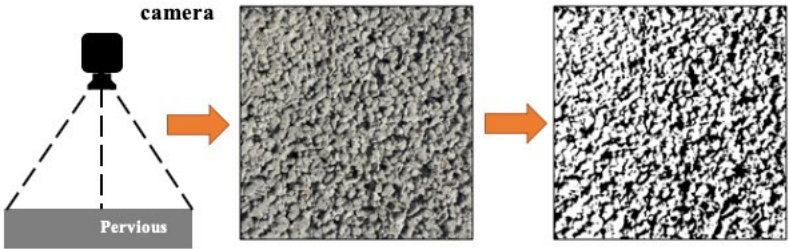


UTC Project Information	
Project Title	Development of protocol to maintain winter mobility of different classes of pervious concrete pavement based on porosity
University	Washington State University
Principal Investigator	Somayeh Nassiri
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans \$40,000 Washington State University \$40,000
Total Project Cost	\$80,000
Agency ID or Contract Number	69A3551747110
Start and End Dates	August 16, 2017 – August 15, 2019
Brief Description of Research Project	<p>In a previous PacTrans project, research showed that pervious concrete pavement surfaces from one mixture design outperform traditional concrete pavements in terms of friction in dry, wet and iced conditions.</p> <p>This project 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 will include in-field and laboratory porosity characterization for various pervious concrete installations and potential correlation with ice formation in the pores.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>Implementation of the research will be limited at the current state. The project goal was to develop a mobile application software to characterize the in-situ porosity of porous pavements by image analysis. Analysis of these images revealed that the distribution of pores along the depth were significantly different at intermediate depths than that at the top and bottom 0.5-inch depths because of compaction. Therefore, the developed surface image-based method did not provide a representative porosity value for the full PC layer. More surface imaging, in parallel with X-ray CT scans, are required to develop a correlation between the porosity of the surface layer and overall porosity. With a better understanding of the distribution of density/pores with pavement depth implementation can be achieved via the proposed mobile application software.</p>
	 <p>The diagram illustrates the image analysis process. On the left, a camera is mounted on a tripod, labeled 'camera', and is positioned above a gray rectangular area labeled 'Pervious'. Dashed lines represent the camera's field of view. An orange arrow points from the camera to a grayscale photograph of a porous pavement surface. A second orange arrow points from this photograph to a binary (black and white) image of the same surface, where the pores are represented as white shapes against a black background.</p>
<p>Impacts/Benefits of Implementation (actual, or anticipated)</p>	<p>With more testing in future projects, the proposed method has the potential to limit the required coring and destructive testing on pavements. However, as mentioned above the distribution of porosity along the pavement as a result of field compaction should be first better understood.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	