

NEW GEOTHERMAL SNOW MELT PROJECT IN KLAMATH FALLS, OR

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The Wall Street bridge and approach street leading to the front of Klamath Union High School is in the process of being replaced. The project is a joint effort by the Oregon Department of Transportation (ODOT) and the city of Klamath Falls. The replacement of the bridge and approach road will incorporate a deicing system using geothermal for the street, bridge and sidewalks. This is the second bridge project in Klamath Falls, which will utilize geothermal for snowmelting.

The geothermal heat will be provided by the city of Klamath Falls District Heating System. A separate heat exchanger has been installed in the city's heat exchanger building for the Wall Street Project, which will tap into the geothermal return water before it is injected into the ground. The heat exchanger will transfer heat to a 35% propylene glycol solution, which will be circulated in a closed loop to the approach road and bridge.

The geothermal water side of the heat exchanger will enter at about 150°F and leave at 100°F. The flow rate is 40 gpm. A 1/3-hp pump has been installed. The glycol solution side of the heat exchanger will enter at about 100°F and leave at about 130°F. A 1/2-hp pump has been installed in that side to circulate the solution.

The pipeline consists of a 4-in. high density polyethylene (HDPE) pipe when it leaves the building, then transitions into a 3-in. HDPE pipe at the approach road to the

bridge. The system has been designed for further snowmelt expansion in the area. The approach road and bridge is about 1/4 of a mile from the heat exchanger building.

The glycol solution will be pumped through the tubing in the bridge deck and approach road. The tubing is Wirsbo 5/8-in ID HePEX (a cross-linked polyethylene) which was used on the other bridge deck. The system will run continuously during the winter season.

The loop system for the bridge will be placed longitudinally with the bridge on the approach road side. The loops are attached to the reinforcing steel of the bridge by wire at approximately 8 in. on center.

