

CONCLUSIONS

The project successfully demonstrated that data could be gathered at a remote site and then transferred to a central location for analysis. It was also demonstrated that different configurations of sensors could be specified from the central location.

The primary failures in the project occurred in two separate areas. The first area was in the acquisition of hardware to monitor the sensors in the pavement. The most damaging failure in this area was the inability of the hardware to separate the small change in voltage expected from the strain gauges from the background noise inherent in the system (the system is defined here as the measuring device plus the wires and sensors in the pavement). The second area was multifaceted and involved a number of mistakes in installation and equipment purchased. Some of the areas were correctable such as purchase of a 20-volt power supply for the LVDTs. Others, such as the incorrect wiring of the temperature gauges, were not correctable.

Considering the amount of time spent on this project and the large number of sensors that had either failed during installation or during the project, it would be prudent in future undertakings to spend more time in the planning stages in the selection of sensors, design of the installation, and acquisition of proven hardware.