



Traffic Engineering Division

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SUMMARY OF STAFF RECOMMENDATIONS To PBMVC

January 19, 2011

1. Fordem and Sherman: Recommend maintaining current stop sign control.
2. Cottage Grove & Thompson: Recommend maintaining current stop sign control.
3. Nakoma, Seminole and Yuma: Recommend maintaining current stop sign control.
4. Buckeye and Thompson: Recommend maintaining current stop sign control.
5. Cottage Grove & McLean: Recommend maintaining current stop sign control.
6. Cottage Grove & Northstar: Recommend installation of a traffic signal control.
7. Old Sauk and Westfield: Recommend installation of a traffic signal and geometric improvements.

2010 TRAFFIC SIGNAL PRIORITY LIST SPECIAL STUDIES FOR PBMVC SELECT INTERSECTIONS

Actions completed to date

1. **Fordem & Sherman**
Collected 24 hour automatic machine counts.
2. **Cottage Grove & Thompson**
Collected 24 hour automatic hose counts.
3. **Nakoma, Seminole and Yuma**
Collected 24 hour automatic hose counts.
4. **Buckeye & Thompson**
Collected 24 hour automatic hose counts.
5. **Cottage Grove & McLean**
Collected 24 hour automatic hose counts.
6. **Cottage Grove & North Star**
Collected 24 hour automatic hose counts.
7. **Old Sauk & Westfield**
Collected 24 hour automatic hose counts.

TRAFFIC SIGNAL PRIORITY LIST COMMENTARY

Fordem Avenue & Sherman Avenue

The Fordem-Sherman intersection is located on Sherman Avenue approximately 1400 feet south of the signalized intersection at Commercial Avenue, and on Fordem Avenue approximately 3,500 feet north of the signalized intersection at Johnson Street.

Recent automatic hose counts show that this intersection is 28% short of meeting the adopted minimum numerical volume for traffic signals.

A delay study performed previously in 2003 during the peak p.m. traffic period showed that the actual delay to motorist on Sherman Avenue (approaching from the southwest) is 69% short of meeting the minimum delay criteria for traffic signals. The highest 15-minute delay period was found to be from 4:30-4:45 p.m. during which time the average delay to motorist on this approach was found to be 34 seconds per vehicle. Note that volumes collected in 2010 were less than those counted in 2003. ,

Crash History

- The crash history for the past five years, 2005 thru 2009, shows there have been an average of 2.8 crashes per year (of crash types considered correctable by traffic signals). A traffic signal is not expected to improve upon this number of crashes.

Application of Traffic Signal Criteria

- Recent manual and automatic hose counts show that this intersection is 28% short of meeting the adopted minimum numerical volume for traffic signals.

Staff recommends maintaining the current stop sign control.

Cottage Grove Road & Thompson Drive

The Cottage Grove-Thompson intersection is located on Cottage Grove Road approximately 600 feet west of the bridge over Interstate Highway 90. It is approximately 4,400 feet east of the signalized intersection at Acewood Blvd. and approximately 5,300 feet west of the signalized intersection at Sprecher Road. The Cottage Grove-Thompson intersection forms a "T" intersection with Cottage Grove having the right-of-way and Thompson Road being stop controlled.

A delay study was performed in 2009 during the peak a.m. traffic period showed that the actual delay to motorist on the Thompson northbound is 87% short of meeting the minimum delay criteria for traffic signals. The highest 15-minute delay period was found to be from 7:45 – 8:00 a.m. during which time the average delay to motorist on the northbound approach was found to be 28 seconds per vehicle. Average delays recorded during all other time intervals were significantly less. Since traffic volumes counted in 2010 were only slightly higher than those collected in 2009, we would not expect delays to have increased significantly.

Crash History

- The crash history for the past five years, 2005 thru 2009, shows there have been an average of 2.0 crashes per year (of crash types considered correctable by traffic signals). A traffic signal is not expected to improve upon this number of crashes.

Application of Traffic Signal Criteria

- Recent manual and automatic hose counts show that this intersection is 15% short of meeting the adopted minimum numerical volume for traffic signals.

Staff recommends maintaining the current stop sign control. We will continue to monitor the Cottage Grove-Thompson intersection to assess changing conditions.

Nakoma Road, Seminole Hwy & Yuma Drive

The Nakome-Seminole-Yuma intersection is located approximately 2,700 feet northeast of the signalized intersection at Midvale, Nakoma and Hammersley Road, and approximately 4,150 feet southwest of the signalized intersection at Glenway Street and Monroe Street. The distance from this intersection to Midvale Drive is approximately 2200 feet along Yuma Drive.

