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15. Abstract Purpose and Need North Dakota winters, due to high winds and open prairies, have a potential for drifting snow on our roadways. Proper road design can be effective in preventing snowdrifts and poor visibility. However, there are isolated areas along our highway system that have a tendency to accumulate snow and exhibit poor driving conditions. Many of these areas are due to grade separations at intersections and structures. During the 1996/97 winter season, the interstate system was forced to close on many more occasions due to blowing snow and snow accumulation than in past winters. After the snowstorms ceased, the interstate system remained closed while maintenance crews worked to open the roadways. The closures may be minimized if proper management and control of blowing snow could be attained. Snow management may be attained in these highly vulnerable areas through carefully designed living and structural snow fences. Addressing these problem areas is critical to ensure our roadways stay safe for the traveling public. Objective The objectives are to collect snow in drifts before it reaches the highway or highway structure, improve visibility by reducing the concentration of snow in the air, and reduce snow removal and highway maintenance costs. Scope The North Dakota Department of Transportation (NDDOT) had installed demonstration structural snow fence systems at four sites located on the interstate system. These four sites were problem areas due to poor visibility and snow accumulation on the roadway. One of the sites had an existing living snow fence, consisting of a young shelterbelt of Ash and Pine trees. Photo 1 shows a six feet tall structural snow fence with the living snow fence in February 1998. The structural sites and the living snow fence were evaluated to determine if snow fence systems can be utilized on a larger scale on North Dakota roadways. Summary Installation of the snow fence systems went well. The structural snow fences were in good condition but do require maintenance to keep the polymer straps tensioned and to reattach the loose brackets. The living snow fence is thriving and has grown significantly. The snow fences have shown the capability to collect snow in drifts. The structural snow fences appear to collect more snow than the living snow fences. There has not been enough snow to evaluate if the snow fences have an effect on roadway conditions. Recommendation The structural snow fence systems are recommended for use in areas that have a history of drifting snow on the roadway and have adequate land area for a properly designed structural snow fence. The living snow fences are also recommended. However, they don't appear to be as effective as the structural snow fence systems and they take some time to grow to an effective size and thickness.			
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