



DPS/Engineering
Allan E. Schneck, P.E., Director

From: Paul G. Shumejko, MBA, M.S., PTOE, P.E., Transportation Engineering Manager
To: Kristen Kapelanski, AICP, Planning Manager
Date: March 9, 2020
Re: Rochester Hills Research Park, City File #18-021, Sec 21
Planning Commission Traffic Questions

PGS

Based upon the Planning Commission meeting held on Tuesday, February 18, 2020, Engineering Services has further reviewed the proposed PUD plan, with input from the Road Commission for Oakland County (RCOC), for the above referenced project.

Traffic/Roads

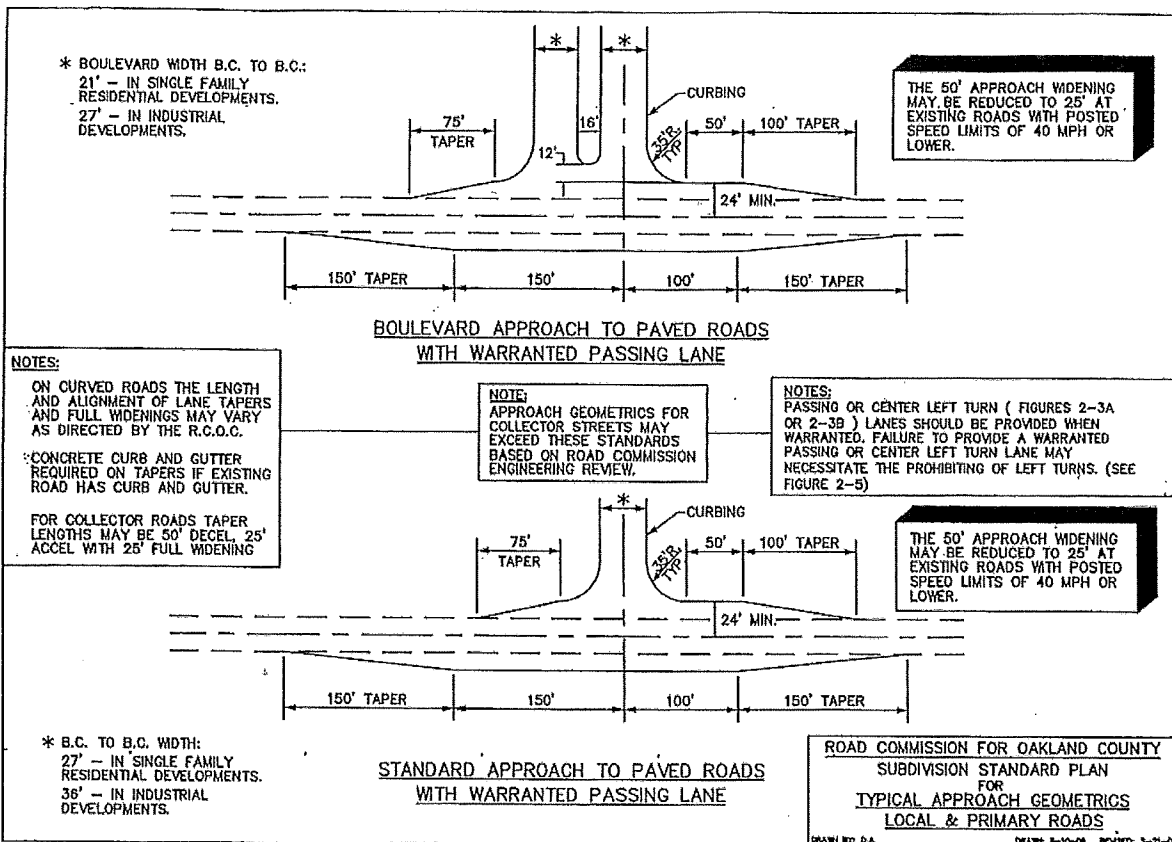
1. Based upon the data compiled within the Traffic Impact Study, a continuous center left turn lane (CLTL) across the property frontage was not warranted.
2. Had one been warranted, there are several geometric constraints that would make extending the existing CLTL very challenging as a standalone isolated project.
 - a. Due to the required CLTL taper transition lengths (RCOC detail attached for reference), they would essentially overlap each other, thus requiring the CLTL to extend from its current point of beginning just south of Drexelgate Pkwy and continue north to Dressler Ln (~ 1,600 feet). The existing traffic signal at Livernois Rd and Horizon Ct would also need to be replaced and upgraded to a box-span design with full signal phasing.
 - b. Based upon rules of thumb, the estimated ball park costs (construction costs only) are:
 - i. Traffic Signal Replacement ~ \$200k
 - ii. CLTL Extension ~ \$500k
3. The following improvements may be included on the proposed site plans as alternatives for helping to mitigate traffic impacts as a result of the development:
 - a. SB Livernois Rd just north of existing dental office.
 - i. Extend the full right-turn lane from the dental office and tie into dedicated right-turn lane at EEI Global's current main entrance. This will create one continuous right-turn lane and eliminate the existing "jog". ~\$25k
 - b. WB Horizon Ct (future Horizon Dr).
 - i. Construct a dedicated right-turn lane exit to allow traffic to continue travelling without having to stack waiting for NB Livernois Rd traffic to exit. ~\$150k
 1. Right-turn lane length - 150 feet
 2. Entering taper length - 100 feet
 - c. NB Livernois Rd at Horizon Ct (future Horizon Dr). ~\$175k
 - i. Improve the existing passing lanes to meet RCOC requirements.
 1. Entering taper - 150 feet
 2. Passing lane length - 150 feet
 3. Thru lane portion - 100 feet
 4. Exiting taper - 150 feet
 5. They are currently 100 feet, 100 feet, 95 feet and 125 feet, respectively.
 - d. The estimated ball park costs for items 3(a) thru 3(c) are in the \$350k range (construction costs only).

