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Using a Smartphone Software and a Regular Bicycle to Monitor Pavement Health Statuses

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Abstract: Due to the increasing number of vehicles on our roadways, a need for simple, available, fast, and accurate pavement monitoring techniques become necessary and urgent to evaluate and estimate pavement deteriorations. Also, to provide a clear indication about the health status of pavement condition and determining the type and level of pavement distresses. After that, applying appropriate maintenance techniques to keep the pavements in high-performance condition. This study focused on evaluating pavement conditions using simple and available monitoring equipment, including a smartphone application and bicycle as a test vehicle to measure pavement vibration along a road segment. Many researchers have studied pavement vibration data; the vibration data indicates the level of riding comfort and severity of surface deteriorations. This study shows that the bicycle is appropriate and capable as a unique test vehicle and the smartphone application has accurate vibration measurements to be used in pavement monitoring.