# ACQUISITION/ACCEPTANCE, INSTALLATION, AND OPERATION OF FDOT'S ACCELERATED PAVEMENT TESTING VEHICLE

## PROBLEM STATEMENT

During the last five years, the FDOT has expended an enormous amount of time and effort in requesting and ultimately acquiring a state-of-the-art accelerated pavement-testing device (APT). FDOT personnel located the various manufacturers of these unique devices and carried out the initial effort. After careful consideration, the decision was made to purchase a unit from OMC Ltd. in South Africa. This unit, termed a Heavy Vehicle Simulator (HVS), is marketed in the U.S. by Dynatest and without a doubt is the most sophisticated and modern testing device of its kind. The ultimate objective of its usage is that it will provide Florida with an invaluable tool for assessing pavement design and long-term performance.

## OBJECTIVES

The primary focus of this project was to acquire and install a Heavy Vehicle Simulator (HVS) at the FDOT Accelerated Pavement Testing Facility.

## RESULTS

The FDOT's HVS was successfully acquired, set up, and enhanced with several accessories. In addition to the HVS, a data acquisition system from National Instruments was ordered and installed. To supplement this DAQ equipment, two wireless serial links were also purchased to allow a more versatile environment for the testing system. During the course of the testing, a laser profiler and heating system were also added to the HVS to improve its testing capabilities.

## BENEFITS

The general benefit of the acquisition of this piece of equipment is that it will allow FDOT to perform a variety of experiments on pavements, to test durability, service life, mix design, and so forth. Test results will allow FDOT to make better-informed, more cost-effective decisions regarding pavement design and construction. In addition, during the installation and operational testing phase of this project, a method was developed for the production of thermocouples used for temperature-monitoring experiments. This method can be used to cost-effectively produce thermocouples in-house. Further, it has the added benefit of allowing researchers to rapidly produce units on-site, a capability that can prevent potential delays when a contractor is placing asphalt for the test tracks, since asphalt placement is virtually simultaneous with thermocouple installation.

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