

**REQUEST FOR PROPOSALS**  
**for**  
**Mall Ridge Lift Station Improvements**  
**PROJECT NO. 50376**  
SS03-1255

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**PROJECT DESCRIPTION**

The City of Rapid City proposes to design and construct a new lift station in the vicinity of Country Road and Nike Road, on land bordering the recently constructed Northbrook Subdivision at the northernmost boundary of the Rapid City limits. Design services shall include, as a first phase, an analysis and recommendations on whether it is best to reconstruct the existing station in place or to reconstruct a new station further downstream in the drainage basin to provide for future build out of the area.

This project will improve the regional lift station capacity, reliability, and odor control necessary to adequately and reliably provide sewer service for this rapidly expanding area of Rapid City. Currently, there is no safe overflow capacity to handle the sewage if a pump failure should occur. Also, the station is nearing its design capacity. The project could include a mile or more of new sewer and force main depending on the final location selected for the new lift station. The final location selection, together with its expanded service area, will largely be dependent on capacity limitations associated with the existing sewer mains located southward, closer to the center of the City, off of Haines Boulevard.

The scope of services will also include Haines Ave. Area Sewer Odor Mitigation Project #50443. Odors are due to H<sub>2</sub>S generation in the Mall Ridge Force Main. Several manholes and several hundred feet of sewer main have previously been replaced due to the extreme corrosion potential associated with this H<sub>2</sub>S generation. The ultimate fix will likely involve specialty equipment and processes installed at the lift station to provide adequate controls to eliminate the corrosivity and odors associated with this problem. Also related, and to be included in the specialty scope of services contract, will be to provide recommendations, final designs and specifications to mitigate odor problems within developed areas associated with the existing lift stations and force mains adjacent to Hwy. 16 South and Elk Vale Road (Visitor Information

Center and Rushmore Business Park) corridor developments. Inflow and Infiltration analysis will also be performed to assess the impacts of non-sewage flows entering the system and impacting the hydraulic capacity.

The project currently has a total budget of \$ 1,017,000.00 including preliminary design, final design and construction. Of course, the option selected for the lift station location will have a bearing on the final project cost. Funding for the project is from the Sewer Enterprise Fund. It is anticipated that design and construction will occur in 2004 and 2005. Coordination with adjacent property owners and/or Developer's will be encouraged to select the best lift station site and align the sewer mains corresponding to future streets wherever possible, in locations that will best serve the build out of the area.

Design criteria for the project shall include the "City of Rapid City Standard Specifications, 2002 Edition"; "Recommended Standards for Wastewater Facilities" (Ten State Standards, latest edition); "Design Criteria Manual for Water Distribution Systems and Sanitary Sewer Collection Systems for the City of Rapid City" (Draft), and "Water Environment Federation Manual of Practice for Water Pollution Control, Design of Wastewater and Stormwater Pumping Stations" (latest edition).

Justification: Continued development in the area of the existing lift station necessitates abandonment of an existing overflow pond and construction of new and higher capacity improvements to allow uninterrupted service during maintenance and to handle power outages and equipment failures. The existing lift station was constructed prior to 1979 and has undergone at least two upgrades since then. Additional capacity and reliability is now required to handle the demand in this rapidly growing area of the City. Owners adjacent to Haines Ave. have experienced serious odor problems since acquiring property. City of Rapid City Utility Maintenance Group has attempted several fixes over the past couple years to mitigate odor problems, none of which has been successful. Other areas of the City are experiencing similar odor problems and complaints from citizens. Operation and maintenance costs can be expected to double with the increased cost associated with the installation of larger horsepower pumps.