are unique as the suitability of the type of pavement used has to be carefully considered taking into account the loads and traffic it will support and manage. The vast majority of airport surfaces areas are covered by impervious pavement. Pavement design and constructions standards often consider the use of pervious pavement as an afterthought rather than a supplemental solution to managing stormwater and reducing the effect of heat islands. Airports are faced with the challenge of maintaining non-porous pavements since impervious pavements are also prone to damage due to frequent traffic and extreme weather conditions. Impervious pavements do not allow ground aeration, nor do they allow air circulation which has a direct impact on the energy used to heat and cool surrounding buildings year round. Various options are available to incorporate pervious pavements adjacent to pervious pavements to assist in controlling and directing stormwater runoff. These options should be researched, explored and presented to airport practitioners for consideration and implementation into construction projects requiring paved surfaces. There is a need to conduct research on this topic to present environmental impacts as well as cost benefits associated with the strategic pairing of impervious and pervious pavement.

The objectives of this research are to (1) develop guidelines for incorporating pervious pavement for environmental benefits and to (2) educate airport practitioners on advantages from the use of porous pavement.

Project 02-65
Tracking Aviation Alternative Fuel

Research Field: Environment
Allocation: $250,000

The aviation industry strongly supports the introduction of aviation alternative fuels that have the potential to provide environmental, economic, and security of supply benefits compared to conventional fuels. United Airlines is expected to start taking delivery of alternative fuel at Los Angeles International airport (LAX) in 2014 and other similar commercial arrangements are expected in the near future.

As alternative fuels for aircraft-use start to enter the supply chain, there is the need to keep track of those molecules for technical (e.g., quality control, fuel...
efficiency) and commercial (e.g., contract verification, marketing) reasons. A logical point to institute fuel tracking mechanisms is at the airport because this is where the supply chain for both conventional and alternative fuels converge before the fuel gets loaded into the airplane. Airports can play a key role to incentivize the commercialization of alternative fuels by helping to facilitate some of the logistics associated with the introduction of these fuels, in particular fuel tracking.

The objective of this research is to develop a guidebook to help airports, airlines, and other decision-makers along the supply chain identify the most convenient mechanism for keeping track of alternative fuel coming into the airport.

■ Project 02-66
*Commercial Spaceport Noise and Sonic Boom*

Research Field: Environment
Allocation: $600,000

Commercial space flight activity is expected to increase substantially in the next few years. Many of those operations, particularly “space tourist” flights, will be from dual use airport-spaceport facilities. Noise and sonic booms will be generated as part of those operations and will require prediction as part of NEPA and FAR Part 150 studies. While the prediction of noise from aircraft operations is well-specified by the use of FAA’s Integrated Noise Model (INM), transitioning to the Aviation Environmental Design Tool (AEDT), there is currently no standard tool for spacecraft noise and sonic boom modeling. Although some spacecraft activities can be modeled by INM/AEDT, many aspects cannot (e.g., noise from vertical launches, sonic booms). The result is that often proprietary programs, each having unique modeling methods and limited availability, must be used. There is therefore a need to develop a model (or suite of models) for commercial space noise and sonic boom analysis that is compatible with AEDT to allow for potential acceptance as the industry standard. The noise and sonic boom models should be consistent with each other, using the same vehicle and trajectory data inputs, much as AEDT uses common databases for noise and air quality analysis.

The objective of this research is to develop a set of noise and sonic boom modeling methods suitable for environmental analysis of commercial space operations at airport/spaceport facilities. The methods must represent best current practice, be compatible with AEDT, and be in a form that can be made readily available to airport industry practitioners.

