National Center for Sustainable Transportation

Project Information Form

Project Title	Framework for Urban Metabolism of Hardscape Including Climate Change Considerations
University	University of California, Davis
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Funding Source(s) and Amounts Provided (by each agency or organization)	US DOT - $40,897.00
Total Project Cost	$40,897.00
Agency ID or Contract Number	DTRT13-G-UTC29 UCD-DOT-301
Start and End Dates	October 1, 2016 through September 30, 2017
Brief Description of Research Project	Urban hardscapes can be defined as the horizontal surfaces in contact with the earth. These include streets, parking areas, sidewalks, driveways, alleys, and paths. Urban metabolism (UM) is a methodology for quantifying consumption and use patterns in urban environments. It has typical.ly been applied as a method of accounting for total energy and materials inputs and outputs into cities. It can be expanded in ways that will allow more comprehensive and integrated assessment for the patterns and processes of urban systems. UM enables us to account for the energy and material flows within the urban areas helping researchers study the interactions of nature and human systems, and the environmental quality of a selected city. The purpose of this seed grant is to consult the literature and experts within the NCST association of campuses, as well as selected experts in the area of UM and to construct a conceptual framework for the UM of urban hardscapes, focused initially on material and water flows and urban heat island development. The framework will consider expected effects of climate change on heat and storm events. The framework will provide a basis for consideration of alternative pavement materials and structures.
Describe Implementation of Research Outcomes (or why not implemented) (Attach Any Photos)	

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Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links • Reports • Project website	https://ncst.ucdavis.edu/project/framework-for-urban-metabolism-of-hardscape-including-climate-change-considerations/