

Summary

University Avenue Traffic Study

City of Windsor Heights, Iowa
Prepared by MSA Professional Services, Inc.
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Introduction:

Alta Planning & Design provided the City of Windsor Heights with a concept plan for reconfiguring University Avenue to include multi-modal features. At the City's request, MSA completed a quantitative traffic analysis of the existing conditions and the proposed concept plan conditions on University Avenue between 73rd Street and 63rd Street.

Data Collection:

MSA collected traffic counts at six intersections along University Avenue in April 2016. Turning movement counts were processed to determine the network AM and PM peak hours to use in the traffic analysis. To ensure that the data collected in April was representative of the corridor's traffic patterns, average daily traffic (ADT) counts were collected over two weeks in May 2016 at two locations along University Avenue. Based on the ADT counts, the turning movement counts represented the general traffic trends along the corridor. Therefore, the traffic analysis proceeded by using April's turning movement count data.

Based on the collected ADT counts, the weekday ADT along University Avenue ranges between 14,200 and 15,700.

Roadway Conditions:

A review of the conditions for the existing and Alta Planning & Design concept plan roadway geometrics was completed to understand the main differences and to best represent the conditions in the traffic modeling software.

Existing

University Avenue currently is an urban, minor arterial. The four-lane roadway provides a central two-way left-turn lane (TWLTL) between 73rd Street and 70th Street. On-street parking exists between 66th Street and 65th Street. Currently, there are no designated bike lanes or marked shared-use lanes on the roadway. Pedestrians and bicyclists are provided concrete sidewalks on both sides of the roadway.

Concept Design

The Alta Planning & Design concept plan provides a road diet reconfiguration that offers multi-modal and safety features along University Avenue. The road diet configuration looks to reduce the existing four-lane roadway into a three-lane roadway, with two through lanes and one central TWLTL. Other concept plan features include additional on-street parking, protected bike lanes, and raised medians. Typically, road diets are recommended on roadways that service less than 20,000 vehicles per day, which suggests that University Avenue may provide suitable operations with a road diet configuration.

Traffic Operational Analysis:

Traffic operational and capacity analysis was completed for each subject intersection along University Avenue for the existing and concept plan geometries using Synchro 9 software.

Existing

Analysis of the existing traffic volumes show that the intersections within the study area operate at acceptable conditions during the AM and PM peak hours. The heaviest delay occurs at the University Avenue intersections with 73rd Street and 63rd Street.

Concept Plan

Although analysis shows that operations slightly worsen compared to the existing geometric operations. Primarily, the lower volume movements experience higher delay due to the change of geometrics on University Avenue. Although several movements drop below desired levels of services, overall intersection operations still average acceptable operations.

Conclusion:

Existing traffic conditions have acceptable intersection levels of service. In comparison, the traffic operations subject to the Alta Planning & Design concept plan experience slightly worse intersection levels of service with several low-volume movement operations operating at or below LOS D. If designed appropriately, a road diet may function well on University Avenue and improve the corridor's safety and mobility.

The City of Windsor Heights is encouraged to consider MSA's traffic analysis Avenue prior to determining a proposed concept plan for the corridor. The Council should consider the impacts that design elements have on their goals for the corridor, including the impacts to multimodal accommodations, mobility, safety, economic growth, and functionality. Once the overall goals and priorities for the area are identified, a final concept plan can be customized to fit the needs of the City. Please review the full Traffic Analysis Report written by MSA for some initial discussion regarding the concept plan design details.

Overall Intersection Level of Service (LOS) Summary Table:

Intersection	Existing Conditions		Concept Plan Conditions	
	AM	PM	AM	PM
73 rd Street	C	C	C	C
HyVee Access	A	C	B	B
70 th Street	B	C	C	C
69 th Street	A	B	A	B
66 th Street	B	B	C	C
63 rd Street	C	C	C	D