■ Project 02-67
*Air Quality Management: Toolbox, Research Compilation, Gap Analysis, and Training Materials*

Research Field: Environment
Allocation: $400,000

Airport air quality management is highly complex and technical. Many tools are used in understanding, analyzing, mitigating, and communicating the implications of air travel to environmental health and well-being. FAA, its PARTNER organizations, ACRP, and ICAO are the primary providers of air quality management tools. Since its inception, ACRP has conducted a considerable amount of research into airport air quality management, facilitating research into emissions measurement, inventories, predictive models, data interpretation, management planning, best practices, guidelines and guidebooks. Airport industry practitioners and students would greatly benefit from a catalog of existing tools, URLs to each tool, user manuals, and guidance on the appropriate use of each tool. There is also a need to identify gaps in understanding that may be filled by additional research, including what tools may benefit from updates.

The objective of this research is to develop a toolbox for airport air quality practitioners by: (1) categorizing and compiling existing air quality analysis and mitigation tools in one location and (2) identifying gaps in the air quality toolbox. The toolbox would be designed to serve as the resource for all air quality analysts, including consultants, airport staff, trainees and aviation management students.

■ Project 03-36
*Influence of Demographic Factors on Air Passenger Demand*

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

Airports use long-term air passenger forecasts as a key input for preparing airport development plans, assessing expected future revenue streams, and estimating environmental impacts. Passenger
forecasts are typically prepared using models that correlate activity to aggregate socioeconomic forecasts. However, there is emerging concern that large-scale socioeconomic changes, such as an aging population, increased immigration, wealth concentration, the geographic redistribution of the population, and changing views on the use of disposable income, may not be well captured in current forecast methods. Research is needed to identify and summarize long-term socioeconomic trends, understand their potential impact on airport passenger demand, and identify methods for incorporating them into airport passenger activity forecasts.

The objective of this research is to help airport-industry practitioners understand the potential impact that long-term socioeconomic trends could have on airport passenger demand and develop methods to improve forecasting accuracy by incorporating these trends into the forecasting process.

■ Project 03-37

*Using GIS for Local Government Management of Airspace Obstructions and Airport Land Use Compatibility*

Research Field: Policy and Planning
Allocation: $350,000

Airspace obstructions and incompatible land uses are potential challenges to the safe and efficient operation of airports. Managing these challenges is particularly difficult since it requires a thorough understanding of complex, three-dimensional airspace surfaces and the involvement of multiple stakeholders, including local governments, who often do not have the required level of expertise or resources. While the FAA and the airport industry have assisted local governments with these challenges, this assistance is often limited to “one-time” events, such as providing model height and hazard zoning ordinances, avigation easements, and FAR Part 150 noise studies. The acquisition and use of geographic information systems (GIS) as a planning tool in the last decade by even small jurisdictions provides an opportunity to stakeholders for enhancing their airspace and airport-compatible land use planning/zoning evaluation capabilities, providing more automated, accurate, and timely results. Yet there is no guidance to help stakeholders take advantage of GIS as they address airspace and land use compatibility issues in their day-to-day activities.

The objective of this research is to develop guidance and best practices for using GIS for airspace obstruction and airport land use compatibility evaluation and planning at the local government level, particularly in support of aviation-related zoning ordinances and easements. Special emphasis would be placed on jurisdictions around smaller airports without their own GIS capabilities, and using GIS to help protect public investments in those airports. The research may result in deliverable(s) that target specific stakeholders, such as airport owners, consultants, state aviation agencies, developers, and local land use planning/zoning agencies.

