



Study Purpose

Olsson Associates was tasked with performing multiple analyses at the intersection of 108th Street & Oak Street in Omaha, Nebraska. These included signal warrants, speed data analysis, crash data analysis, sight distance analysis, and a gap study. The purpose of the study was to determine if the existing traffic signal was justified at the intersection.

Data Collection

Olsson obtained multiple sets of traffic data related to the intersection:

- Vehicular and pedestrian counts
- Speed data along 108th Street
- Intersection sight distance measurements
- Crash data for most recent 5 years (1/13 – 4/18)
- Gap Study

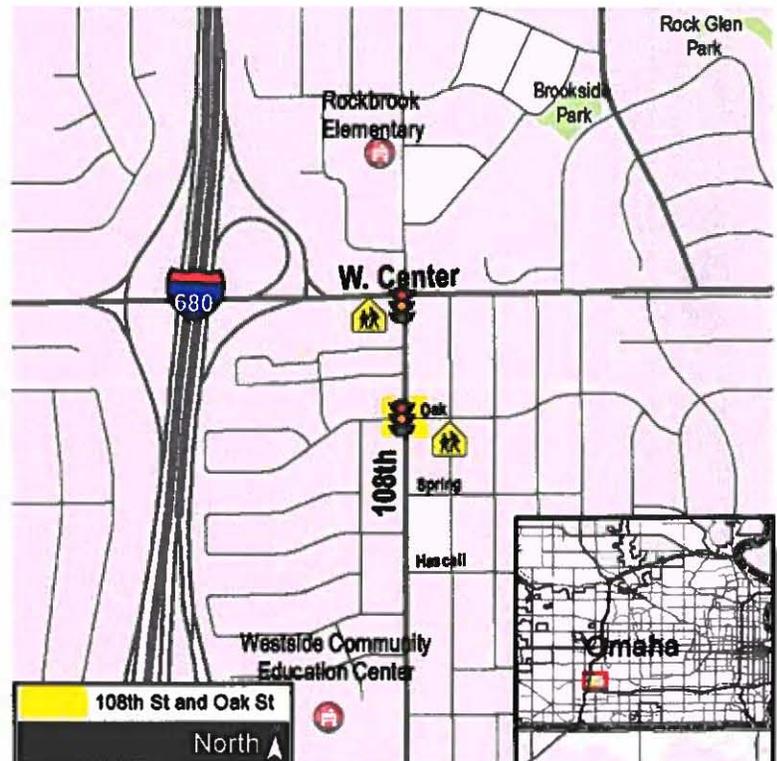
Counts occurred during school hours on Thursday, 5/3/18 and Tuesday, 5/8/18 under clear weather conditions. Data collectors took care to remain inconspicuous to not skew counts by their presence. **During peak of pedestrian activity there were four school children and six adults crossing 108th Street. Olsson also observed a similar number of adequate gaps in traffic during the same interval.**



A view of the study intersection (looking north)

Warrant Evaluation

Traffic signal warrants are found in the MUTCD, which is published by the FHWA and includes national standards for traffic control device implementation. Signal warrants from this publication were evaluated against vehicular and pedestrian volumes. **None of these warrants were satisfied.**



Warrant	Satisfied? (Y/N)	
	Cond A	Cond B
Warrant 1 (Eight-Hour Vehicular)	N	N
Warrant 2 (Four-Hour Vehicular)	N	
Warrant 3 (Peak-Hour Vehicular)	AM	PM
	N	N
Warrant 4 (Pedestrian Volume)	N	
Warrant 5 (School Crossing)	N	

* Warrants 6-9 were not applicable



Speed Survey

Vehicular speed was measured along 108th Street. The measured 85th percentile speed is approximately 35 mph. Posted speed is 30 mph. Note that the 85th percentile speed is 38 mph if only considering northbound traffic.

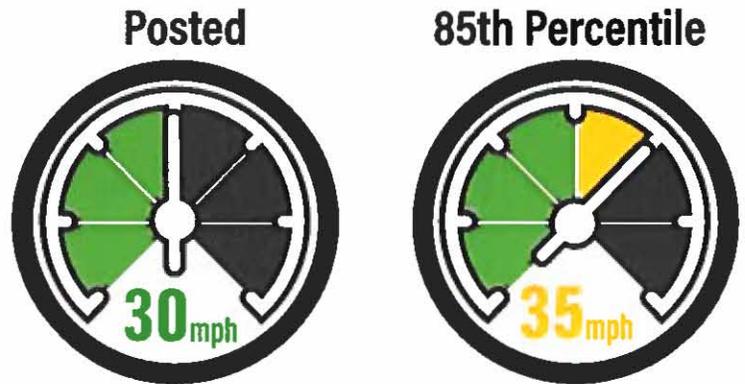
Sight Distance

Sight distance was evaluated to verify if vehicles have clear line of sight to each other. This analysis was conducted using the measured speed. Vehicles traveling along 108th Street have adequate sight distance to stop before an unexpected event in front of them.

There are sight obstructions on the northeast and northwest corners of the intersection, but a vehicle could stop at the designated location and then edge forward when possible. Therefore, motorists have a clear view from Oak Street to enter the intersection.

Crash Analysis

Crash data showed a northbound rear-end crash pattern. This was related to excessive delay along 108th Street during interstate construction when 108th Street served as a detour to access the interstate. Rear ends reduced significantly outside that time period. No crashes were reported while the signal was turned off in 2017. No other crash patterns were identified.



RECOMMENDATIONS

Based on the analyses of this study, recommendations at this intersection include the following:

- ✓ Remove the signal and convert the intersection to two-way stop control.
- ✓ Stakeholder Coordination:
 - Notification of removal
 - Discussion of other potential routes for children walking to school.
- ✓ Improve accessibility along alternate routes as needed.
- ✓ Where possible, remove obstructions to increase intersection sight distance.