

Operational Highway Avalanche Forecasting Using the Infrasonic Avalanche Detection System

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Highway avalanche forecasting programs typically rely on weather and field observations to make road closure and hazard evaluations. Recently, infrasonic avalanche monitoring technology has provided another tool for highway technicians in their operational forecasting and decision making. The technology detects low frequency sound waves produced by avalanches with near real-time processing providing alarming. Such technology has been deployed on Teton Pass near Jackson Wyoming for the Wyoming Department of Transportation since 2002; and for the Utah Department of Transportation in Little Cottonwood Canyon near Salt Lake City Utah since 2006. Uniqueness in deployed sensor configurations in addition to local terrain and meteorology provide differing results from the two monitoring systems with results obtained in Little Cottonwood Canyon being superior to those obtained on Teton Pass. The systems provide information to confirm results from avalanche control work, alarming from natural avalanche events, and verification of explosive detonations. The ability to monitor avalanche activity in poor visibility and confirm avalanche control work results are powerful tools for assessing highway avalanche hazard and has changed the way these two programs operate in their mission to provide safe and efficient transportation routes.