

**CITY OF RAPID CITY
REQUEST TO SOLICIT PROPOSALS
for
ELM AVENUE WATERMAIN REHABILITATION
PROJECT NO. W05-1517**

In 2003 the City of Rapid City conducted a study to evaluate the condition of a 20-inch steel watermain located in Elm Avenue. This watermain is approximately two miles long and as shown on Figure 1 runs from the five million gallon water tanks located atop Reservoir Hill to Elk Street. The purpose of the study was to determine the condition of the watermain and determine if the watermain needed to be replaced or if corrosion control measures could be implemented to extend the life of the watermain. The study indicated that the watermain, constructed in 1964, is in very good to excellent condition given its age and the surrounding soil conditions. Cathodic protection consisting of pipe coating and wrapping, test stations, joint bonding, and galvanic anodes were installed during the original pipe installation and additional galvanic anode strings were installed in 1973 and 1974. The soil corrosivity of the watermain route is corrosive to extremely corrosive.

The cathodic protection survey indicated the watermain is presently not being adequately protected with the existing galvanic anode protection system. This project will restore the watermain's level of cathodic protection to protected conditions. This will allow the City of Rapid City to extend the watermain's life for an extended period of time at a very economical cost as compared to total replacement of the watermain. The total watermain replacement cost is estimated to be approximately \$2,000,000.00.

The consultant selected for this project will conduct all necessary testing and direct and train City personnel in all tasks necessary for completion of the project. Involvement of City personnel in this project will allow the City to become more self-sufficient in trouble shooting and maintenance of corrosion protection systems.

The budgeted cost for this project, including consultant services, replacement materials and testing equipment is \$170,000.00. The funding source is the Water Enterprise Capital Improvement Fund (933).

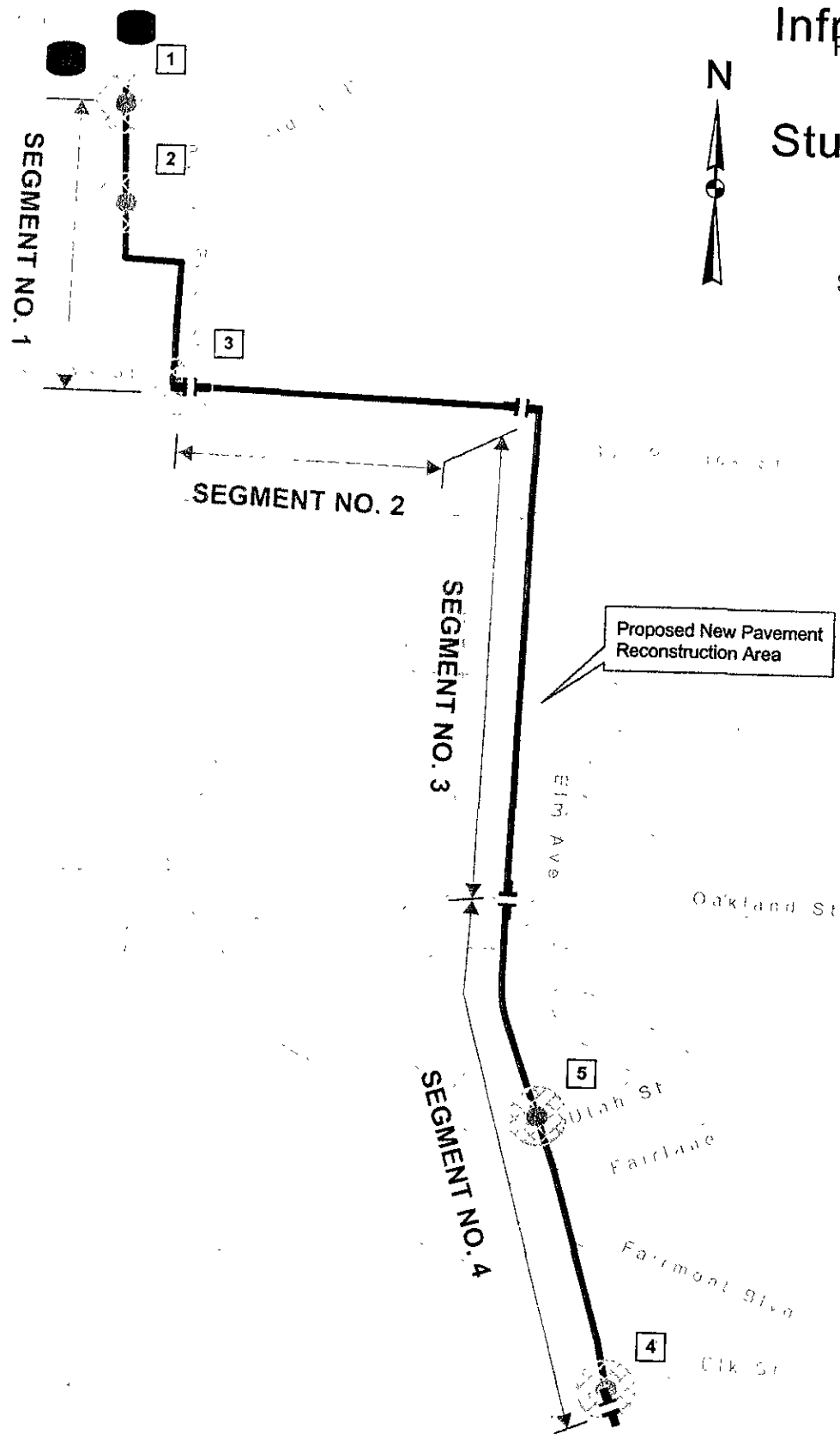
Infrastructure

PW061405-07

- Insulator
- 20 inch Main

Study Task

- Excavation Sites
- 1 (Excavation #)
- SEGMENT NO. Test Segment for Continuity/Potential



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Rapid City Corrosion Study for City Metallic Water Transmission Mains

February 2004



**Elm Avenue
20" Transmission Main**
Project Area Map
Figure 1