



CITY OF RAPID CITY

Engineering Services

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MEMORANDUM

TO: Public Works Committee/Common Council

FROM: Robert Ellis, P.E., P.T.O.E.
Traffic Engineer

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

SUBJECT: Signalized Intersection Planning List

DATE: August 3, 2007

BACKGROUND

1. Council at its April 16, 2007 meeting directed staff to develop a prioritized list of intersections that may require signalization in the future. The list was to be based on the existing traffic signal planning list.
2. Nationally accepted guidelines for the installation of traffic signals are contained in the Manual on Uniform Traffic Control Devices (MUTCD). These guidelines provide a consistent and rational basis for evaluating the need to install traffic signals since traffic signals serve a specific function, i.e. the assignment of right-of-way at intersections, and the improper installation of a signal can negatively affect both roadway capacity and safety. Additionally, the National Cooperative Highway Research Program (NCHRP) has developed an engineering guide for the evaluation of intersections. This guide includes a procedure for weighting the effect of turning movements at an intersection used in the evaluation of the MUTCD guidelines. The evaluation of the traffic signal planning list utilized both sets of guidelines.



EQUAL OPPORTUNITY EMPLOYER

August 2, 2007

Page 2 of 2

3. Based on the NCHRP recommendations for weighting turning movements, the intersection of N. LaCrosse Street and E. Monroe Street does not warrant the installation of a traffic signal at this time.
4. This evaluation also reviewed and analyzed crash data at each of the subject intersections for 2004, 2005, and 2006 to determine the need for a traffic signal.
5. Attached is the resulting prioritized list. Note that none of the locations warrant a traffic signal based on current conditions. Staff will continue to monitor and evaluate on a regular basis the locations noted on the list and will report to the Mayor and Council as appropriate.

Attachment

**CITY OF RAPID CITY
TRAFFIC SIGNAL PLANNING LIST
2007 EVALUATION**

LOCATION	COMMENTS	TOTAL DAILY ENTERING TRAFFIC	2004-2006 TOTAL CRASHES	AVERAGE ANNUAL # OF CRASHES	ANNUAL CRASH RATE (crashes per million entering vehicles)	2004-2006 CORRECTABLE CRASHES	AVERAGE ANNUAL # OF CORRECTABLE CRASHES	NUMBER OF SIGNAL WARRANTS MET
La Crosse St/ Mall Dr	signal to be installed with FY08 E. Mall Dr project	5135	0	0	0.00	0	0	0
La Crosse St/Monroe St	evaluate annually	29960	12	4	0.37	6	2	0
SD-44/Sedivy Ln	evaluate annually	20460	7	2	0.31	4	1	0
SD-44/South Valley Dr	evaluate annually	20141	12	4	0.54	9	3	0
5th St/ Texas St	evaluate annually	15280	1	0	0.06	0	0	0
Mt Rushmore Rd/ Flormann St		32172	16	5	0.45	11	4	0
5th St/ Quincy St		24909	9	3	0.33	5	2	0
Oakland St/ Cambell St		23003	5	2	0.20	1	0	0
5th St/ St Cloud St		19057	5	2	0.24	1	1	0
Cambell St/ Centre St		17708	11	4	0.57	7	2	0
St Joseph St/ 4th St		16341	6	2	0.34	3	1	0
St Joseph St/ 3rd St		15011	8	3	0.49	0	0	0
Haines Ave/ Mall Dr		12612	11	4	0.80	8	3	0
Soo San Dr/ Range Rd		12416	6	2	0.44	0	0	0
St Patrick St/ Sedivy Ln		10704	3	1	0.26	1	0	0
North St/ W Blvd (N)	intersection to be redone with future SDDOT I-190/Silver St project - total crashes includes bridge hit crashes	7074	18	6	2.32	9	3	0
Elm Ave/Minnesota St	has been evaluated for all-way STOP; warrants not met	8048	5	2	0.57	4	1	0
Elm Ave/Indiana St	has been evaluated for all-way STOP; warrants not met	6641	2	1	0.28	2	1	0
St Patrick St / Elm Ave	existing ALL-WAY STOP functions adequately	15279	12	4	0.72	6	2	0
Maple Ave/ Disk Dr	existing ALL-WAY STOP functions adequately	13087	2	1	0.14	0	0	0

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Maple Ave/ Anamosa St	existing ALL-WAY STOP functions adequately	10020	6	2	0.55	2	1	0
Kansas City St/ West Bl	existing ALL-WAY STOP functions adequately	8868	2	1	0.21	2	1	0
Kansas City St/ 9th St	existing ALL-WAY STOP functions adequately	7987	5	2	0.57	5	2	0
W Main St/ 44th St	existing ALL-WAY STOP functions adequately	7569	1	0	0.12	0	0	0
W. Main/St. Onge St	significant volume reduction expected when Cement Plant Rd is closed to travel	23212	9	3	0.35	5	2	0
W Chicago St/ St Onge St	significant volume reduction expected when Cement Plant Rd is closed to travel	17632	6	2	0.31	6	2	0
5th St/ Flormann St	too close to adjacent signal							
Cathedral Dr/ Tower Rd	too close to adjacent signal							
5th St/Indiana St	too close to adjacent signal							
Haines Ave/ Knollwood Dr	too close to adjacent signal							