

# JOURNEY MUSEUM AND LEARNING CENTER

## HVAC SYSTEM NEEDS

**Overview** – The Journey Museum and Learning Center’s HVAC Systems are of an age of 20 plus years operationally. Many of the items listed here are the original components that were part of the Opening footprint in 1997. Years of normal and continuous use can be seen as the largest culprit.

**Outline** - Of immediate and highest level of concern is the failure of a primary **Humidification Unit**. Humidification is of the highest priority in a Museum in terms of protecting and conserving artifacts and arts that need to be exposed to a consistent humidity level to help sustain the artifact. A second unit was replaced in early 2014. The size of the facility and the requirements does necessitate 2 units. This unit has been turned off due to consist water leakage that in itself is and could be damaging. In recent activities the Museum Alliance of Rapid City has seen fit to invest in other systems related issues and implemented in 2016 Glycol treatments to reduce years of bacteria and corrosion activities within the HVAC system. These efforts have been successful but with other reactions within the network system itself. Glycol is an expensive proposition and loss of levels constitutes unnecessary additional and renewed expenses. Contract advisors have proposed an automatic **Glycol Feeder** to reduce reliance on manual feeding of the HVAC system. The Glycol solutions have been moving dead bacteria and metal corrosives through the system and have created additional clogging or stoppage issues within the **Air Handlers**. The MARC in 2016 invested in tie outs to each of the 3 Air Handlers to help isolate and clean these units but they are proving to be insufficient in terms of the management of water/chemical flows. Recommendations have been made to invest in **Strainer/Bypass valve systems** to allow for access to each Air Handler. This is hoped to establish a clean and flowing HVAC system network. The possibility exists that dead bacteria and corrosive metals have populated the **Air Coil Systems** blocking consistent flow of water/chemicals. If this is the case each unit will need to be tied out and manually cleaned. If the system is not flowing this would be recommended for each of the Air Handler Units. Lastly a **Boiler Unit** that serves as a system back-up in inoperable. During summer months this is not of high concern in winter months though if another Boiler where to fail the system itself would fail. A Steam Boiler was replaced in 2014 in alignment with the other Humidification Unit.

### **Parts and Costs –**

Humidification Unit \$12,000

Automatic Glycol Feeder \$5,000

Strainer/Bypass valve systems \$4,000 each times 3 = \$12,000

Air Coil System cleaning - \$2,500 each times 3 = \$7,500

Boiler Unit \$12,000

**Total Estimates – \$48,500**

