ACRP Problem Statement No. 14-10-05  Recommended Allocation: --

**Critical Infrastructure Protection Needs at Airports**

**ACRP Staff Comments:** The proposed research is already covered in ACRP Project 03-18, Operational and Business Continuity Planning for Prolonged Airport Disruptions.

**TRB Aviation Group Committees Comments:** AVIATION SECURITY AND EMERGENCY MANAGEMENT: Not supported. The “Research Proposed” focuses on providing guidance to airports regarding critical infrastructure needs, especially the liability of airport management in responding to the more than 140 preparedness standards already existing in the US for airport general liability and the personal liability of airport executives.

**Review Panel Comments:** Not recommended.—The proposed research is being done under ACRP 03-18, Operational and Business Continuity Planning for Prolonged Airport Disruptions.
1. **Problem Statement Title**

   Critical Infrastructure Protection Needs at Airports

2. **Background**

   As critical infrastructure facilities, airports are mandated to adequately prepare for natural disasters, terrorism, civil disobedience, employee violence, systems failures, pandemics, cyber attacks, and other forms of human interference due to their location, geography, and criticality. Although referenced in AC 150-5200-31C, effective disaster preparedness continues to elude most airports due to the complexities and magnitude of the preparedness requirements, and of the cost. Finding a viable solution for this current deficiency is of particular importance for long-term, consistent operations of airport. Over 6,000 preparedness tasks have now been identified by DHS for as critical infrastructure facilities. The documentation and evaluation of this substantial infrastructure preparedness list represents a significant challenge to airport management, and may provide valuable information about infrastructure protection that should be updated, strengthened, or replaced.

   Properly functioning infrastructure is essential for the continuation of normal operations, but is particularly critical during emergency situations where an airport is centrally involved or may need to play a large role in the response to the emergency. Infrastructure breakdowns related to fuel distribution equipment can be disruptive to normal operations and emergency response efforts. An airport without properly functioning infrastructure is vulnerable to significant operational and safety interruptions.

   While the focus primarily remains with Airport preparedness performance, another related looming issue remains the potential liability for airport directors, boards of directors, and emergency preparedness executives and managers for adequately responding to the more than 140 preparedness standards already established in the United States. With increasing frequency, juries are awarding injured parties sums greater than conventional city or county limits of liability. Because of the number of potential victims, airports would be well advised to research these liability limits as well, and also research the personal liability exposure to senior airport management and directors for Sarbanes-Oxley professional performance liability for not proactively pursuing this compliance issue. Significant liability insurance rate reductions may be an additional significant benefit from this kind of proactive activity.

   A review of preparedness best practices by airports may provide useful information about progress in the area of identifying, inventorying and characterizing critical infrastructure preparedness tasks, best practices, areas for improvement, and potential strategies for efficient infrastructure management. The
research should also include information about the design of these critical infrastructure components which are better suited for disaster preparedness, for both new facilities and retrofitting existing facilities. Along with physical infrastructure, cyber security is a major consideration of an airport’s critical infrastructure. Research findings should include recommendations for cost effective inventory and assessment methods. Additionally, the research should provide airports with the information to provide a justification for developing an infrastructure management system, the essential data required, and the benefits of the information. An evaluation of the impacts of equipment or facility damage should also be addressed by the research.

3. **Objective**
The objective of this research is to provide guidance for airports about the critical infrastructure needs.

4. **Proposed Tasks**
The research plan should include the following tasks:

- Review of current practices and performance related to the identification and characterization of critical infrastructure protection efforts at airports both before and since the issuance of AC 150-5200-31C, including a review of jurisdictional plans that may influence airport practices
- Evaluation of current practices to identify preparedness best practices that are transferable to other airports, common areas of improvement, and strategies for efficient infrastructure management
- Evaluation of current practices for airports of various sizes and types
- Assessment of critical infrastructure components that are designed for disaster preparedness (including retrofits and new construction)
- Evaluation of the impacts of practices, equipment, systems, or facility damage
- Recommendations for implementing cost effective inventory and assessment methods, including tools that can be implemented by airports, such as checklists
- Justification for developing an infrastructure management system, including answers to the following questions:
  - What data elements are essential?
  - What are the benefits of the information?

5. **Estimated Funding**
This project is expected to require $300,000 to complete the stated research objective.

6. **Estimated Research Duration**
This research project is expected to require 18 months to complete the stated research objective.

7. **Related Research**
Existing work in this topic area exists at many airports across the US that have various types of infrastructure plans. However, comprehensive infrastructure plans that address all critical elements are believed to be generally sparse or non-existent.
8. **Process Used to Develop the Problem Statement**
This problem statement was developed from a focus group webinar session held on February 8, 2013. Participants in the focus group session included members of the TRB Aviation Security and Emergency Management Committee (AV090). The session was hosted by the Institute for Transportation Research and Education (ITRE).

9. **Person Submitting Problem Statement and Date**
Name: Daniel Findley, PhD, PE
Title: Senior Research Associate, Institute for Transportation Research and Education
Contact: Daniel_Findley@ncsu.edu, 919-515-8564
Submission Date: March 15, 2013

Name: Duane Habeck
Title: President and CEO, Integrated Decision Engineering Analysis, Inc.
Contact: DHabeck@ExperienceIDEA.com
Submission Date: March 15, 2013