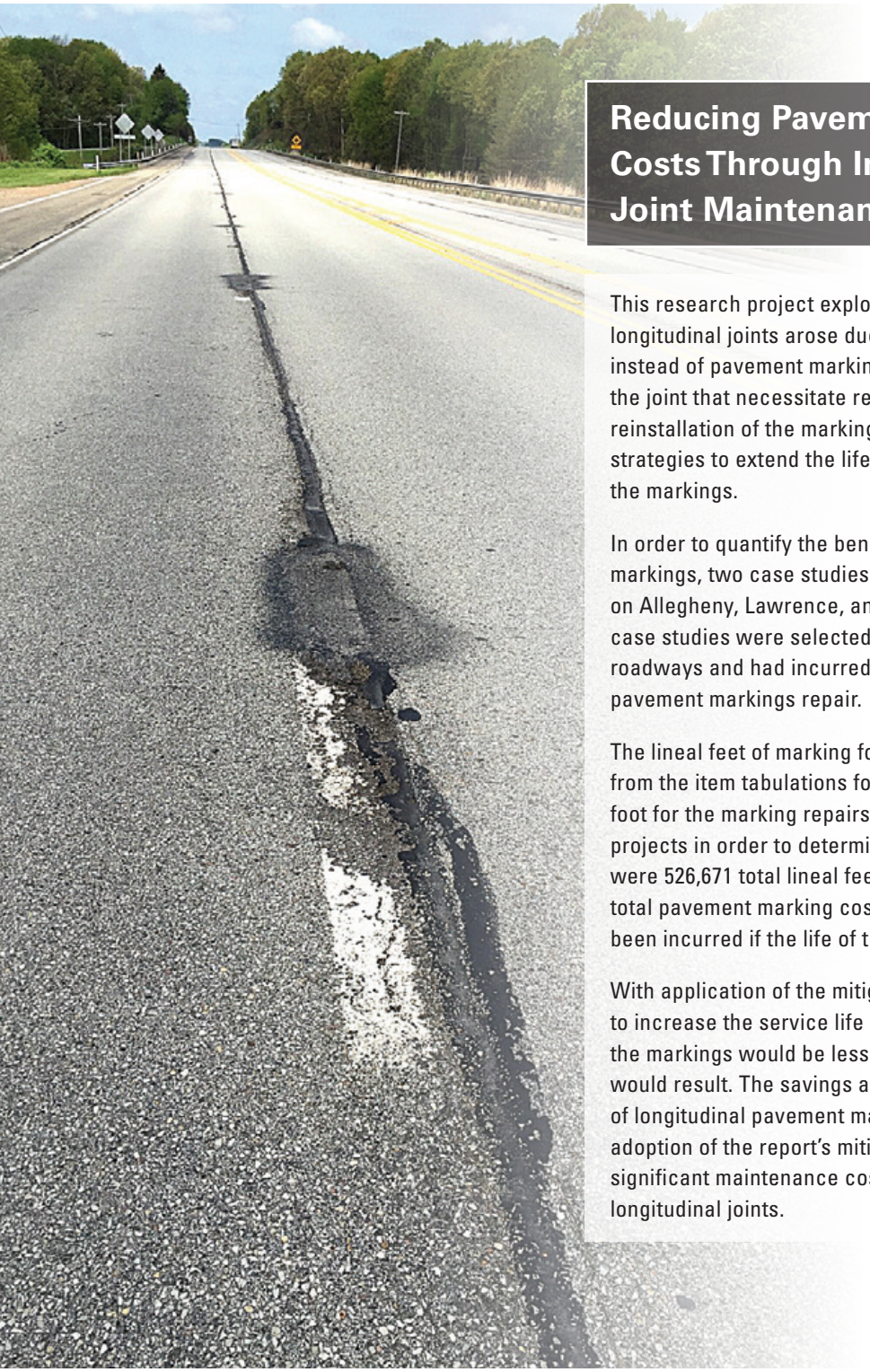
PITT | IRISE

CENTER FOR IMPACTFUL RESILIENT INFRASTRUCTURE SCIENCE & ENGINEERING

UNIVERSITY OF PITTSBURGH | SWANSON SCHOOL OF ENGINEERING



Reducing Pavement Markings Replacement Costs Through Improved Longitudinal Joint Maintenance

This research project explored whether pavement distresses along longitudinal joints arose due to the pavement markings. It was discovered instead of pavement markings creating the distress other factors impact the joint that necessitate repairs to the joint and subsequent removal and reinstallation of the markings. The project developed appropriate mitigation strategies to extend the life of longitudinal joints and preserve the life of the markings.

In order to quantify the benefits of the extended life of the pavement markings, two case studies were examined. The studies were located on Allegheny, Lawrence, and Beaver County Interstate Highways. These case studies were selected because they involved high volume, high-speed roadways and had incurred significant costs for both longitudinal joint and pavement markings repair.

The lineal feet of marking for each of the repair projects was determined from the item tabulations for each contract. The contract cost per lineal foot for the marking repairs was applied to the total lineal feet of the two projects in order to determine the cost savings. For this case study there were 526,671 total lineal feet of new pavement markings resulting in a total pavement marking cost of $718,512. These costs would not have been incurred if the life of the pavement joints had been extended.

With application of the mitigation strategies recommended in the report to increase the service life of longitudinal joints, the reapplication of the markings would be less frequent, and maintenance cost savings would result. The savings associated with less frequent reapplication of longitudinal pavement markings could be significant statewide. And adoption of the report's mitigation strategies could lead to additional significant maintenance cost savings through longer lasting roadway longitudinal joints.