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MEMORANDUM

TO: Jean Keely, PE
City of Blaine

FROM: Thomas A. Sohrweide, PE, PTOE

DATE: May 17, 2017

RE: 129th Avenue Traffic Study
SEH No. BLAIN 140923

We have conducted a review of 129th Avenue with regard to neighborhood concerns over traffic speed from the TH 65 East Frontage Road to Radisson Road. We reviewed roadway design, traffic signing, traffic volume and speed and developed future traffic volumes on this roadway when 129th Avenue is ultimately connected to Lexington Avenue.

Recommendations

Based on our review, we have the following recommendations:

1. Install a white edge line to create a shoulder in the median areas.
2. Install a yellow edge/center line adjacent to both sides of the medians to create an 11 foot traffic lane.
3. Prohibit parking in the median areas.
4. Increase enforcement at the critical time periods.
5. Install crosswalk pavement marking to legally establish the midblock crosswalk.

Background

129th Avenue is a City of Blaine collector roadway which is also a Minnesota Department of Transportation State Aid Roadway. As a collector roadway, 129th Avenue is intended to provide mobility and access from neighborhoods to the arterial street system. The location of this roadway fits into the City's Transportation Plan which indicates that collector streets should have a spacing of ¼ to one mile based on the level of development. 129th Avenue is ½ mile north of 125th Avenue and one mile south of Bunker Lake Boulevard, thereby fitting in as a needed link in the transportation system.

Between the TH 65 East Frontage Road, 129th Avenue was constructed in three segments over time, with each segment having a different design. The segment from the Frontage Road to east of Chisholm Street (Segment 1) was constructed in 1976. This segment has a 30 mph speed limit and is 43 feet wide with barrier curb and parking allowed on both sides and sidewalk on the south side from the Frontage Road to Baltimore Street.

The segment from Radisson Road to west of Isanti Street (Segment 2) was constructed in 1996. This segment has a 30 mph speed limit with a 20 foot wide center median that has barrier curb and a sidewalk. The east and westbound travel lanes are 15 feet wide with surmountable curb and parking prohibited in the westbound direction.

The above two segments were connected in 2015 (Segment 3). The connection provides continuity from west of TH 65 to east of Radisson Road. This segment has a 30 mph speed limit with a 6 foot wide center median that has barrier curb and 17 feet wide east and westbound traffic lanes with surmountable curb and sidewalk on both sides of the street.

Traffic Signing / Pavement Marking

Traffic signing on this roadway, consists of 30 mph speed limit signs west of Chisholm Street for eastbound traffic and west of 129th Lane for westbound traffic. A midblock pedestrian crossing is signed but does not have pavement marking, west of Isanti Street between Segments 2 and 3.

The intersection of 129th Avenue/East Frontage Road is controlled by an all-way stop and has marked crosswalks. On the east end, the intersection with Radisson Road is controlled by a traffic signal and has marked crosswalks. All side streets in this area are controlled by stop signs.

Segment 1 is the only area with centerline pavement marking, which is a dashed yellow centerline.

Traffic Volume/Speed

Traffic volume and speed data was collected at three locations in March 2017.

- West of Chisholm Street
- West of Isanti Street
- East of Isanti Street

The data collected is summarized in the table below and also shown on the attached map.

Traffic Count/Speed Data - 129th Avenue

Location	Direction	Average Daily Traffic (By Direction)	Average Daily Traffic	Speed		Speed Combined	
				Mean (mph)	85th Percentile (mph)	Mean (mph)	85th Percentile (mph)
West of Chisholm Street – Segment 1	EB	991	1,844	34	40	33	38
	WB	855		31	35		
West of Isanti Street – Segment 3	EB	805	1,392	29	34	30	36
	WB	589		32	38		
East of Isanti Street – Segment 2	EB	702	1,189	31	35	32	36
	WB	489		33	38		

These daily traffic volumes are well within the limits for a collector street which can be expected to carry up to 10,000 vehicles per day.

