## FINDINGS & RECOMMENDATIONS: SUBCOMMITTEE ON AIRPORTS FALL 2015 MEETING

The Subcommittee met on August 25 and 26 in the Director's Conference Room at the FAA William J. Hughes Technical Center (the Tech Center) in Atlantic City with representatives from the Airport Technologies Research Branch as well as select representatives from the FAA Office of Airports. During the meeting the Subcommittee reviewed the ongoing progress Branch staff have made on the varied airport safety, planning, design, and pavement projects within the Branch's research portfolio and reviewed the Branch's proposed FY2016-2017 budget and discussed potential additional work for FY2018.

The following section summarizes the Subcommittee's findings and recommendations.

## **FINDINGS & RECOMMENDATIONS**

**Finding 1:** The Subcommittee believes that the Airport Technology Research Program is on a solid footing and supports the allocations of program funds for FY2016 and 2017 presented by Branch staff. The Subcommittee also believes that FY2018 project priorities are appropriate, excepting the minor comments in contained in subsequent findings and recommendations contained in this report. The Subcommittee applauds the Branch staff's efforts classify its research projects on the basis of subject-matter based research program areas (RPAs) rather than solely on the basis of individual research projects. The Subcommittee believes that this classification will improve our effectiveness in reviewing research program accomplishments and identifying future funding needs.

**Recommendation 1:** The Subcommittee recommends that Branch staff expedite their efforts to classify projects by RPA and provide budget and spending reports using these classifications well in advance of the Subcommittee's Spring 2016 meeting so we have ample time for review and comment.

**Finding 2:** In the review of the long life pavement design project, information as to the variability of engineering properties of materials that meet FAA specifications. It has been known that local materials—especially aggregates—can meet FAA specifications but may result in a wide range of resulting performance. As the system moves towards more engineering based designs understanding this variability and accounting for it in the design process is critical in providing consistent long-life pavements.

**Recommendation 2:** A study should be initiated that looks into the variability of asphalt and concrete mix designs that meet FAA specifications. Special attention should be paid to a range of local materials—especially aggregates—that meet national specifications that are known to have marginal performance.

**Finding 3:** As we noted in our Spring 2015 report, the Subcommittee appreciates that the proof of concept work associated with the low cost ground surveillance systems (LCGSS), particularly the optical surveillance system that has been pilot tested at Seattle-Tacoma International Airport. However, given the ongoing development of alternative surface surveillance systems, continuing reductions in the costs associated with automated dependent surveillance-broadcast (ADS-B) transponders, and the oncoming 2020 ADS-B equipage deadline, the Subcommittee is interested in understanding the role LCGSS are likely to play at airports if and when they are available for implementation before significant additional research into these systems is conducted. We also recognize the need for this research to be coordinated with other research programs within the FAA—particularly the air traffic management and safety research programs—as well as with NASA, which is engaged in a significant airport surface management research effort of its own.

**Recommendation 3:** The Subcommittee reiterates our recommendation that Branch staff develop a concept of operations that defines the roles and applications of the LCGSS in the National Air Transportation System given other surface surveillance programs and technology deployments that are underway, particularly surface surveillance systems that rely on ADS-B technology. The concept of operations should consider what unique capabilities or deployment opportunities would exist for LCGSS as well as those capabilities that are likely be duplicated by ADS-B based surface surveillance systems. We also strongly recommend increased collaboration among the FAA's research programs and with NASA regarding both surface surveillance and airport surface management.

**Finding 4**: The Subcommittee agrees that research is needed to develop rational overload criteria for flexible pavements (e.g., asphalt concrete pavements). The current ICAO overload criteria for flexible pavements limits overload to 10 percent above the reported pavement classification number (PCN); for rigid pavements (e.g., Portland cement concrete), the limit is 5 percent above the reported PCN. The research shows that the 10 percent flexible pavement overload may be overly conservative for thin flexible pavements. In addition, many general aviation airfields with rigid pavements have performed well and exceeded their design lives while supporting loads that far exceed the rigid pavement design strength. This suggests that the ICAO 5 percent rigid pavement overload criteria are may also be overly conservative as well. **Recommendation 4**: The Subcommittee recommends the overload project be expanded to reevaluate the 5 percent overload criteria for rigid pavements and 10 percent overload criteria for flexible pavements.