■ Project 03-38

*Understanding the Benefits and Impacts of NPIAS Obligations for Airports*

Research Field: Policy and Planning
Allocation: $150,000

Some airport managers have difficulty fully understanding the breadth and depth of obligations (i.e., airport sponsor grant assurances) placed on the airport by the FAA once a grant has been included in the NPIAS and, typically, other low-activity general aviation airports—especially those that have volunteer airport management. Other airports include non-NPIAS airports that are contemplating joining the NPIAS program. These obligations can also be confusing for new employees of commercial service airports and airport consultants. This is an issue of significant potential interest to a large target audience. This research would provide these airports, their consultants, and their communities with a guide to understanding the FAA obligations in terms that are easily understood. This topic and its local implications have historically been overwhelming and confusing for these types of airports. Surrounding communities often do not understand the “statute language,” and, as a result, continue to operate under their local rules. This approach can jeopardize the airport’s compliance with FAA obligations. This research would generate an easy-to-understand guide, formatted to include a summary page for each obligation/grant assurance, with useful resources and/or examples that can be followed with additional in-depth discussion of the obligation. Not only will this guidebook be a resource for the everyday issues that arise at airports,
but it can also be used as a teaching tool for new staff, community groups (e.g., planning or zoning boards) or user groups (airport commissions, FBOs, tenants). Because the obligations do not change much over time, this guidebook should have a long, useful shelf-life. The guidebook could be set up to accept updates or additions as new obligations and grant assurances are issued.

The objective of this research is to produce a guidebook in an easy-to-read layout and language that addresses the understanding and implications of adhering to FAA grant obligations (e.g., airport sponsor grant assurances).

**Project 03-39**  
*Realistic Use of Economically Integrated Business Park Development for Airports*

Research Field: Policy and Planning  
Allocation: $375,000

The development of industrial and commercial business parks adjacent to airports has historically been viewed as a "compatible land use development" exercise, not an airport revenue generation exercise. Nationally, insufficient attention has been given to the issue of developing airport colocated business parks so as to increase airport revenues. In 1969 there were about 6,700 public use airports in the U.S. Today, there are about 5,000; and, since 1969 without exception, the number of public use airports has declined annually. ACRP Report 44, "A Guidebook for the Preservation of Public Use Airports," identified 16 characteristics that help to identify why some airports prosper and others struggle or fail. Many of these 16 characteristics are grounded in economic factors. In short, simple business failures are a major reason(s) why some airports succeed while others fail. ACRP Report 44 principally focused on smaller to mid-sized general aviation airports and primarily on aviation-generated and related revenues. Public use airports that rely solely on aviation-generated and related revenues have a potentially narrow and undiversified revenue stream, making them particularly susceptible to cyclical market downturns.

The objective of this research is to generate a comprehensive Guidebook for developing (or redeveloping) airport and airport adjacent commercial and industrial business parks so that they can directly contribute to overall airport revenues. This is, in general, a compatible land use zoning research effort that seeks to integrate the airport with the co-sited business park. Implementing this approach could both increase and diversify airport revenues, making airports more financially secure while less prone to damaging cyclical changes in the aviation industry.

**Project 04-19**  
*Airport Emergency Planning Template: NIMS – Incident Command System Compliance*

Research Field: Safety  
Allocation: $300,000

The Federal Aviation Administration released Advisory Circular AC 150/5200-31C Airport Emergency Plan (AEP), where under 31C (change 2), airports had until June 30, 2011 to have all of the AEP’s updated to be fully compliant with the National Incident Management System (NIMS)/Incident Command System (ICS). Some 14 CFR Par 139 airports have had difficulty getting their AEP’s compliant with 31C and approved by the FAA. Standardization among AEPs is difficult and could be improved while making AEPs NIMS/ICS compliant in accordance with 31C.

There are software packages in the emergency management field that are used to help stakeholders write NIMS/ICS-compliant emergency operations plans. Similar software could be developed to assist in the writing of AEPs to be compliant with 31C.

The objective of this research is to develop an AEP software template that is NIMS/ICS compliant.

