



Real People. Real Solutions.

7533 Sunwood Drive NW
Suite 206
Ramsey, MN 55303-5119

Ph: (763) 433-2851
Fax: (763) 427-0833
Bolton-Menk.com

MEMORANDUM

Date: December 5, 2018
To: Bruce Westby, P.E.
From: Kevin Kielb, P.E.
Bryan Nemeth, P.E.
Subject: Bunker Lake Boulevard and Puma Street Intersection Control

At the request of the City, we are providing information related to the intersection traffic control at Bunker Lake Boulevard and Puma Street. The intersection control installed with the recent street reconstruction project includes an All Way STOP.

INITIAL INSTALLATION

Bunker Lake Boulevard and Puma Street are State Aid routes. During the plan approval process, these were the only legs of the intersection constructed, with Rabbit Street depicted as a “future roadway”. Because the travel path from Bunker Lake Boulevard to Puma Street doesn’t meet a 30 MPH design speed, STOP signs were required to be placed on these two intersection legs. A third STOP sign was depicted on the plans for Rabbit Street to complete the All Way STOP.

BACKGROUND

The Bunker Lake Boulevard and Puma Street intersection was one of the intersections reviewed as a portion of the Business Park Analysis. In the March 2017 Business Park Report Update, two types of control were reviewed for the intersection:

- Roundabout, and
- All Way STOP.

Both were found to be adequate for the anticipated short-term traffic volumes and long-term growth in the corridor.

TRAFFIC PATTERNS VS SAFETY

The primary traffic in this area will be along Bunker Lake Boulevard and Puma Street, with lesser traffic on Rabbit Street. Because of the intersection configuration, the primary traffic patterns end up being secondary to safety concerns. This is addressed in the MUTCD, 2B.4 Right-of-Way at Intersections.

YIELD or STOP signs should be used at an intersection if one or more of the following conditions exist:

- A. An intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law.

It is not recommended, due to safety considerations, that Rabbit Street be STOP or YIELD controlled and Bunker Lake Boulevard and Puma Street be uncontrolled. If neither Bunker Lake Boulevard or Puma Street had either STOP signs or YIELD signs, both the westbound vehicle and the southbound left/right turning vehicles would technically have the right-of-way. Each could proceed with their movement, and meet in the intersection.

INTERSECTION CONTROL PROGRESSION

For the 2040 traffic volumes, either a roundabout or an All Way STOP provide high Levels of Service for the intersection.

There is the potential for interim intersection traffic control to be implemented based on actual site and traffic characteristics. If adjustments were made, the progression would most likely be:

- YIELD sign for southbound Puma Street,
- Then STOP sign for southbound Puma Street, and
- Then All Way STOP at the intersection.

INTERSECTION ANALYSIS

The existing intersection control was selected based upon several factors, including: State Aid requirements, traffic forecasts, safety and anticipated traffic patterns. The selection was based on a traffic study that was completed prior to the reconstruction of Bunker Lake Boulevard and Puma Street and prior to the construction of Rabbit Street.

If the City is considering adjustments, the following guidance from the MUTCD should be considered when preparing an updated traffic study based upon the actual improved site conditions:

Engineering judgment should be used to establish inter-section control. The following factors should be considered:

- A. Vehicular, bicycle, and pedestrian traffic volumes on all approaches;
- B. Number and angle of approaches;
- C. Approach speeds;
- D. Sight distance available on each approach; and
- E. Reported crash experience.