



---

## Agenda Memo

Crest Hill, IL

---

<b>Meeting Date:</b>	January 23, 2023
<b>Submitter:</b>	Ronald J Wiedeman
<b>Department:</b>	Engineering
<b>Agenda Item:</b>	Theodore Street & Gaylord/Cedarwood Eastbound Left Turn Signal Addition

**Summary:** The existing signalized intersection of Theodore Street & Gaylord/Cedarwood currently does not provide a protected left turn lane and arrow. The other 3 legs of this intersection do have existing green turn arrows. Below are a few issues at this intersection that are created due to this condition.

1. The existing condition provides a reduce amount of green time for traffic heading eastbound than what is seen for westbound traffic.
2. As traffic volumes increase in the future this condition will increase delay times for eastbound traffic.
3. As traffic volume increase the need for a protected left turn lane for both the east and westbound traffic will be needed due to the increase of left turn movements.

Staff has reviewed the existing condition and below are potential solutions;

1. Do nothing.
2. Use the existing pavement width to create a protected left turn lane for both eastbound and westbound traffic and install a new eastbound left turn signal. This solution will create a single through lane for both east and westbound traffic.
3. Widen the existing pavement to provide for two through lanes and a single left turn lanes for both the eastbound and westbound traffic.

Staff hired Christopher Burke to complete a Traffic Analysis to review solution 1 (existing conditions) and solution 2 above. The analysis concluded that solution 2 will provide the same delay times with today's traffic and future 2050 traffic volumes. In conclusion, this intersection configuration from solution 2 will provide the same capacity today as in the year 2050 while also providing protection for traffic making all left turn movements.

The 3<sup>rd</sup> solution was not analysis in the traffic study because it would function significantly better than option 1 or 2 due to its increased capacity to handle traffic. The existing and future

traffic volumes are not anywhere near the the capacity an intersection of this design can handle. This solution was eliminated based on cost/benefit analysis. The cost to widen the pavement, install new traffic signal poles and utility relocations are not worth the benefit of the increased and unneeded capacity. Construction estimates would be over \$850,000 not including existing utility relocation costs.

Therefore, staff is recommending solution 2 listed above. Based on the capacity analysis and the cost/benefit analysis.

The construction cost for this work is estimated between \$120k-\$150k and will include the required traffic signal modifications of the existing signals along with the remarking of the intersection to provide an eastbound protected left turn lane and the installation of illuminated street signs. The plan would be to include this work in the 2023/2024 MFT program.

The resurfacing of the intersection would be handled under a separate contract as discussed under the city roadway and funding discussion.

Staff would also like to council to consider approval of a design contact at the next council meeting so the design for this work can be completed during the winter/spring with construction planned in the summer of 2023. The amount for this work is \$29,500 which I have attached for your review. Funds are available in the current budget to pay for this work.

**Recommended Council Action:** Provide direction to staff in regard to adding this project to the MFT program for fiscal year 2023-2024

To execute a professional services agreement with Christopher Burke to perform design engineering services for the Theodore Street & Gaylord/Cedarwood Eastbound Left Turn Signal Addition for an amount of \$29,500.00.

**Financial Impact:**

**Funding Source:** MFT and General Fund

**Budgeted Amount:** \$150,000 Construction(MFT 2023/2024 Budget);\$30,000 Design

**Cost:** Construction TBD & Design Engineering \$29,500

**Attachments:**

Memo\_Theodore Gaylord\_Gaylord\_Cedarwood\_11302022-Final

Theodore at Gaylord Option No 2

Crest Hill Theodore and Gaylord Final Design:121622 (002)

