



CITY OF RAPID CITY

Engineering Division/Traffic Operations

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MEMORANDUM

TO: Dirk Jablonski, P.E.
Director, Public Works Department

FROM: John Less, P.E.
Traffic Engineer, Engineering Services

CC: Ted Vore, P.E., P.S.
City Engineer

SUBJECT: Streetlight Evaluation
W. Main Street, Soo San Drive to 44th Street

DATE: December 14, 2006

As per the November 29, 2006 meeting of the Legal and Finance Committee, Traffic Operations has completed an evaluation of the existing street lighting system on W. Main Street between Soo San Drive and 44th Street. The system was evaluated based on the recommended horizontal illuminance values for a collector road as presented in An Informational Guide for Roadway Lighting (1984, American Association of State Highway and Transportation Officials). Please note that while the City's Major Street Plan classifies W. Main Street as a minor arterial, this classification is not included in the Guide.

The existing streetlights are standard 100-watt, cobra head luminaires mounted with 8-foot davit arms on 30-foot wood poles, variably spaced along both sides of the road. This configuration does not achieve the recommended illuminance values of the Guide. We have identified two improvement options to raise the existing illuminance values:

1. Replace the existing 100-watt bulbs with 250-watt bulbs.
2. Install four (4) additional 100-watt streetlights along the south side of the road. The resultant maximum spacing between lights would be approximately 130-feet.

Both options would result in a \$40 increase in monthly electricity costs for the City.

Traffic Operations recommends implementation of option #1 because (1) it will provide a slightly higher average illuminance value versus option #2, and, (2) it will not add to the number of utility poles in the neighborhood. We have also reviewed the location of the existing poles relative to the adjacent homes and do not anticipate that the increased light output will adversely affect any residences. Please let me know if you have any questions or need further information.