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14. Supplementary Notes  1. Abstract  <b><u>Purpose and Need</u></b> As a northern state, North Dakota receives a significant amount of snowfall. The North Dakota Department of Transportation (NDDOT) is tasked with maintaining the roadways during snow events to allow safe travel for the public. As lanes are added to increase the capacity of roadways; there is a need to improve the effectiveness and efficiency of snow removal operations.  <b><u>Description</u></b> The Viking-Cives Midwest, Inc. TowPLOW is an option to increase the efficiency of a snow plow truck. The TowPLOW is a towable trailer and operates similar to a side wing on a snow plow truck. The mold board or snow plow is attached to the side of the trailer. The TowPLOW is hydraulically controlled. When fully deployed, it can expand the clearing width of the snow plow truck to 25 feet. The snow plow truck with TowPLOW can remove two lanes of snow. An optional tank for liquids or a hopper for granular material can be added to the TowPLOW to allow for de-icing of roadways. The addition of a TowPLOW to a snow plow truck allows it to clear more snow from the roadway than a standard snow plow truck.  <b><u>Location</u></b> One TowPLOW will be used in the Fargo District on rural and urban roads near the city of Fargo. A second TowPLOW will be used in the Bismarck District on rural and urban roads near the city of Bismarck.  <b><u>Summary</u></b> The initial cost of the TowPLOW is \$74,389 with a 17 year expected life. The Bismarck District estimated the labor and equipment cost (not including the fuel) for the regular snow removal operation is \$1,754 per snow event. They estimate the TowPLOW operation labor and equipment cost was \$782 per snow event. This results in a savings of \$972 per snow event when using the TowPLOW. Using the TowPLOW in the snow removal operation frees up three snow plow trucks to address other major routes to better meet service levels for the public. These costs are unique to Bismarck. Although different urban and rural roadways may require different equipment and labor hours than the Bismarck section, it appears the TowPLOW operation does offer a cost savings to the regular snow removal operation.  Generally speaking, the Bismarck and Fargo District comments indicate that the TowPLOW is more efficient in clearing snow, and maybe safer for the employee and the public (in terms of reduced snow fog)..			
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