



Traffic Engineering and Parking Divisions

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2007 TRAFFIC SIGNAL PRIORITY LIST SUMMARY OF STAFF RECOMMENDATIONS TO PEDESTRIAN/BICYCLE/MOTOR VEHICLE COMMISSION

December 18, 2007

1. Gammon Road & Tree Lane: Recommend installing traffic signal control.
2. Aberg Avenue & Huxley Street: Recommend maintaining current stop sign control.
3. Raymond Road & Whitney Way: Recommend installing traffic signal control.
4. Nakoma Road, Seminole Hwy & Yuma Drive: Recommend maintaining current stop sign control.
5. Sherman Avenue & Trailsway: Recommend maintaining current stop sign control.
6. Lien Road & Thierer Road: Recommend maintaining current stop sign control.
7. Manchester Road & McKee Road: Recommend installing traffic signal control.
8. Frey Street & Segoe Road: Recommend installing traffic signal control.

**2007 TRAFFIC SIGNAL PRIORITY LIST
SPECIAL STUDIES FOR PBMVC SELECTED INTERSECTIONS**

Actions completed to date

- 1. Gammon Road & Tree Lane**
Collected 24 hour automatic machine counts.
- 2. Aberg Avenue & Huxley Street**
Collected 24 hour automatic machine counts.
- 3. Raymond Road & Whitney Way**
Collected 24 hour automatic machine counts.
- 4. Nakoma Road, Seminole Hwy & Yuma Drive**
Collected 24 hour automatic machine counts.
- 5. Sherman Avenue & Trailsway**
Collected 24 hour automatic machine counts.
- 6. Lien Road & Thierer Road**
Collected 24 hour automatic machine counts.
4:00 to 5:00 p.m. manual counts
- 7. Manchester Road & McKee Road**
Collected 24 hour automatic machine counts.
- 8. Frey Street & Segoe Road**
Reviewed traffic projections in the Traffic Impact Analysis performed for the Hilldale Redevelopment.

2007 TRAFFIC SIGNAL PRIORITY LIST COMMENTARY

GAMMON & TREE

Intersection Location

- 1800 feet to the north of Gammon-Mineral Point
- 3500 feet to the south of Gammon-Old Sauk
- East leg is driveway entrance to Thomas Jefferson Middle school
- Planned location for Community Education Center

Traffic & Pedestrian Volumes

- Extensive traffic data was collected during September, 1997
- Current Gammon Road vehicle volumes nearly identical to 1997 volumes
- Pedestrian crossings of this intersection occur predominantly during the hours when an Adult School Crossing Guard (ASCG) is on duty

Intersection Features

- Zebra stripe crosswalk crossing north leg of Gammon Road
- A median in the north leg of the intersection provides a refuge area which allows crossing of Gammon Road in two stages
- Flashing beacons for Gammon Road traffic since 1990
- Two Adult School Crossing Guards
 - Originally to serve Muir School elementary students living west of Gammon Road
 - Since 1989 these students have been bused
 - Transportation Commission recommended in 1990 to continue the ASCG
- The crossing guard during the 1997 study stated that the right turning movement out of the school driveway was the most dangerous since these motorists were looking at northbound Gammon vehicles rather than the north leg crosswalk.
 - A signal would exacerbate this problem by providing a “green” indication for the vehicular traffic exiting the school entrance at the same time as the “walk” light for crossing Gammon Road

Crash History

- Eight crashes reported during five-year period 2002-2006
 - Four of the eight were types considered to be correctable by a traffic signal.
- The most recent reported pedestrian crash occurred in the north leg crosswalk on November 15, 2004 at 6:29 p.m. The 27-year-old pedestrian ran eastbound across the street to catch a bus on the other side and was hit by a northbound vehicle.
- The second most recent reported pedestrian crash occurred in the north leg crosswalk on June 13, 1991 at 8:02 p.m. The 11-year-old pedestrian was hit by a southbound vehicle.
- Another pedestrian crash was reported south of Tree Lane on March 14, 2005. A 19 year old pedestrian was crossing Gammon Road, westbound, in front of a northbound vehicle in the right lane after a motorist waved him thru, and was later hit by another northbound vehicle he did not see which was traveling in the left lane.

