



CITY OF RAPID CITY

Engineering Services

300 Sixth Street

Rapid City, SD 57701-2724

Telephone: 605-394-4154

Fax: 605-394-6636

Direct Phone: (605) 394-5377 Ext. 221

stacey.titus@rcgov.org

July 25, 2005

City of Rapid City Mayor and Council

RE: PW072605-19 "North Deadwood High High Level" combined water system improvements for both the western and eastern slopes of the Dakota Hogback

Dear Mayor and Council,

Staff recently was requested to develop phased projects to provide water service for developable properties along the western and eastern slopes of the Dakota Hogback, refer to "Western Slope (Farrar) Deadwood Ave. Water Supply Project" letter under this agenda item and letter dated July 11, 2005 to Doyle Estes.

Council recently adopted the "North Rapid High Level and North Deadwood Avenue Water System Expansion Study Rapid City, South Dakota" report dated May 18, 2005 by Ferber Engineering Company, Inc. which outlined a plan for providing water service to developable properties along the eastern and western slopes of the Dakota Hogback. These improvements are necessary because the existing water systems cannot provide water service for properties above elevation 3450 msl (eastern slope) and 3460 msl (western slope).

The "Western Slope (Farrar) Deadwood Ave. Water Supply Project" proposed constructing a 1.75 MG ground level reservoir with an overflow elevation of 3895 msl, a new Madison well and well house, and water transmission mains. The probable cost for the phased western slope project was \$5,600,000. The July 11, 2005 letter to Doyle Estes outlined a phased project approach for the eastern slope of the Dakota Hogback and proposed constructing a 1.5 MG ground level reservoir with an overflow elevation of 3895 msl, a new Madison well, a raw water line, a combination well house and water booster station, and water transmission mains. The probable cost of the phased eastern slope project was \$4,700,000.

These phased projects allow for independent development along the western and eastern slopes without constructing the larger system as recommended in the Ferber report. These improvements provide initial service and later on could be incorporated into the larger system. The combined probable cost of constructing independent projects is \$10,300,000.

There appears to be an immediate interest in developing both the western and eastern slopes of the Dakota Hogback. For this reason staff has developed a proposed project that accomplishes development of both the eastern and western slopes and in general complies with the recommendations presented in the Ferber report. We propose to provide water service by constructing a 2.5 MG reservoir (half of what is ultimately required), a Madison well and well house, and water transmission mains. The attached drawing illustrates this conceptual water system and TIFD boundaries.



EQUAL OPPORTUNITY EMPLOYER

**WATER SYSTEM IMPROVEMENT PROBABLE COSTS FOR BOTH THE
WESTERN AND EASTERN SLOPES OF THE DAKOTA HOGBACK:**

Item	Item Description	Probable Cost
1.	RESERVIOR:	
a.	2.5 MG Reservoir	\$2,000,000
b.	Foundation	\$450,000
c.	Site	\$200,000
d.	Controls	\$50,000
e.	Access Road	\$250,000
f.	Engineering	\$250,000
	Sub total	\$3,200,000
2.	Madison Well and Raw Water Line:	
a.	Drill and Develop Madison Well	\$325,000
b.	Well House	\$275,000
c.	Engineering	\$100,000
	Sub total	\$700,000
3.	Water Transmission Mains:	
a.	27" – 1,000 feet	\$350,000
b.	24" – 3,500 feet	\$1,100,000
c.	20" – 2,600 feet	\$750,000
d.	16" – 3,900 feet	\$550,000
e.	14" – 9,150 feet	\$1,100,000
f.	Engineering	\$350,000
	Sub total	\$4,200,000
4.	Contingency;	\$200,000
	Total	\$8,300,000

Combined Western and Eastern Slope System probable cost = \$8,300,000.

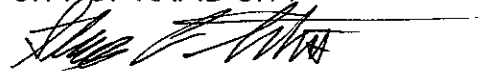
The combined western and eastern slope project would save approximately \$2,000,000; $((\$4,700,000 + \$5,600,000) - \$8,300,000 = \$2,000,000)$ compared to constructing independent projects.

The water reservoir, Madison well and well house, and water transmission mains are anticipated to be designed, bid, and constructed by Rapid City Public Works, and engineering consultant selection would be in accordance with the approved City Consultant Selection Policy. Developer agreements will need to be established if public and private funding is proposed.

If you have additional questions or to wish to schedule a meeting, please contact Dirk Jablonski at 394 – 4165.

Sincerely,

CITY OF RAPID CITY

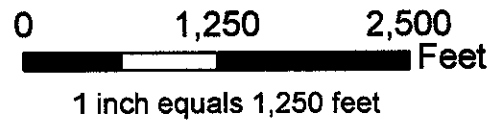


Stacey Titus, P.E.
Project Manager

Enclosure:

cc: Dirk Jablonski, Public Works Director; John Wagner, Water Superintendent; Marcia Elkins, Growth Management Director; Gary Shepard, Fire Department Chief; and file.

Propose "North Deadwood High-High Level" Service Area Water System Improvements for the Western & Eastern Slopes of Dakota Hogback



Legend

- EL 3450 Zone Separation Between North Deadwood High-High Level and North Rapid High Level
- EL 3460 Zone Separation Between North Deadwood High-High Level and South Canyon High Level
- EL 3795 Upper Service For North Deadwood High-High Level
- EL 3895 Overflow Elevation For North Deadwood High-High Level Reservoirs
- Proposed Water Reservoir
- Proposed Madison Well
- Future Water Reservoir
- Future Madison Well
- Future Rainbow Ridge Booster Station
- Future Water Transmission Main
- Proposed Alternative Rainbow Ridge TIFD Boundary
- Proposed Rainbow Ridge TIFD Boundary
- Proposed Deadwood Ave TIFD Boundary
- Proposed Water Transmission Main
- Proposed Access Road
- Existing Water Reservoir
- Existing Well
- Existing Water Main
- Parcels
- USGS 24K Contours**
- Index100**
- Index (100 ft)
- Intermediate