The vehicle speeds, while higher than desired, are not abnormal for a 30 mph roadway. Also of note is that the speeds are higher on the west end in the area without a center median.

Through the Metropolitan Council’s Regional Travel Demand Model, we developed a forecast for the daily traffic volumes on 129th Avenue with and without a future connection of 129th Avenue to Lexington Avenue. They are summarized below.

Daily Traffic Forecasts with/without 129th Ave Connection to Lexington Avenue

Roadway	Location	2015/2017 Count	2040 with Connection to Lexington Avenue	2040 w/o Connection to Lexington Avenue
129th Ave	West of Radisson	1,900	4,000	3,900
	East of Radisson	1,900	4,100	2,000
	West of Lexington	240	2,200	2,300

The traffic forecast for year 2040, while double the existing traffic volume, is still consistent for a collector road with this type of design. The increase in traffic volume appears attributable to traffic volumes also doubling on Radisson Road and on 125th Avenue to over 20,000 vehicles per day.

Traffic Calming Alternatives

When dealing with neighborhood traffic concerns, traffic calming techniques are typically considered. Important concerns with the use of traffic calming is to ensure that whatever is used, maintains the roadway as intended by its design and function and to ensure that whatever is used does not create problems on other streets.

Across the country, the most commonly used techniques are stop signs and speed humps. With both of these techniques, when only one isolated installation is used there is generally little or no impact. However, when used in groups, they are often found to be effective.

Speed humps cannot be used due to State Aid requirements. Other concerns with regard to their use involves snow plowing, street sweeping, impact to school buses and emergency vehicles and vehicle noise to nearby properties.

All-way stop control, when used, should meet the warrants as established by the Minnesota Manual on Uniform Traffic Control Devices. To meet this warrant traffic volume thresholds need to be exceed for 8 hours of a day. The traffic volumes at this road’s intersections do not exceed the needed volumes.

Pavement marking can be used to narrow vehicle lanes to better guide and control traffic flow. In areas with roadway curves, better guidance to keep vehicles in their lane controls their speed. Likewise, narrower traffic lanes can be used to control vehicle speeds. At the present time, pavement marking is not present where the medians exist and if vehicles are not parked, drivers are presented with a wide 15 – 17 foot traffic lane. This not only minimizes the need for driver attention, but allows them to drive faster through the curves than the 30 mph design speed.

While parking is allowed on 129th Avenue, except for the north side of segment 2, the roadway widths do not provide for a traffic and parking lane per State Aid Standards. This is evidenced when parked vehicles park up on the surmountable curbing. The presence of parking is often a positive influence on speed reduction by narrowing the roadway.

