



UNIVERSITY TRANSPORTATION CENTER RESEARCH BRIEF

PROJECT TITLE: Development of Protocol to Maintain Winter Mobility of Different Classes of Previous Concrete Pavement Based on Porosity

PRINCIPAL INVESTIGATOR: Somayeh Nassiri (WSU)

INSTITUTION: WASHINGTON STATE UNIVERSITY

ESTIMATED COMPLETION DATE: AUGUST 2019

SPONSORS: THE PACIFIC NORTHWEST TRANSPORTATION CONSORTIUM, WSU



Research Project

We will extend the scope of testing to more laboratory and field testing to include a wide range of mixtures and installations. The goal is to ensure mobility on various classes of pervious concrete pavements all-year round. The scope of work will include in-field and laboratory porosity characterization for various pervious concrete installations. Then, correlating the pores properties to ice formation potential, to predict the level of winter maintenance treatments required.



Background

Pervious concrete pavements are recommended by several US environmental agencies as a Best Management Practice for stormwater control, which has in turn increased their use for municipal applications such as streets, parking lots, bike lanes and sidewalks across the PNW. With increased application in areas with adverse winter weather in different parts of the PNW, it is critical that proper ice and snow control protocols are developed to ensure the mobility and safety of drivers and pedestrians on pervious concrete installations.

In our previous PacTrans project, we showed that pervious concrete pavement surfaces from one mixture design outperform traditional concrete pavements in terms of friction in dry, wet and iced conditions. The photo shows friction testing using the British Pendulum Testing.