



CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701

Public Works Department Engineering Services Division

300 Sixth Street

Telephone: (605) 394-4154 FAX: (605) 355-3083

Web: www.rcgov.org

MEMORANDUM

TO: Mayor Kooiker, Public Works Committee, City Council

FROM: Dale Tech PE/LS, City Engineer

SUBJECT: PW081214-09 Traffic Recommendation for the intersection at Stumer Road and Enchantment Road

DATE: August 26, 2014

The intersection of Stumer Road and Enchantment Road was reopened to traffic on May 8, 2014 after being closed as part of the WalMart development. City Staff has collected data at and near the intersection prior to and after the intersection was opened to quantify the volume of traffic at the intersection and to provide a recommendation regarding traffic operations at the intersection.

Traffic Count Data

Traffic Count (ADT)	Enchantment Rd. South of Stumer Rd.	Enchantment Rd. North of Stumer Rd.	Enchanted Pines Dr. East of Enchantment Rd.	Stumer Rd. East of Enchantment Rd.
Wed May 7, 2014	637	873	1658	0
Wed May 21, 2014	636	1003	1808	No Data
Wed June 18, 2014	697	1056	2064	610

Intersection Level of Service (LOS)

LOS for an intersection is a qualitative measure developed to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles. LOS provides a means for identifying intersections that are experiencing operational difficulties. The LOS scale represents the full range of operating conditions. The LOS scale is based on the ability of an intersection to accommodate the amount of traffic using it. The scale



EQUAL OPPORTUNITY EMPLOYER



CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701

Public Works Department Engineering Services Division

300 Sixth Street

Telephone: (605) 394-4154 FAX: (605) 355-3083

Web: www.rcgov.org

ranges from "A" which indicates little, if any, vehicle delay, to "F" which indicates substantial vehicle delay and traffic congestion. Based on the peak hour data taken on Wed June 18, 2014, the intersection LOS for Enchantment Rd. is "A" as there is no delay due to the fact that Enchantment Rd is not stop sign controlled and the LOS for Stumer Rd. is "A" (average delay of less than 10 seconds) due primarily to the fact that the peak hour volume for Stumer (54 vehicles from 7-8 pm) does not coincide with the Enchantment Rd. peak hour of 5-6 pm.

Intersection Layout

The intersection of Enchantment Rd. and Stumer Rd. meets City Criteria for grades, intersection geometry and sight distances. No operational issues can be attributed to the layout of the intersection.

All Way Stop Warrants

The warrants for an all way stop at Enchantment Rd. and Stumer Rd. were checked and the traffic volumes on Enchantment Rd. would have to increase 3 to 4 times and volumes on Stumer Rd. would have to increase 9 to 10 times to warrant an all way stop.

Recommendation

No additional traffic controls or intersection improvements for the intersection of Enchantment Rd. and Stumer Rd. are recommended as the intersection is functioning properly.



EQUAL HOUSING
OPPORTUNITY

EQUAL OPPORTUNITY EMPLOYER