Application of Traffic Signal Criteria

The recently collected counts indicate that the current traffic conditions do meet at least three of the minimum criteria for traffic signals.

Additional Discussion

Some of the potential benefits for signaling the Gammon-Tree intersection are as follows:

- Lesson the influence of Gammon Road traffic as a barrier between the school and neighborhoods west of Gammon.
- The ASCG could be considered for modification or removal
- Pedestrians, bicyclists, and motorists crossing or entering Gammon Road will have “green time” when Gammon Road traffic is stopped; therefore decisions on when to cross are easier.

Some of the potential disadvantages of a signalized intersection are as follows:

- Potential to direct additional non-local traffic onto Tree Lane and into neighborhoods to the west.
- Increase in collisions (predominantly rear-end) and injuries, which is typical when “low crash incidence” intersections become signalized.
- Increased delay to pedestrians, bicyclists, and motorists desiring to cross Gammon Road.
- Initial cost to install and annual cost to provide power and maintenance.

Based on this review, Traffic Engineering recommends that a traffic signal be installed along with geometric improvements including adding a right turn lane out of the school driveway. Traffic Engineering also recommends re-evaluating how the ASCG will function with the presence of a traffic signal.

ABERG AVENUE & HUXLEY STREET

The Aberg-Huxley intersection is located on Aberg Avenue approximately 1,080 feet west of the signalized intersection at Packers Avenue and approximately 1,180 feet east of the signalized intersection at Sherman Avenue. A Madison Metro Bus Transfer Point began operating on the east side of Huxley approximately 300 feet south of Aberg in 1998. A Park and Ride Lot was constructed adjacent to the Transfer Point in 2004.

Recent hose counts show that this intersection is 64% short of meeting the adopted minimum numerical vehicle volumes for traffic signals. Extensive manual counts were collected from 7 a.m. to 7 p.m. in 2003. These manual counts indicate that the pedestrian volumes are approximately 77% short of meeting the minimum numerical pedestrian volumes for traffic signals.

The crash history for the past five years, 2002 thru 2006, shows there have been an average of 0.25 crashes per year (of crash types considered correctable by traffic signals). During the past 24 years, a total of two crashes involving pedestrians have been reported at this intersection. One involved a westbound to southbound left-turning vehicle and a pedestrian crossing the south leg of Huxley. The other involved a westbound vehicle and a pedestrian in the west leg of Aberg. A traffic signal would not be expected to improve the safety record of the intersection.

Traffic Engineering has been working with the alderperson to install high visibility crosswalks and islands at this intersection.

RAYMOND ROAD & WHITNEY WAY

Traffic Volumes

- 2007 approach volume per weekday: 10,709 on Whitney Way and 11,945 on Raymond Road
- 2006 approach volume per weekday: 9,940 on Whitney Way and 11,174 on Raymond Road
- 2005 approach volume per weekday: 11,700 on Whitney Way and 12,350 on Raymond Road
- 2002 approach volume per weekday: 10,100 on Whitney Way and 12,950 on Raymond Road
- 1999 approach volume per weekday: 9,500 on Whitney Way and 11,800 on Raymond Road

Although these volumes meet the minimum numerical criteria for traffic signals, the present four-way stop control has served this intersection well for the past 20 years.

Crash History

- 4 crashes reported in 2006 (3 of these were types considered to be correctable by traffic signals)
- 1.9 crashes per year for the 20 years since the four-way stop was installed in 1985
- 6.8 crashes were reported per year during the 5 years prior to four-way stop control

Experience finds traffic signalization can increase certain crash types, such as rear-end and run-red crashes. Crashes of this type may be expected to increase if traffic signals are installed at this location.

Application of Traffic Signal Criteria

These volumes meet the minimum numerical criteria for traffic signals.

