

ISSUE: 04. WINTER SERVICE MANAGEMENT

SUB-ISSUE: Pavement condition: forecasting and measurements

Session: 06/02/2014 (14:30 - 16:00 h)

Poster: 07/02/2014 (09:00 - 11:00 h)

Room: A

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Presentation title:

DEVELOPMENT OF AN AUTOMATED ROAD SUBSURFACE FROST PROBE NETWORK FOR QUÉBEC

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Summary:

All road authorities responsible for managing a road network are facing the same challenge every year, to ensure that users in winter a safe and reliable. This is a key role and priority that directly contributes to economic development by maintaining mobility and safety on the road network. To preserve the condition of the roads during spring thaw, the Ministère des Transports du Québec (MTQ) limit loads of trucks on the road during a variable period of time depending on the severity of the previous winter. To determine this period, the frost is setting decision. The MTQ has developed in the past a network of sub-surface frost probe for manual mapping frost in Quebec. This type of probe installed in the pavement requires close the road, put signage, vehicles have impact attenuators to protect workers who need to measure the height of the glycol blue representing the frost. This task is very dangerous and requires a lot of time to manually raise the frost depth network of 90 tubes in the territory of Quebec is approximately 8.93 full-time employment for making reading and maintenance of equipment and an annual cost of \$ 226,000.00. The Ministry of Transportation of Quebec has deployed an automatic data collection road (SCDR) to instrument using a probe thermal profile of 3 meters equipped with 18 thermistors Quebec road network and eliminate statements manuals. SCDR system also allows for the collection of all road weather variables needed for winter maintenance. The presentation will describe the SCDR system put in place by the MTQ and developments made for the manufacture of the probe used.

