



CITY OF RAPID CITY

Engineering Services

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MEMORANDUM

TO: Public Works Committee/Common Council

FROM: John Less, P.E.
Traffic Engineer

THROUGH: Dirk Jablonski, P.E.
Director of Public Works

SUBJECT: Report on W. Chicago St. Streetlight Project
44th Street to Sturgis Road
Project ST06-1560, CIP #50366

DATE: April 19, 2007

BACKGROUND

- 1) The purpose of the project is to provide enhanced roadway lighting on the subject section of W. Chicago Street.
- 2) The subject section of W. Chicago Street is presently illuminated with nine (9) 25-30-foot poles with 100-watt luminaires. The spacing of the existing lights is variable with some in the median island and others between the curb and sidewalk. The poles in the median island are remnants from the old Black Hills Power wooden towers that were replaced by the existing steel towers.
- 3) The speed limit is 35 MPH on the subject section of W. Chicago Street.
- 4) A midblock school crossing exists approximately midway between N. 39th Street and N. 40th Street. A crossing guard is stationed at the crossing and the school speed zone signing is supplemented with flashing beacons.
- 5) The subject section of W. Chicago Street is classified as a principal arterial on the City of Rapid City Major Street Plan. It is also included on the City of Rapid City Truck Route Map as a truck route.



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- 6) The 2006 average daily traffic on W. Chicago Street was 11,500 vehicles per day. In response to local resident comments about the distribution of traffic volumes, staff compared the hourly traffic of W. Chicago Street to other roads with similar traffic volume. This comparison indicated that the traffic distribution is not significantly different than other similar roads (see Attachment 1).
- 7) Between 2004 and 2006, there were three (3) mid-block crashes. All of the crashes occurred during daylight hours.
- 8) Preliminary plans for the installation of streetlights were prepared in accordance with the recommended illumination levels of the American Association of State Highway and Transportation Officials' Roadway Lighting Design Guide. The preliminary design placed forty (40) foot poles with 250-watt luminaires between the curb and sidewalk at a nominal 180-foot spacing on both sides of the road. The selected luminaires include shielding to reduce the amount of light trespass onto the adjacent residences. Additionally, the streetlights were located on property lines wherever possible to further minimize light trespass into structures.
- 9) On February 26, 2007, Engineering Services hosted a public meeting to present to area residents the preliminary project plans. Seventeen (17) people attended the meeting. Following the meeting, a petition signed by thirty-one (31) abutting property owners was presented to staff. The petition included a number of concerns; those specifically associated with the project are summarized as follows:
 - a) The signers do not object to a project to improve the illumination level, rather they advocate a lower design illumination level in consideration of the residential character of the subject section of W. Chicago Street.
 - b) The signers object to the proposed location of the streetlights on the outside of the road and request that they be located in the median island.

In addition to the petition, staff received two (2) written comments opposing the project (both from residents who had signed the petition), two (2) written comments supporting the project and two (2) written comments that related to other issues. Attachment 2 is a copy of the petition. Attachment 3 includes copies of the received comments and a copy of the meeting sign-in sheet.
- 10) On April 4, 2007, Black Hills Power advised staff that the installation and maintenance of any lighting structures within the median island area would violate the National Electrical Safety Code. Attachment 4 is a copy of the correspondence from Black Hills Power.
- 11) Preliminary design calculations indicate that reducing the illumination level to collector road guidelines would require forty (40) foot poles with 250-watt luminaires between the curb and sidewalk at nominal 180-foot spacing on alternating sides of

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the road. This alternative design was developed to take advantage of the partial conduit installed with previous road improvement projects. Note that numerous alternative designs are possible using a variety of pole heights and luminaire types.

Attachments