**Project 06-03**  
*Airports and Family Assistance After an Aviation Accident*

Research Field: Human Resources  
Allocation: $300,000

Airports dedicate substantial resources preparing and training for potential aviation incidents and accidents at or near their facilities. While the immediate focus of every airport after an incident or accident is on the preservation of life and the protection of property, these events have complex ramifications for the airport in terms of the meeting the needs of both survivors and the families of victims, coordinating dissemination of information about the incident, and basic facility management. In an accident resulting in a loss of life, domestic and foreign airlines are
federally mandated, under the Aviation Disaster Family Assistance Act of 1996 (49 USC § 41113; 49 USC § 41313), to immediately implement specific requirements as part of a formally developed, comprehensive Family Assistance Plan. However, implementation of these plans, which can involve dispatching specially trained “go teams” and the mobilization of external resources, can take hours to achieve. As a result, airport operators almost always serve as the immediate “first responders” that need to deal with not only with emergency response, but also family assistance, survivor assistance, media relations and crowd control. Research is needed to help airports develop best practices and establish procedures and training around the human-response to an aviation accident, including complementing the federally mandated airline response. Providing these practices and procedures will help airports respond in a more comprehensive way to an aviation accident, ultimately benefiting the victims, family members and others impacted by the accident.

The objective of this research is to identify how airports can first-respond best when families need assistance, including training and implementation guides.

■ Project 06-04
Assessing, Building, and Retaining Workforce Capacity in the Aviation Industry

Research Field: Human Resources
Allocation: $250,000

Workforce development in the aviation industry has historically been limited in scope. The industry lacks focus on strategic long-term workforce planning and workforce development needs. In ACRP Synthesis 18, “Aviation Workforce Development Practices” airport operators and stakeholders noted that the entry-level workforce is typically hired with little aviation-specific education or experience. This study also found that coordinated workforce planning and development efforts that integrate best practices in recruitment, retention, on-the-job training, and succession planning rarely exist at airports. Whether the result of funding constraints, risk management efforts, retirement of seasoned industry talent, new technologies, or variability in airport types; the absence of strategic planning for attracting, educating, and developing the future airport workforce leaves the aviation industry in a precarious position. Thus, the industry needs to take action to prepare for the challenges of dramatic workforce changes, growing demand for services, rapid technological development, and increasing costs across the industry.

The objective of this research is to identify and begin an evaluation of current and future airport workforce capacity issues; evaluate existing education, training, and other workforce development resources; and outline effective strategies to meet future workforce capacity requirements.

■ Project 07-14
Acoustical Design to Improve Intelligibility of Airport Terminal PA Systems

Research Field: Design
Allocation: $350,000

Audible announcements in airport terminals are often hard to understand. When airport terminals are active, the intelligibility of emergency communication systems declines, meaning that people with average hearing abilities find it hard to understand the spoken message, due to the increase in background noise. Understanding those messages is even harder for the hearing impaired, and also for people whom English is not their native language. Poor intelligibility in communications systems degrades the performance of fire alarms, public address and emergency announcements which are critical in airport terminals.

In order to improve the acoustics of existing airport terminals, and develop guidelines for future terminal design, research on existing acoustic conditions is needed and should include how the architectural design and design of audio systems within terminals affect intelligibility of emergency and non-emergency announcements. The research would collect data regarding sound distribution systems, terminal finishes and background noise levels throughout various occupied areas of each airport terminal. Based on the results of the research design guidelines relating to acoustics, noise and intelligibility could be developed for future terminal design. Acoustical design guidelines would include design best practices for reducing reverberation, noise control and sound system design. Results of the research would also include options for enhancing intelligibility in existing airport terminals. Research on acoustics and intelligibility in airport terminals could lead to some design changes which ultimately enhance passenger safety.
The objective of this research is to summarize the existing acoustic design guidelines commonly used when airport terminals are constructed, identify their shortcomings, and identify ways to improve the acoustical design guidelines used in airport terminals.

**Project 07-15**  
*Airport Terminal Design: Compilation, Update, and Training Materials*

Research Field: Design  
Allocation: $300,000

Since its inception in 2005, ACRP has conducted research related to Airport Terminal Design, including Innovations for Airport Terminal Facilities, A Guidebook for Airport Passenger Terminal Planning and Design and Spreadsheet Models, Apron Planning and Design, Airport Signage and Wayfinding, Terminal Renewal vs Replacement options, and Restroom Planning and Design, among others.

