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March 25, 2014

SUMMARY OF STAFF RECOMMENDATIONS
To PBMVC

March 25, 2013

1. Blount & Williamson: Recommend maintaining current stop sign control.
2. American Parkway and Buttonwood: Recommend installation of a traffic signal. Costs to be paid for by the benefitting commercial development.
3. Regent & Roby: Recommend maintaining current stop sign control.
4. Blair & Johnson: Recommend installation of a traffic signal control as part of the Johnson Street reconstruction project.

2013 TRAFFIC SIGNAL PRIORITY LIST
SPECIAL STUDIES FOR PBMVC SELECT INTERSECTIONS

Actions completed to date

1. **Blount & Williamson**
   Collected 24 hour automatic machine counts.
   Computer modeling of traffic signal control.

2. **American Parkway and Buttonwood**
   Reviewed recent turning movement counts.
   Review traffic impact expected as part of the approved UW Hospital.

3. **Regent & Roby**
   Collected 24 hour automatic machine counts.
   Determine sight distance for Regent Street Traffic

4. **Blair & Johnson**
   Modeled traffic impacts of traffic signal installation as part of Johnson Street corridor traffic signal system.

TRAFFIC SIGNAL PRIORITY LIST COMMENTARY

1. Blount Street & Williamson Street

The Blount-Williamson intersection is located on Williamson Street approximately 700 feet northeast of the signalized intersection at Blair-John Nolen-Wilson-Williamson, and approximately 190 feet southwest of the signalized T-intersection at Jenifer Street. A heavily used multiuse path crosses Blount Street on the south side of the intersection.

As part of the Williamson Street reconstruction project, in-pavement "loop" detectors were placed on the Blount Street approaches to Williamson Street. Activation of these loops by the presence of vehicles or bicycles can activate the traffic signal at Jenifer Street causing the Williamson Street approach signals to have a "RED" indication which provide gaps in the westbound Williamson Street traffic flow.

The Jenifer Street traffic signal is an actuated traffic signal. The signal is activated by bus traffic approaching from Jenifer Street, pedestrian push buttons, and the newly installed vehicle detectors on Blount Street.

Recent hose and manual counts show that the Blount Street intersection is 56% short of meeting the adopted minimum numerical volume warrants for traffic signals.

Crash History

- No crashes have been reported at this intersection during the past five year period, 2008 thru 2012. 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 56% short of meeting the adopted minimum numerical volume for traffic signals.

Traffic signal computer models were created to determine the effect of installing a traffic signal at the Blount Street intersection. Due to the proximity of the Blount and Jenifer Street intersections, these two signals would need to be programmed to operate in tandem such as the traffic signals are on Park Street at the Wingra Drive and Plaenert Drive intersections. Because of the arrangement, activation at either Jenifer or Blount would need to trigger timing of the entire signal cycle, at both intersections. As a result, there will be additional delay to Williamson traffic due to the signal pair being activated more often than the Jenifer signal is currently. Because of its complexity, it will not be possible to coordinate these signals with the existing signal at Paterson Street for both inbound and outbound traffic flows.

At this time, Staff recommends maintaining the current stop sign control.

2. American Parkway & Buttonwood Drive

This intersection is located on American Parkway approximately 960 feet to the north of the signalized intersection at Eastpark Boulevard and approximately 6,100 feet to the south of an all-way stop controlled intersection at Hoepker Road.

Crash History

- During the five-year period 2008-2012, there have been a total of 2 crashes reported which were types considered to be correctable by traffic signals. No crashes were reported in 2009 or 2010.

Application of Traffic Signal Criteria

- Recent counts show that this intersection falls 77% short of meeting the adopted minimum numerical volume for traffic signals for the Eight-Hour warrants typically used to justify installation of traffic signals. The minimum criteria for the Peak Hour Warrant for traffic signals is met at this intersection due to the high number of PM peak right-turn traffic exiting from eastbound Buttonwood, even after reducing for high right turns. This is the same warrant which initially justified installation of a traffic signal at the Eastpark Boulevard intersection.

The University of Wisconsin is currently constructing a new UW Hospital on the northwest corner of Eastpark Blvd. and Portage Road. This development is expected to result in future increased traffic volumes at both the Eastpark and Buttonwood intersections. The Eastpark intersection currently experiences capacity issues during both the a.m. and p.m. peak hours. During the a.m. peak hour, the northbound left-turn onto Eastpark often results in queues extending south of East Washington Avenue, USH 151. During the p.m. peak hour, the eastbound right turn from Eastpark queues back as far as the East Terrace/Biltmoore intersection.

Staff recommends this intersection be approved for signals conditioned that the cost for installing the signals and any modifications to the intersection required by the City to facilitate installation of the signal be paid for by the benefitting commercial developments.

3. Regent Street & Roby Road

The Regent-Roby intersection is located approximately 500 feet west of the signalized intersection on Regent Street at Spooner Street, and approximately 1,300 feet to the east of the signalized intersection on Regent Street at Allen Street.

A petition requesting installation of a traffic signal was presented at the November 26, 2013 PBMVC meeting.

Crash History

- The crash history for the past five years, 2008 thru 2012, shows there has been only one crash reported at the Regent-Roby intersection. This crash involved a truck hitting a utility pole while in the process of making a right turn from westbound Regent onto Roby. This is not a crash considered to be correctable by a traffic signal. During this same five-year period, nine crashes were reported at each of the signalized intersections of Spooner-Regent and Allen-Regent. A traffic signal at Regent-Roby is not expected to improve traffic safety.

Application of Traffic Signal Criteria

- Recent manual and automatic hose counts show that this intersection is 88% short of meeting the adopted minimum numerical volume for traffic signals.

Intersection Geometric Considerations

- Concerns have been raised concerning the limited sight distance due to the grade of the hill and the location of the intersection just beyond the hill's crest. Traffic Engineering Staff have field verified that minimum safe stopping distance is available for approach speeds well in excess of the 25 mph posted speed limit and is available in excess of 35 mph.

- FHWA guidance for approach grades to signalized intersections recommends avoiding grades greater than 6 percent. For areas that experience accumulations of snow and ice, a maximum grade of ±4% is recommended for a length equal to the anticipated queue length for stopped vehicles. The approach grade to the Roby intersection from the east is approximately 10 percent. From the west, the approach grade is approximately 4 percent.

Staff recommends maintaining the current stop sign control, and improving the crosswalk on the eastern leg of Regent Street.

4. North Blair Street & East Johnson Street

The Blair-Johnson intersection is located approximately 900 feet northeast of the signalized intersection on Johnson Street at the Butler Street/Hamilton Street intersection, and approximately 600 feet to the southwest of the signalized intersection on Johnson Street at Blount Street.

The Technical Memorandum report prepared for the 2014 Johnson Street reconstruction project proposed installation of a traffic signal at the Blair Street and East Johnson Street intersection. The traffic signal corridor analysis, performed as part of the report study, concluded that the proposed traffic signal at Blair Street will improve operation for both pedestrians and traffic. Since Johnson Street is configured for one-way traffic, the new Blair Street signal can be configured to operate acceptably.

Staff recommends approval for installing a traffic signal control at Blair-Johnson as part of the 2014 reconstruction project.