



Staff Report

TO: City Council

FROM: Jeff Hart, Director of Public Works

DATE: July 20, 2021

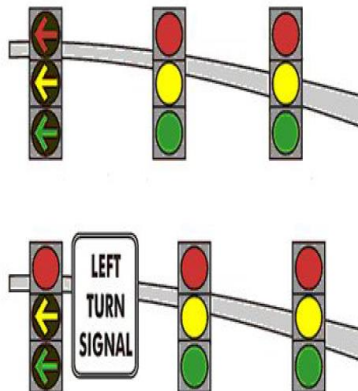
SUBJECT: City Council Direction for the Installation of Protected Left Turn Signal Phasing at the Intersection of Sixth Street and Beaumont Avenue, and Authorization to Pre-Purchase Four 24-4-100(N) Signal Poles and Mast Arms for Intersection Improvements in an Amount Not to Exceed \$100,000

Background and Analysis:

The intersection of Beaumont Avenue and Sixth Street has seen increased traffic congestion and delays over the past several years, prompting City staff to identify potential solutions to increase efficiency. The majority of the extended delays are a result of unprotected left turn movements on Sixth Street in both the east and west direction.

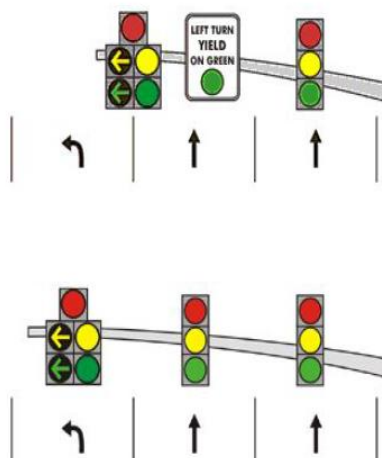
City staff engaged its traffic consultant, Minagar & Associates, Inc., to provide a technical assessment of the advantages of both protected and protected/permissive left-turn phasing (Attachment A). Protected left-turn phasing is the utilization of a traditional turn arrow which will only permit vehicles to make left turn movements while the arrow is green. See following graphic for illustration.

Protected Left-Turn Phasing



Protected/permissive left-turn phasing is the utilization of a five light signal head which not only permits vehicles to make left turn movements on a green arrow, but also allows vehicles to make left turn movements under a solid green light when safe to do so. See following graphic for illustration.

Protected/Permissive Left-Turn Phasing



Both protected signal phasing and protected/permissive signal phasing would yield efficiency enhancements at the subject intersections. City staff is recommending the installation of protected/permissive signal phasing for two reasons:

- Protected/permissive signal phasing will allow more vehicles through the intersection as vehicles can not only make left hand turning movements while the arrow is green, they may also make left turn movements on a solid green light when it is safe to do so; and
- Protected/permissive signal phasing provides motorists with a familiarity between what is currently permissible, and what will be permissible after the traffic signal upgrades. In order to ensure motorists are familiar with the protected turning movements, appropriate signage will be installed on the signal mast arm.

Additionally, City staff is requesting authorization to pre-purchase new traffic signal poles and mast arms for the intersections of Sixth Street and Beaumont Avenue, as well First Street and Beaumont Avenue. The signal improvements that are being recommended necessitate new poles and mast arms to accommodate the additional length required for the new signal heads. There is currently a nation-wide shortage on the availability of Federal Highway Administration (FHWA) traffic signal poles and mast

arms of at least six months. Authorizing the pre-purchase these signal poles will minimize the delay associated with the shortage. The estimated cost per signal pole and mast arm is \$25,000, for a total of \$100,000 for the poles needed to upgrade both intersections.

Fiscal Impact:

The cost of preparing the staff report is estimated to be \$1,000.

Recommended Action:

Provide City staff direction regarding the installation of protected/permissive signal improvements at the intersection of Sixth Street and Beaumont Avenue;
and

Authorize the pre-purchase of four 24-4-100(N) signal poles and mast arms for intersection improvements at Sixth Street and Beaumont Avenue, and First Street and Beaumont Avenue in an amount not to exceed \$100,000.

Attachments:

- A. Advantages of protected and protected/permissive left-turn phasing technical memorandum