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12. Performing Organization Name and Address NDDOT M+R <input checked="" type="checkbox"/> North Dakota DOT NDDOT OTHER* <input type="checkbox"/> Materials and Research Division NDSU <input type="checkbox"/> 300 Airport Road UND <input type="checkbox"/> Bismarck ND 58504-6005 UGPTI <input type="checkbox"/> OTHER* <input type="checkbox"/> *see supplementary notes		13. Sponsoring Agency Name and Address North Dakota DOT Materials and Research Division 300 Airport Road Bismarck ND 58504-6005	
14. Supplementary Notes			
15. Abstract <u>Purpose and Need</u> This equipment should enable maintenance supervisors to evaluate the weather conditions at various locations. Supervisors could dispatch snow and ice removal equipment without sending an operator to check conditions on site. The Department of Transportation expects this system to reduce the incidence of ice related accidents occurring on the I-94 Red River structure. This would be accomplished by alerting maintenance forces to predicted icing conditions and by tracking and forecasting incoming weather systems. The ultimate goal is to provide safer roads for the traveling public and reduce maintenance costs. <u>Objective</u> The object of this experimental project was to install a road condition-weather monitoring system to provide data on pavement surface and atmospheric conditions. This equipment should enable maintenance supervisors to evaluate the weather conditions at various locations. Supervisors could dispatch snow and ice removal equipment without sending an operator to check conditions on site. The Department of Transportation expects this system to reduce the incidence of ice related accidents occurring on the I-94 Red River structure. This would be accomplished by alerting maintenance forces to predicted icing conditions and by tracking and forecasting incoming weather systems. The ultimate goal is to provide safer roads for the traveling public and reduce maintenance costs. <u>Scope</u> The Road Condition - Weather Monitoring System is located on Interstate I-94 in the Fargo District and covers the area of the Red River Structure. The accuracy of the forecast and accident reports was used to evaluate the project annually for 3 years. <u>Summary</u> The North Dakota Department of Transportation contracts with Surface Systems, Inc. (SSI) to receive weather forecasts twice a day at the Fargo District during the winter months. The cost for six months of service during the winter of 1995/1996 was \$2,750.00 or \$458.50 a month. For the winter of 1996/1997 the cost was \$3,270.00. The Fargo District uses the forecasts and the system to plan their daily activities along with a snow and ice control plan. The access to this data improves the ability to plan the proper action. The Fargo District has experienced many SSI system breakdowns during the past year. The system has not been very reliable at peak times. The system accuracy during the past winter was about 50%. The Fargo District pays for another service that they find more useful than the SSI service. They do not plan on contracting with SSI in the upcoming winter season. The SCAN system sensors are all located in the City of Fargo except for one, which is located west of town on Highway 38. The DOT receives data from some city-installed sensors in the city limits. It is rather hard to track an incoming storm using only two sensor locations. The Fargo District reports that the SCAN weather system has saved the Department of Transportation \$10,000 to \$15,000 over a five year period. However, this is a tough figure to estimate. No one knows how many accidents were prevented or lives saved by using this system. The cost of constructing and installing the SCAN weather system was \$131,216.26. <u>Recommendation</u> We recommended that the DOT not contract with SSI for their forecast service. We refer to the ever-increasing cost for the weather forecasting service and a decrease in system reliability. The DOT is using a less costly weather radar system that operators find easy to use and accurate. This system, along with the data from the SCAN sensors, should be used for our forecasting/monitoring program.			
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