

UTC Project Information – Project 3.15	
Project Title	Nonstructural approaches to reduce sediment and pollutant runoff from transportation infrastructure in urbanized areas
University	University of Rhode Island
Principal Investigator	Dr. Vinka Oyanedel-Craver
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Funding Source(s) and Amounts Provided (by each agency or organization)	Federal: \$186,437 RIDOT: \$ 64,000 URI: \$123,696
Total Project Cost	\$374,133
Agency ID or Contract Number	69A3551847101
Start and End Dates	07/15/2021 – 09/01/2023
Brief Description of Research Project	<p>Stormwater management is a critical component of transportation infrastructure and reduces sediments and pollutants delivered to waterways. The primary goal of this proposed study is to assess the performance and cost-benefit of including enhanced street cleaning program in a stormwater management plan.</p> <p>Conventional street cleaning programs consist of once or twice a year sweeping events. In contrast, an enhanced program incorporates road-surface and catchbasin sampling results and meteorological data to determine an optimal frequency of street cleaning events. Enhanced street cleaning performance will be quantified as the mass of pollutants listed on the Total Maximum Daily Load (TMDL) such as heavy metals (e.g., zinc), nutrients (e.g., phosphorous), sediments (e.g., sand), and contaminants of emerging concerns (microplastics and Per- and polyfluoroalkyl substances–PFAS) that could be removed and compared to those reported on conventional street cleaning practices.</p> <p>Additionally, information about littering such as plastics and cigarette waste will be collected to be used in outreach and public awareness activities. Costs and benefits will be determined based on the program's cost compared to the increased water quality credits that could be obtained and the reduction of negative impacts on water bodies downstream to the hotspot area.</p>
Describe Implementation of Research Outcomes (or why not implemented)	This project is in its initial research phase. Implementation of Research outcomes will be reported upon completion of initial research.
Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	This project is in its initial research phase. Impacts and benefits of the research will be reported after the implementation phase.
Web Links	Coming soon
<ul style="list-style-type: none"> • Reports • Project website 	