Additional Discussion

Computer modeling performed for a 1997 study of this intersection showed:

- Signal control would reduce vehicular delay during the a.m. peak traffic period (7:30 - 8:00 am) and during the p.m. peak traffic period (5:00 - 5:45 pm)
- During the remaining 22+ hours of the day, signal control was expected to result in longer delays.
- Pedestrian delay is also estimated to increase significantly with signal control.

Although a signal would provide pedestrians with a defined crossing period, the large volume of right-turning and left-turning vehicle movements will cross and conflict with the pedestrian movements. This conflict is expected to worsen pedestrian conditions at the intersection.

A decision between maintaining the all-way control or installing traffic signals involves, among other things, weighing the importance of reducing delay during peak hours and removing a "level" of decision making from motorists as to who has the right-of-way and assigning this to the signal controller, making it "easier" to navigate the intersection.

Given the increased commercial development in the vicinity of the intersection, as well as the substantial congestion during peak traffic periods, Traffic Engineering recommends installing a traffic signal.

NAKOMA ROAD, SEMINOLE HWY & YUMA DRIVE

The Nakoma-Seminole-Yuma intersection is located approximately 2,700 feet northeast of the signalized intersection at Midvale-Nakoma-Hammersley Road and approximately 4,150 feet southwest of the signalized intersection at Glenway Street-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 Nakama 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.

Crash History

- During the five-year period 2002-2006, there have been a total of 4 crashes reported which were types considered to be correctable by traffic signals.
- 0 crashes reported in both 2005 and 2006.

Application of Traffic Signal Criteria

- Recent counts show that this intersection is 40% short of meeting the adopted minimum numerical volume for traffic signals.

SHERMAN AVENUE & TRAILSWAY

This intersection is located 1,570 feet south of the signalized intersection at Northport-Sherman and 2,570 feet north of the signalized intersection at MacPherson-Schlimgen-Sherman.

Recent counts show that this intersection is 63% short of meeting the adopted minimum numerical volume for traffic signals.

During the past 25 years, there have been a total of two crashes at this intersection which involved pedestrians. Both of these crashes resulted in a fatality.

The most recent of these occurred August 12, 2007 at 9:36 p.m. when a 74 year old pedestrian crossing eastbound in the north leg crosswalk was hit by a northbound motorist in the right lane who was later charged with causing great bodily harm by hit and run and third-offense drunken driving, among other alleged crimes.

The other pedestrian fatality crash occurred on November 11, 1998 at 5:09 p.m. when an 87 year old westbound pedestrian in the north leg crosswalk was hit by a southbound motorist. Conditions at the time of this crash were sleet, wet roadway, and dark.

During the past five year period, 2002-2006, there have been a total of three reported traffic crashes at the intersection.

Traffic Engineering has been exploring pedestrian improvement options, such as median islands, to present to the neighborhood and the alderperson.

