

Memorandum

Subheader

ISG

To: City of Mankato

From: ISG

Date: June 17, 2024

Subject: South 2nd Street Turn Lane Warrants

Using the ITE Trip Generation Manual, 11th Edition, for a Hotel in a Dense Multi-Use Urban area (moderate size urban area downtowns), the site is anticipated to generate up to 87 trips during the peak hours of the adjacent street traffic. Most of the exiting traffic is for alternate destinations, so the site generated trips were added to the existing traffic volume.

	AC Hotel vehicle trips	Element Hotel vehicle trips	Total Site vehicle trips	Total 2 nd Street Vehicle trips
AM Peak hour	49	38	87	373
PM Peak hour	33	26	59	345

Traffic due to on-site restaurants and other hotel services are included in the trip generation estimates.

Per NCHRP 457 Figure 2-6 (determining the need for a major-road right-turn lane at a two-way stop-controlled intersection), a right turn lane is not warranted, using the anticipated generated trips and assuming the following:

- speed limit of 30 MPH
- daily existing traffic volume of 5,200 vehicles per day (draft 2023 AADT is 5,191 per MnDOT Traffic Mapping Application),
- 55% of traffic is traveling SE during AM or PM peak hour of traffic
- 10% of daily traffic occurs during the peak hours

For reference, MnDOT's turn lane policy at urban intersections is that turn lanes should be considered whenever construction is economically feasible, taking into account amount of right of way needed, type of terrain, and environmentally or culturally sensitive areas. Constrained right-of-way limits space for turn lanes and right-of-way acquisition would be required to construct a right-turn lane, assuming the existing sidewalk widths and neutral offset left-turn lanes are maintained. MnDOT also provides turn lane warrants for undivided roadways, several of which are not applicable to low speed roadways (less than 45 MPH). Of those that are applicable to South 2nd Street, adverse road grades, limited sight distance, and nearby railroad crossings are not present to warrant a right-turn lane.

Therefore, turn lanes are not warranted for the development due to the low (30 MPH) travel speeds and low proposed volumes (373 vehicles, one-way, during peak hour) on South 2nd Street.