In order to facilitate its use, there is a need to consolidate and catalogue this related research for ease of reference and use among airport practitioners and stakeholders that find this research useful. It is important to consider an update of the existing publications if determined they are currently outdated.

The objective of this research is to review, organize, consolidate and catalogue with an index existing research related to airport terminal design to assist airport practitioners in an easy to use reference document and determine if updates are needed. Consideration should include other terminal-related standards, e.g., IATA.

**Project 9-13**  
*Incorporating Life Cycle Cost Considerations in Airport Facilities Procurement*

Research Field: Maintenance  
Allocation: $350,000

Life cycle analysis can reduce the total cost of ownership by specifying facility components and design features in procurement documents that will minimize the combined capital and operating costs, although the initial cost of individual items might not be the least expensive available commercial product. The private sector often uses life cycle concepts during procurement that minimize total costs throughout the life of a facility.

Airports, as public sector owners, are often constrained by the procurement regulations of their local jurisdictions to procuring facilities strictly on a lowest-cost bid process, even although the combined capital and operating costs over the lifetime of the facility may not be minimized. Lowest initial cost HVAC, elevators, escalators, building control systems and other components may not represent the optimal life cycle costs.

Airports need guidance on techniques to incorporate life cycle concepts in facility procurements, while complying with traditional public bidding requirements. While individual jurisdictions’ specific procurement regulations will vary, common techniques and analytic tools to assist airport owners in producing bid documents that maximize life cycle cost concepts can provide valuable guidance in facilities design and procurement.

The objective of this research is to provide guidance to airports on incorporating life cycle costs into their procurement process.

**Project 10-24**  
*Guidance for Establishing Airport Apron Ramp Towers*

Research Field: Operations  
Allocation: $400,000

As a matter of policy, with few exceptions, FAA has moved the geographic area in which it provides air traffic control services to airplanes away from airport gates and ramps toward the taxiway system. At the same time, there is increasing focus on both ramp safety and airport surface movement collaborative decision making (A-CDM). Control over the movement of airplanes on ramps is maintained by several different systems: airline ramp towers controlling movements on their own ramps; airline ramp towers controlling movements on their own, and other airlines’ ramps; ramp towers staffed by airport personnel; and ramp towers operated by third parties under contract to airports. Increasingly, airports are considering providing ramp tower services to their airline tenants.

Given the many issues involved in any consideration of establishing a ramp tower operation by airports,
guidance is needed to explain the various options with explanation of the pros and cons, operational requirements, organizational models, and financial considerations involved in such a decision.

The objective of this research is to provide airports with guidance in the factors involved in establishing a ramp tower. This guidance should describe the operational, organizational, staffing, training, and financial options for establishing a ramp tower. It should also provide a review of the various ramp tower organizational models used at U.S. airports and the advantages and drawbacks of each model.

**Project 10-25**
*Use of Campus Notification and Lockdown Systems at Airports*

Research Field: Operations  
Allocation: $200,000

Amber alert systems, dynamic messaging systems, and location-based SMS-messaging are technologies many public safety organizations are employing to communicate a wide range of information to local travelers. Many airports are evaluating or integrating similar technologies into their facilities and communications operations to increase safety, public awareness, and even parking availability. Many airports struggle with visitor interaction using public address speakers that are often difficult to understand even under the best of conditions, not factoring in normal airport noise. Whether it is gate change information, left behind luggage at security, lost children, last call for boarding, or potential safety warnings, airports have a responsibility for informing the general public/patrons that are currently in the facility.

Current information regarding large-scale public notification systems is primarily only available directly from vendors. Many airport managers have purchased and installed notification and lockdown systems as part of security upgrades in the last decade. These facilities can be surveyed and analyzed for pros and cons, installation costs, return on investment analysis, and public feedback. Understanding the available technologies from an impact on operations, to human reactions, to integration into existing networks and security protocols can be a daunting challenge for many airport authorities.

The objective of this research is to develop guidance on airport notification and lockdown systems and integrating that into the emergency plan.