

# MOUNTAIN-PLAINS CONSORTIUM

PROJECT BRIEF | May 2014

## A Framework for Assessing Transportation Sustainability Rating Systems for Implementation in U.S. State Departments of Transportation

	C	D	E
7	Experience and judgment strongly favor one criteria over another		
8			
9	A criteria is strongly favored and its dominance is demonstrated in practice		
10			
11	The evidence favoring one criteria over another is of the highest possible order		
12			
13			
14	<b>CAPABILITY B</b>	<b>More Important Item</b>	<b>Degree of Importance</b>
15	Ability to employ self-assessment	B	
16	Ability to evaluate project during conceptual stage		2
17	Ability to evaluate project during design phase		3
18	Ability to evaluate project during construction phase		4
19	phase		5
20	Ability to allocate weights to criteria		6
			7
			8
			9

### the ISSUE

Given the number, variability, and specificity of transportation sustainability rating systems available, an evaluation and pairing exercise of available systems is needed to help the state DOTs select a system by determining to what extent a given system suits the state DOT preferences.

### the RESEARCH

This research presents a four-step framework which identifies the most important capabilities in a TSRS as preferred by a state DOT and then facilitates weighting of those capabilities via a well-established methodology, the analytical hierarchy process. The framework matches available capabilities of existing transportation sustainability rating systems to individual state DOT's preferences. The report presents the implementation of this framework for Colorado DOT (CDOT), South Dakota DOT (SDDOT), Utah DOT (UDOT) and Wyoming DOT (WYDOT).



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Colorado State University  
North Dakota State University  
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Utah State University  
University of Wyoming



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A Framework for  
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## the FINDINGS

The framework resulted in the identification of INVEST to be the most suitable transportation sustainability rating system for CDOT and WYDOT, GreenLITES as the most suitable transportation sustainability rating system for SDDOT; and the results for UDOT were inconclusive.

## the IMPACT

Heightened awareness of environmental issues and impacts has led to the development of "green" design and construction techniques for transportation infrastructure. Development of a sustainable transportation system should include policy making, project implementation and appraisal. As the construction industry has become more interested in sustainable development, the need to evaluate and measure the performance of projects with respect to sustainability has emerged. To meet this need, sustainability rating systems have been widely adopted by the construction industry.

The framework developed in this study provides a framework for assessing Transportation Sustainability Rating Systems for implementation in state DOTs. The framework was proven to be a viable means of determining rank of suitability according to preferred capabilities as identified by the state DOT. The results of the study are a strong indication that the methodology can assist in the assessment of Transportation Sustainability Rating Systems and with its use, a suitable Transportation Sustainability Rating System can be identified for adoption for state DOTs across the U.S.

For more information on this project, download the entire report at <http://www.ugpti.org/resources/reports/details.php?id=769>

For more information or additional copies, visit the Web site at [www.mountain-plains.org](http://www.mountain-plains.org), call (701) 231-7938 or write to Mountain-Plains Consortium, Upper Great Plains Transportation Institute, North Dakota State University, Dept. 2880, PO Box 6050, Fargo, ND 58108-6050.



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