



PROJECT BRIEF

Honolulu Airport Pavement Instrumentation

PROJECT PROFILE

CLIENT:
Kaikor Construction, Inc.

University of Hawaii

Hawaii Department of
Transportation

LOCATION:
Honolulu, HI

VALUE:

- University of Hawaii used the data for student research and continues to do so for the new few years

SERVICES PROVIDED:

- Training to University of Hawaii in system operation and data management
- Development of instrumentation specification for HIDOT
- Provided Geocomp pavement sensors
- Design and installation of remote, solar powered data collection system with triggered camera

“Geocomp worked with Hawaii DOT to develop project-specific instrumentation specifications, which outlined specific type pavement sensors, data collection requirements, and a triggered camera to capture aircraft wheel configurations to correlate with measured data. ”



INSTALLATION OF GEOTECHNICAL INSTRUMENTS & DATA MANAGEMENT COLLECTION

Geocomp worked with the Hawaii DOT to develop project-specific instrumentation specifications, which outlined specific type pavement sensors, data collection requirements, and a triggered camera to capture aircraft wheel configurations to correlate with the measured data. The monitoring system implemented by Geocomp included: 56 Geocomp Asphalt Strain Gages to measure pavement strains under aircraft wheel loads in existing cold-planed surface and new surface layer; Two Geocomp temperature trees to measure temperature gradients in existing cold-planed surface and new surface layer; Stand-alone, solar powered, remotely accessed data acquisition system that can be triggered for data collection based on sensor response or airplane presence; Triggered, low-light camera system to document type of aircraft and wheel configuration to correlate with measured data.



BACKGROUND

The Honolulu Airport underwent a major construction effort to resurface existing taxiways. As part of that effort, the resurfacing method of coldplaning (the controlled removal of the surface layer of existing pavement) was evaluated. This required the removal of existing flexible (asphalt) pavement to a depth of three inches and replacement with a new asphalt wearing course surface layer. The Hawaii Department of Transportation (DOT) wanted to evaluate the performance of this method by measuring structural response to airplane loading and various aircraft wheel configurations.