Managing Performance and Construction Risk
Testing Runway Subgrade Using Falling Weight Deflectometer: Case History

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Abstract: The performance of runway pavements depends on the complex interaction of profile geometry, material properties, induced aircraft load characteristics, environmental conditions and annual departures. Each of these elements of the problem contain significant uncertainties. This presentation presents a recent case history from a large hub airport in southeast Michigan that illustrates how these uncertainties and a corresponding mismatch in stakeholder expectations can create additional construction risk when a robust program of material property verification is implemented. In this case history, falling weight deflectometer (FWD) testing of a partially demolished runway pavement base was used to investigate the effects of pavement demolition on underling layers and to quantify the stiffness of the remaining pavement layer properties. These data allow a number of insights valuable for communicating the construction and performance risks to project stakeholders. Suggestions for communicating these risks during pavement planning, analysis, design, and construction are presented.

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****** Everyone is invited – refreshments will be served ******

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