



## City of Duluth

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### INTER-DEPARTMENTAL CORRESPONDENCE

To: Dave Montgomery, Chief Administrative Officer  
From: Taryn Erickson, Traffic Engineer  
Date: November 10, 2016  
Subject: Traffic Study of 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Avenues West at 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Streets

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A traffic volume and turning movement count was conducted by Alliant Engineering, Inc. on August 23, 2016 at the seven intersections identified in the subject line. The data was used to determine rerouted/forecasted volumes. The rerouted and forecasted (20 years) volumes were then used to perform a traffic operations and traffic signal warrant analysis.

The purpose of the traffic study was to determine if the traffic signals could be removed and replaced with stop controls. The rerouted volumes were analyzed with the existing signal operations and with through-stops for both current (2016) and forecasted (2036) scenarios. With through-stops, the streets would have free-flowing movements and the avenues would have stopped movements. The analysis showed that removing the signals made traffic operations more efficient. In all cases, the overall intersection Level of Service (LOS) remained at or improved to an LOS A. In addition to the traffic operations analysis, Warrants 1 through 3 (8 hour, 4 hour, and peak hour volumes) were analyzed for the rerouted volumes; the requirements for these warrants **were not met** for the current and forecasted scenarios at any of the intersections.

Based on the analyses and recommendations provided by Alliant, the traffic signals can be removed and converted to through-stops. In order to implement the removal of the traffic signals, the signals must first be covered for a minimum of 90 days so that observations can be made to observe impacts prior to permanently removing them. An optional Warrant 1 was also analyzed. This warrant states that any existing signals that do not meet 8 hour warrants at 80%, may be analyzed at 60%; existing signals that meet the 60% criteria but not the 80%, may be considered to remain as signals if further engineering judgment, findings, or studies may deem it necessary. The three signals on 2<sup>nd</sup> Street, along with the signal at 2<sup>nd</sup> Ave./3<sup>rd</sup> St. met this optional warrant. Therefore, if severe impacts are observed at any of these four intersections, the optional Warrant 1 could be used to justify keeping these signals in operation.

The conversion is planned for three phases over the spring and summer of 2017 as follows.

- Phase 1 will include notifying the public and area businesses/residences, covering the existing traffic signals, and installing the through-stops; traffic will remain one-way.

- Phase 2 will include relocating some of the new stop signs, restriping, and changing the signage to convert to two-way traffic.
- Phase 3 will include permanently removing the traffic signals if no severe impacts are noticed during each trial phase.

This will be a significant change to the downtown area; the public and area businesses/residences will be notified before each phase. We will prepare an initial press release with details regarding the conversion project and the different phases to be expected; an updated press release will then go out prior to Phases 2 and 3 being implemented. In addition to the press releases, a brief letter will be prepared and sent to area businesses/residences. A resolution will be submitted for the November 21 Council Meeting to ensure council support. We also plan to meet with the Greater Downtown Council to refresh project details prior to Phase 1.

Attachments: Map of Existing Configuration  
Map of Phase 1  
Map of Phase 2  
Map of Phase 3 (Final)

cc: Jim Benning, Director of Public Works & Utilities  
Cindy Voigt, City Engineer  
Cari Pedersen, Chief Engineer of Transportation  
Pakou Ly, Public Information Coordinator  
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Kristi Stokes, President of Greater Downtown Council