NIATT Research Summary

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Development of an Acoustic Method to Collect Studded Tire Traffic Data

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Description

Travel during winter months remains particularly problematic in the Pacific Northwest due to the regular occurrence of inclement weather in the form of snow and ice during freezing and sub-freezing conditions. For travelers and commuters alike, vehicle traction in the form of studded tires serves to provide an added level of driving confidence when weather conditions deteriorate. However, when weather or roadway conditions improve as a result of above freezing temperatures and/or recurring snow removal and maintenance, recurring studded tire usage causes damage to the roadway infrastructure in the form of surface wear and rutting over time. Left unattended, this damage contributes to challenging and potentially dangerous driving conditions in the form of standing water and the increased potential for hydroplaning.

Currently, an effective data collection method of studded tire traffic on a roadway facility is lacking. Past studies of studded tire usage were estimated based on manual traffic counts on roadways, parking lot counts, or household surveys. As a result, the lack of real-world traffic volume data prevents the development of accurate roadway deterioration models to measure roadway performance and estimate infrastructure life.

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