

**SOUTHERN MONTANA ELECTRIC GENERATION &
TRANSMISSION COOPERATIVE
HIGHWOOD GENERATING STATION
RAW WATER SUPPLY SYSTEM – SUMMARY**

The Highwood Generating Station (HGS) will require a reliable source of raw water for operations. The water supply for both the primary and alternate sites is the Missouri River. The water rights for supplying the water will be from an existing water reservation that is owned by the City of Great Falls (City). The City will continue to own the water reservation and will sell the water to HGS through an agreement between the City and Southern Montana Electric G&T. The point of diversion for the existing water reservation is within City limits. However, the point of diversion for the preferred HGS plant site is located downstream of the city in the Morony Pool. Therefore, the City has prepared and submitted an application to the Montana Department of Natural Resources and Conservation for transfer of the water reservation's point of diversion to the Morony Pool. In order to support this transfer of diversion, a preliminary design report was prepared for the plant's water intake system. Although specific to the preferred HGS plant site, this design would be applied in a similar manner to the alternate site. This document provides a summary description of the proposed intake system.

Raw water for the preferred HGS plant site will be obtained from the Missouri River approximately 0.4 mile upstream of Morony Dam. Morony Dam is owned and operated by PPL Montana. The land directly adjacent to the reservoir is also owned by PPL Montana. Morony Dam is operated as a run-of-the-river generation facility. Therefore, the outflow is maintained essentially equal to the inflow. The Morony Pool has a capacity of approximately 13,889 acre-feet and covers an area of approximately 304 acres. Presently there is no public access to the Morony Pool for recreational purposes.

The raw water supply system will consist of a collector well which will use a passive intake screen installed on the end of a lateral pipe that extends into the Morony Pool. The intake screen will be located and designed to prevent sediment and debris from entering the system while also providing protection to aquatic life. The passive intake will be designed according to Section 316(b) of the Clean Water Act which applies to new cooling water facilities that withdraw between 2 and 10 million gallons per day (MGD). The rule states that the maximum through-screen intake velocity must be less than 0.5 feet per second (fps).

A reinforced, below-grade, concrete caisson (vertical cylinder) will be constructed near the river and will serve as the intake's "wet well." The caisson will be located outside of the flood plain. A fully enclosed pump house will be located on the top of the caisson with a finish floor elevation at approximately grade. The pump house will contain two pumps designed to deliver a maximum of 3200 gallons per minute (gpm) to the plant site. The pumps will deliver the water to the HGS plant site through a buried pipe approximately 9,000 feet in length.

SME has options to obtain the necessary easements for the construction, operation and maintenance of the raw water system from the property owners. SME will also obtain necessary permits from the Montana Department of Environmental Quality and the Corps of Engineers for the construction, operation and maintenance of the raw water system.