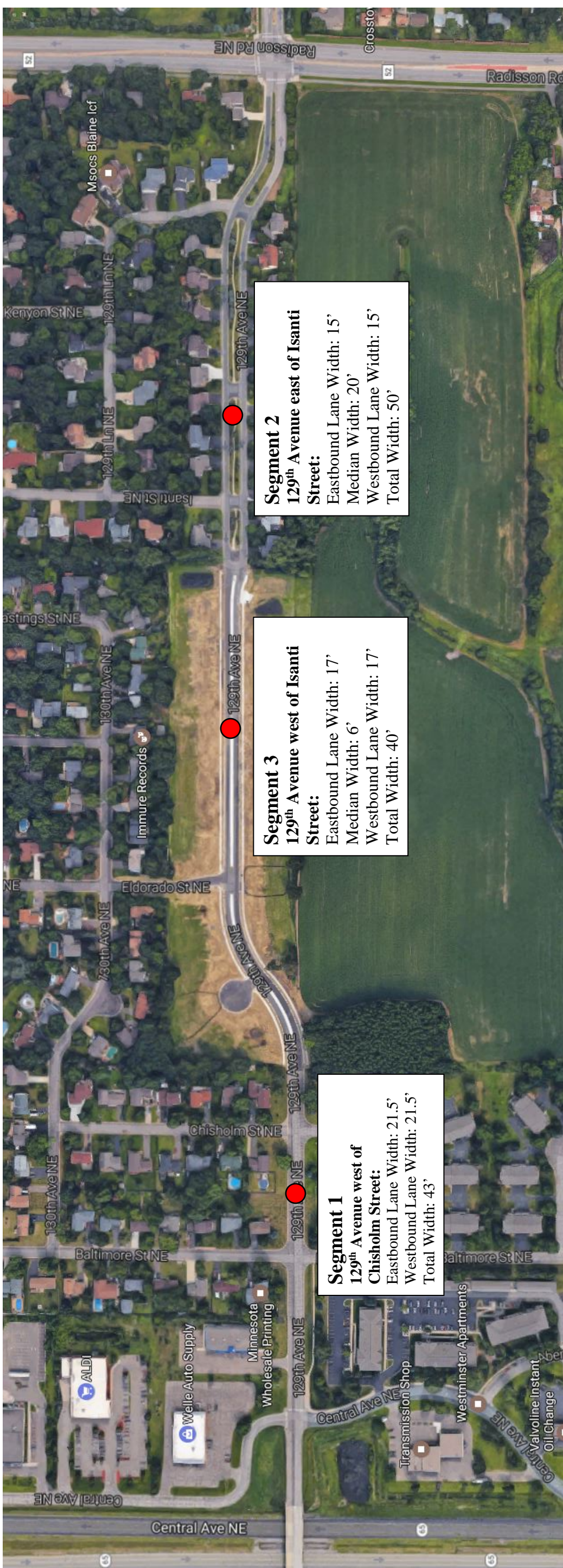
Due to State Aid standards, we recommend that parking be prohibited on both sides of 129th Avenue from Chisholm Street to Radisson Road. We anticipate that this would receive concurrence from the Fire Department. We further recommend that pavement marking be installed in Segments 2 and 3 to provide a positive vehicle path through these areas. The marking should be a yellow centerline approximately 2 feet from the median with an 11 foot traffic lane to a white edge line which marks a 2 to 4 foot shoulder area.

The original means for traffic speed control is enforcement. This can be effective when dealing with local traffic when done randomly and can be done efficiently when it can be focused on particular time periods. From the speed data, the greatest percentage of traffic speeds over 35 mph over the length of this roadway, occurs from 7:00 – 8:00 AM and from 3:00 – 7:00 PM. We therefore recommend consideration of traffic speed enforcement during these weekday time periods.

The sidewalk in the median in Segment 2 is not typical but is functional with the present and future traffic volumes. To use it residents in that segment likely cross to the sidewalk at midblock locations. This does not legally provide the pedestrian with the right-of-way. However, with that crossing to the median being made across one direction of traffic flow, the crossing is more easily made for the pedestrian since there are more gaps in traffic. It is our understanding that when this segment of roadway is reconstructed, consideration will be given to narrowing the median and installing sidewalks on both sides of the roadway similar to Segment 3.

Also as noted above, the signed crosswalk is not marked with pavement marking. With this crossing not being at an intersection, and to be a legal crosswalk, it is required to be marked.

Attachment



Segment 1
129th Avenue west of Chisholm Street:
 Eastbound Lane Width: 21.5'
 Westbound Lane Width: 21.5'
 Total Width: 43'

Segment 3
129th Avenue west of Isanti Street:
 Eastbound Lane Width: 17'
 Median Width: 6'
 Westbound Lane Width: 17'
 Total Width: 40'

Segment 2
129th Avenue east of Isanti Street:
 Eastbound Lane Width: 15'
 Median Width: 20'
 Westbound Lane Width: 15'
 Total Width: 50'

Traffic Count Data - 129th Avenue

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				Mean (mph)	85th Percentile (mph)	Mean (mph)	85th Percentile (mph)
129th Avenue:	EB	991	1844	34	40	33	38
	WB	855		31	35		
West of Chisholm Street	EB	805	1392	29	34	30	36
	WB	589		32	38		
East of Isanti Street	EB	702	1189	31	35	32	36
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