

Project studies energy savings of direct cooling in medium-sized data centers

The goal of a recently funded CARD project, awarded to [GDS Associates](#), is to demonstrate and quantify the potential energy savings associated with installing liquid cooling systems at medium-sized data centers in Minnesota. The technology works by replacing air-cooled heat sinks on servers with a much more efficient liquid cooling strategy, which can significantly reduce the HVAC cooling load in the data center space. The coolant used is a fluid that will not damage electronic components.

In spite of how promising this technology looks for delivering large savings, one barrier is the lack of independent, third-party studies assessing savings from this technology. Other questions have to do with cost-effectiveness in mid-sized data centers and potential maintenance issues.

This project will identify three mid-sized data centers (with 4 to 10 server racks). The target will be data centers that primarily process data. Potential test sites will be presented with two possible liquid cooling options, and customers will select the option that best suits their data needs. One option, manufactured by [Ebullient Cooling](#), is a modular design that can be used to retrofit existing servers; the other, manufactured by [LiquidCool Solutions](#), is a server replacement option.

GDS will oversee site selection, installation of equipment, monitoring, assessing operation of the systems, and evaluation of energy savings and cost-effectiveness. This project is due to be completed in February 2017. For more information, contact project manager [Mark Garofano](#) or CARD program administrator [Mary Sue Lobenstein](#).