

The Role of Weather Information in Sustainable Winter Services

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ABSTRACT

There has been growing interest in applying the principles of sustainability to the provision of winter services. For example, the Winter Services committee of PIARC (committee B-5) has made this an area of emphasis for their activities over the past five years. In spite of this interest, there has, to date, been relatively little work done on applying the principles of sustainability to transportation operations in general and to winter services operations in particular.

This is beginning to change, as for example the FHWA sustainability tools include some attempts to measure the sustainability of various operational practices, including winter maintenance. However, and perhaps inevitably given the broad scope of FHWA interests of which winter services are but a small part, the FHWA sustainability tool includes only a handful of rating questions relating to winter services. A more comprehensive review of the sustainability of winter services has been conducted based on six general areas of operations: levels of service, materials usage, equipment selection and operation, performance measurement and continuous improvement, strategic (annual) operations, and tactical (in-storm) operations. While none of these six areas include weather information in the title, it is apparent that such information is critical to sustainable winter operations. This paper will discuss how weather information can enhance and improve the sustainable nature of winter services. Further, it will show that without a comprehensive, pavement-based approach to winter storms, it is very difficult to be sustainable in winter service operations. While the importance of meteorological information to good winter service has been known for many years, it is of value to note that when new paradigms (such as sustainability) are brought into the analysis of winter services, the importance of excellent weather information remains central. Quantifying that importance in ways that show its contribution to the "triple bottom line" of sustainability will be an important task going forward.