Solar Powered Culvert Heat Tape System

As a northern snow state, every district within MNDOT must keep all drainage structures (culverts) open. Maintaining year-round water flow prevents freezing, which can cause water to back up and freeze onto roadways. Over the years, MNDOT has tried ice chippers, shovels, heaters, jetters, etc. but have been unsuccessful at averting this predicament. The Solar Powered Culvert Heat Tape System uses solar energy or wind produced energy to heat the tape that is placed through the center of a drainage structure. It should keep just enough water flowing through the culvert to prevent it from freezing. District 6 crews will monitor these units to see if enough energy is generated to keep the tape hot enough to allow water to flow through the culvert, eliminating the need to go out and mechanically remove the ice that forms.

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