

Office of the City Engineer

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April 21, 2017

MEMO

To: John C. Rooney, P.E.

Re: Traffic Study - Intersection Control of 3 "T" Intersections on Belmont Avenue.

From: Ara P. Molitor, P.E.

INTRODUCTION

Purpose: Determine if "Control" is required at the intersection of:

- Belmont Ave. and Hansen Ave.
- Belmont Ave. and Thor Ave.
- Belmont Ave. and Carmel Ave.

Method: Field observations, accident analysis, and safe approach speed analysis.

FIELD OBSERVATIONS

The intersections of concern are all uncontrolled "T" intersection; with Belmont Ave.; Hansen, Thor & Carmel all form stems of the "T" and run east and west. The intersections form the west roadway boundary of the neighborhood to the south of McKinley Middle School. The residential neighborhood is bordered by: Kinzie Ave. to the south, the school to the north. Kinzie Ave. also makes up the eastern boundary as it heads down hill to West 6th Street. The residential neighborhood makeup is predominantly single family homes on very tight 40'x115' lots. Alleys running east and west also split the blocks in half east of Belmont Ave.

Other than on Belmont Ave. most of the intersections in the neighborhood are Stop Controlled. These are usually 2-way stops although a few odd shaped intersections are "all-way" stops. Kinzie Ave. does not stop through the area in question. Graham St. and Chicago St. do not stop until they intersect with Kinzie.

ANALYSIS

It was observed during the Field Observation period that traffic is extremely light at all times with the exception of 30 minutes in the morning and approximately 45 minutes in the afternoon during school days for drop off and pick up of students. It was also observed at these same times that there is a heavy pedestrian volume which predominantly moves along Belmont to Kinzie and neighborhoods to the west.

These intersections will **not** meet any analytical criteria for the addition of Yield or Stop control based on volume or accidents alone, based off experiences with similar studies. A traffic count was not taken with this study. Accidents reports were requested for the entire area for all of 2012 to the present. It was determined that the entire area accident reports would help to show a better picture of problem areas and not just a number of accidents for Belmont and the adjoining three streets. In this entire area there were a total of 32 accidents reported in the 5 plus years requested. Of these accidents, 14 accidents involved injury, and no reported fatalities. Unfortunately, **none** of the reported accidents are **correctable** by the installation of any type of traffic control. All accidents were either inattentive driving (most of the 32) or weather related.

The final criterion analyzed is “**safe approach speeds**” or “**safe stopping distances**” (SSD) for all legs of the intersection. The neighborhood is made up of single family residences on approximately 40’ by 115’ lots. The setbacks for the houses are on average 30’ from the face of curb off of the three side streets (the front of houses) and around 20’ to 25’ from the face of curb off of Belmont Ave. (side yards). This geometric layout really limits the vision of oncoming traffic in any direction at all of the intersections. For 25 MPH the SSD is 113’ +/- which is unobtainable with the lot being 115’ long with a 5’ walk and 5.5’ terrace. That puts the house squarely in the way in any direction. 25 MPH is the speed required for the “non-stopping” direction at a controlled intersection. All of the intersections were analyzed in every direction and all failed to obtain safe approach speeds for an uncontrolled intersection.

- Under the No Control section of “Guidelines for Intersection Control Devices” City of Racine, Wisconsin 1-22-98; ***“If sight distance is restricted and cannot be improved, or if there is a history of right angle accidents for which other contributing factors cannot be determined, consideration should be given to use a yield sign or two-way stop sign.”*** This would be the case for all of these intersections.
- This portion of the analysis actually **warrants** the use of a **Stop Sign** at 2 out of the 3 intersections and a Yield Sign for the 3rd intersection. But I would caution against using a yield sign on the 3rd intersection.

RECOMMENDATIONS

This study recommends the installation of Stop Signs (3) one on each of the following: Hansen Ave., Thor Ave. and Carmel Ave. as they intersect with Belmont Avenue.