Memorandum

602 South Front Street Trip Generation

To: City of Mankato

From: Corona Woychik, PE, PTOE

Date: February 24, 2026

Subject: 602 South Front Street Trip Generation and Turn Lane Warrant Analysis

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The following is a Trip Generation Memorandum for the proposed 602 South Front Street development project to be located within the block bordered by S. Riverfront Drive, Warren Street, S. Front Street, and W Liberty Street in Mankato, Minnesota. This development will consist of two mixed-use buildings Parking will be handled via on-street parking along S. Front Street as well as a parking garage that has 250 spaces.

TRIP GENERATION

The proposed development is assumed to consist of two buildings with an onsite parking garage. Building one will have a 160 room Apartment building located on the upper floors with 21,300 sf of retail space and 10,800 sf of restaurant space divided up for two tenants. Building two will consist of 37,000 sf of office space. Vehicular access to the proposed development along S Front Street will be provided via Warren Street, and W. Liberty Street. Refer to the attachments for a copy of the preliminary site plan. Average daily, AM peak hour, and PM peak hour trips for the proposed development land use options were estimated using the ITE Trip Generation Manual, 11th Edition. **Table 1** provides a summary of the trip generation potential for the proposed wrestling facility.

TABLE 1 TRIP GENERATION

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Multifamily Housing (Mid-Rise) (221)	160 Apartments	469	6	39	31	11
Coffee/Donut Shop without Drive-thru (936)	2,500 sf	1334	119	114	41	41
High-Turnover (Sit Down) Restaurant (932)	4,900 sf	525	26	21	27	17
Strip Retail (822)	21,400 sf	1165	31	20	71	71
General Office Building (710)	37,000 sf	401	49	7	9	44

Using the ITE Trip Generation Manual, 11th Edition, and assuming a Dense Multi-Use Urban context (moderate-size urban downtown area), the proposed site is anticipated to generate up to 432 trips during the AM peak hour of adjacent street traffic.

Trips associated with the coffee shop, restaurant, and retail uses are expected to consist of a combination of new trips and pass-by trips.

The site plans indicate a coffee shop size of 5,800 square feet; however, the average size of a coffee shop without a drive-through in the ITE Trip Generation Manual, 11th Edition is approximately 2,000 square feet. Applying the full 5,800-square-foot area resulted in an estimate of more than 275 entering trips during the AM peak hour, which is considered excessive for this context. As a result, the coffee shop was modeled at 2,500 square feet, with the remaining 3,300 square feet assumed to function as seating or open space that would not independently generate additional trips and would primarily serve patrons associated with other on-site uses.

Housing and office-related trips are anticipated to be entirely new trips. Overall, approximately 25 percent of the site-generated trips are assumed to be pass-by trips, with the remaining 75 percent classified as new trips. Some internal capture is also anticipated during both the AM and PM peak hours, which would further reduce traffic added to the adjacent street network. Internal capture was not explicitly calculated for this analysis; therefore, the estimated traffic added to the adjacent street network is considered conservative.

After accounting for pass-by trip reductions, approximately 324 trips are anticipated to be added to the adjacent street network during the AM peak hour. For comparison, the site previously operated as a Walgreens with several small independent retail shops, which, based on the ITE Trip Generation Manual, 11th Edition, was estimated to generate approximately 350 vehicles during the AM peak hour.

TRIP DISTRIBUTION

The trip distribution used in assigning the site traffic for the proposed development was estimated based on a combination of existing traffic patterns, population centers in the vicinity of the study area, and engineering judgement.

It was assumed that the site trips will be regionally distributed as follows:

- 35% to/from the north via S Riverfront Drive
- 35% to/from the south via S Riverfront Drive
- 15% to/from the east via Warren Street
- 10% to/from the west via Poplar Street
- 5% to/from the north/south via Front Street

The site traffic along S Riverfront Drive is expected to utilize W Liberty Street, and Warren Street to access the proposed development. The trip distribution was applied to the anticipated trip generation to assign trips to the network. Refer to the attachments for an illustration of the site's trip assignment.

TURN LANE WARRANT ANALYSIS

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 at the intersection of S. Riverfront Drive and W. Liberty Street, using the anticipated generated trips and assuming the following:

- speed limit of 30 MPH
- daily existing traffic volume of 11,500 vehicles per day (draft 2024 AADT is 11,503 per MnDOT Traffic Mapping Application),
- 55% of traffic is traveling NE during AM or PM peak hour of traffic
- 10% of daily traffic occurs during the peak hours

Refer to the attachments for a visual of anticipated traffic numbers plotted on Figure 2-6.

Additionally, MnDOT's turn lane policy at urban intersections is that turn lanes should be considered whenever construction is economically feasible, considering 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 S Riverfront Drive, 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 (135 vehicles, one-way, during peak hour) on S Riverfront Drive.

CRASH HISTORY

Crash history was analyzed using MnCMAT2 website. Over the last 10 years the number of crashes at each intersection with the corresponding crash rate per million vehicles entering. The statewide average for crashes per million entering vehicles in Minnesota is 0.5 and all of these intersections fall below that rate and therefore do not represent a significant safety concern.

- S. Riverfront Drive & Warren Street – 32 Crashes (0.45 Crash Rate)
- Warren Street & S. Front Street – 15 Crashes (0.43 Crash Rate)
- S. Front Street & W. Liberty Street – 4 Crashes (0.29 Crash Rate)
- S. Riverfront Drive & W. Liberty Street – 10 Crashes (0.18 Crash Rate)

CONCLUSION

The proposed 602 South Front Steet development was reviewed to determine the trip generation potential and the potential traffic impacts from the proposed development. Based on the low trip generation potential and alternative routes provided to access the site, it is expected that the development will have minimal impacts to the surrounding roadway network. Based on the estimated trip generation potential and alternative routes provided to access the site, its is expected that the existing roadway links would be able to accommodate the new trips generated by the development.

Attachments: Preliminary Site Plan
Site Trip Assignment Figure
Right-Turn Lane Warrant Figure

I HEREBY CERTIFY THAT THESE CALCULATIONS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

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South Front Street Trip Generation and Turn Lane Warrants Memo
Mankato, Minnesota
Engineer's Project Number: 25-33587
Dated this 24th day of February 2026