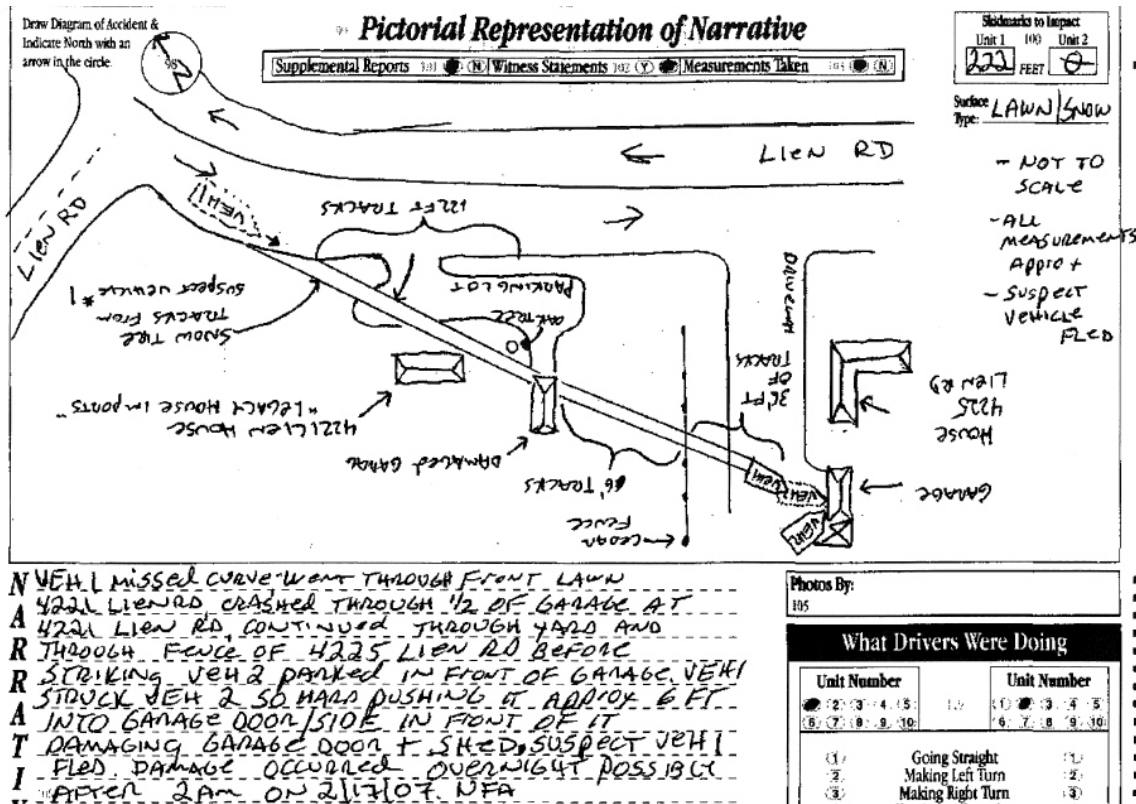
LIEN ROAD & THIERER ROAD

The Lien-Thierer intersection is located approximately 1,130 feet southeast of the signalized intersection at Thierer-East Washington and approximately 1,800 feet east of the signalized intersection at Lien-East Washington.

The majority of Lien Road eastbound approaching motorists turn right to continue on Lien Road, the majority of westbound Lien Road approaching motorists continue straight ahead onto Thierer, and the majority of motorists approaching the intersection on Thierer Road continue straight ahead onto eastbound Lien Road. As a result, the existing intersection geometric configuration, which has the west leg of Lien Road curved up to tee into Thierer, results in significantly less turning movement conflicts than would an alternative configuration of teeing Thierer Road onto Lien Road as was suggested during the October PBMVC public hearing.



The February 17, 2007 hit and run crash incident, shown in the following figure and referred to at the public hearing, was a type of crash which would not be considered correctable by a traffic signal.



Recent manual and automatic machine counts show that this intersection is 49% short of meeting the minimum numerical volume for traffic signals.

The crash history for the past five years, 2002 thru 2006, shows that only one crash of a type considered correctable by traffic signals has been reported during this period. A traffic signal would not be expected to improve the safety record of the intersection.

MANCHESTER ROAD & MCKEE ROAD

The Manchester-McKee intersection is located approximately 2,100 feet east of the signalized intersection at Maple Grove-McKee.

The corridor plan for McKee Road included installation of a traffic signal at the Manchester intersection when such a signal became warranted. During the McKee Road 2003 reconstruction project, underground infrastructure for a traffic signal was installed at this intersection.

Recent counts show that this intersection now exceeds three of the eleven minimum criteria for traffic signals.

FREY STREET & SEGOE ROAD

Based on the projected volumes for the reconstructed Frey Street and Segoe Road intersection with the Humana Redevelopment, this intersection is projected to exceed minimum criteria for installation of traffic signals.

Installation of a traffic signal at Frey Street and Segoe Road was included in the Plan Commission approval of the Hilldale Redevelopment.