An Adult School Crossing Guard is stationed at this intersection during school crossing hours. A median island in the southwest leg of Nakoma and a zebra striped crosswalks on both legs of Nakoma were placed October 2006 to improve pedestrian crossings.

Numerous complaints regarding speeding and use of Yuma Drive as a cut-through route between Nakoma and Midvale have been logged as far back as Traffic Engineering has kept records. In 1999 a Temporary traffic circle was placed at Waban Hill and Yuma Drive. In 2000, speed humps on Yuma Drive were approved to be installed. A traffic signal would be expected to exacerbate this problem.

Crash History

- During the five-year period 2005-2009, there have been a total of eight crashes reported which were types considered to be correctable by traffic signals. Five of these six crashes were reported in 2008, two in 2009, and the other one was reported in 2007.
- 0 crashes reported in both 2005 and 2006.

Application of Traffic Signal Criteria

- Recent counts show that this intersection is 25% short of meeting the adopted minimum numerical volume for traffic signals.

Installation of a traffic signal at this intersection would require removal of the island in the southwest leg of Nakoma to facilitate a short left-turn lane.

Alternatives treatments for this intersection other than traffic signals which were considered were the Pedestrian Hybrid Beacon, Rectangular Rapid Flashing Beacons (RRFB), and All-Way Stop control.

Due to high volume of right-turns from northbound Seminole Highway onto inbound Nakoma Road, the Pedestrian Hybrid Beacon would not be a recommended alternative.

Computer modeling of All-Way Stop control at this intersection indicates that All-Way Stop control is expected to result in significant queuing of inbound Nakoma traffic during the a.m. peak period.

Buckeye Road & Thompson Drive

This intersection is located on Buckeye Road approximately 2,250 feet to the east of the all-way stop controlled intersection at Buckeye-Vondron and approximately 600 feet to the west of the bridge over HWY I-90. The westbound approach from the bridge is downhill at an approximate 5 percent slope.

Crash History

- During the five-year period 2005-2009, there have been a total of 2 crashes reported which were types considered to be correctable by traffic signals. Both of these crashes were reported in 2006.

Application of Traffic Signal Criteria

- Recent counts show that this intersection is 91% short of meeting the adopted minimum numerical volume for traffic signals.

Staff recommends maintaining the current stop sign control.

Cottage Grove Road & McLean Drive

The Cottage Grove-McLean intersection is located approximately 1,800 feet west of the signalized intersection at Sprecher Road, and approximately 1,500 feet east of the intersection at North Star Drive which is being recommended to have traffic signals installed within the one to two years.

Crash History

- During the five-year period 2005-2009, there have been a total of 2 crashes reported which were types considered to be correctable by traffic signals. This one crash was reported in 2006.

Application of Traffic Signal Criteria

- Recent counts show that this intersection is 73% short of meeting the adopted minimum numerical volume for traffic signals.

Staff recommends maintaining the current stop sign control.

Cottage Grove Road & North Star Drive

The Cottage Grove-North Star intersection is located approximately 3,350 feet west of the signalized intersection at Sprecher Road, and approximately 900 feet to the east of the bridge over HWY I-90.

Crash History

- During the five-year period 2004-2008, there have been a total of zero crashes reported which were types considered to be correctable by traffic signals.

Application of Traffic Signal Criteria

- Recent counts show that this intersection meets two of the adopted minimum numerical volume criteria for traffic signals and is six percent short of meeting a third.

Staff recommends approval for installing a traffic signal at Cottage Grove-North Star. In addition to meeting the traffic volume warrants, installation of a traffic signal at North Star is expected to help create gaps in traffic at the Cottage Grove-McLean intersection.

Old Sauk Road & Westfield Road

The Old Sauk-Westfield intersection is located on Old Sauk Road approximately 1600 feet west of the signalized intersection at Gammon Road, and approximately 2,900 feet east of the signalized intersection at High Point Road.

Application of Traffic Signal Criteria

- Recent traffic counts and speed studies show that this intersection meets three of the adopted minimum numerical volume criteria for traffic signals.

If this intersection is to become signalized, the intersection will need to be reconstructed via remarking to provide left-turn lanes for both eastbound and westbound Old Sauk Road, and will require widening the east-leg of Old Sauk Road in order to maintain bike lanes. The eastbound Bike and Right Turn Only lane designation between Westfield and Gammon Road would need to be removed.

Staff recommends approving installation of a traffic signal along with the recommended geometric, signing, and marking changes recommended to facilitate installing the traffic signal.