PGS/au

Attachments: RCOC CLTL, Passing Lane and Taper Lane Details

c: Allan E. Schneck, P.E., Director; DPS
Paul Davis, P.E. City Engineer/Deputy Director; DPS
Tracey Balint, P.E., Public Utilities Engineering Mgr.; DPS
Keith Depp, Project Engineer; DPS
Jason Boughton, AC, Eng. Utilities Specialist; DPS
Adele Swann, Technician - Utilities; DPS
File

Jenny McGuckin, Right of Way/Survey Technician; DPS
Scott Windingland, Engineering Aide; DPS
Bill Cooke, Assistant Chief/Fire Marshall; RHF
Vince Foisy, Communications Systems Administrator; RHF
Chuck Keller, P.E., ckeller@rcoc.org
Scott Sintkowski, P.E., ssintkowski@rcoc.org



The TYPICAL dimension shall be used unless the Permits Division specifies or the Applicant shows cause for, and the Permits Division approves, a different value. The RANGE in dimensions indicates the working value for each design feature.

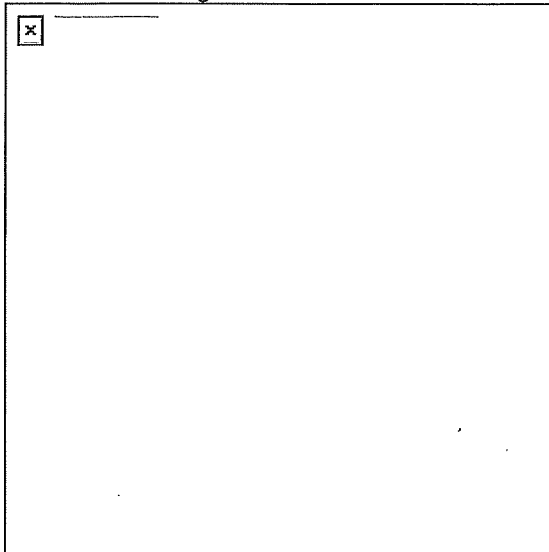
6.7.3 Figure 6-3 shows when a right-turn deceleration lane or taper is warranted. Table 6-9 shows the dimensions of right-turn deceleration lanes and tapers for Commercial Driveway or Private Road approaches.

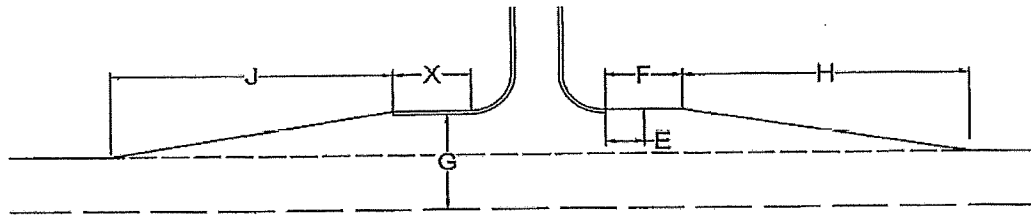
**Table 6-9:
RIGHT-TURN LANE AND TAPERS FOR COMMERCIAL DRIVEWAYS AND PRIVATE ROAD APPROACHES**

<u>Design Features</u>		<u>Curbed Road</u>		<u>Uncurbed Road</u>	
		<u>Typical</u>	<u>Range</u>	<u>Typical</u>	<u>Range</u>
Curb Ending	E	Not Applicable		10'	(No Range)
Right-Turn Lane Length	F	25'	0' to 150'	25'	0' to 150'
Pavement/Width from CL of Road	G	24'	22' to 24'	24'	22' to 24'
Entering Taper	H	100'	75' to 150'	100'	75' to 150'
Exiting Lane Length	X	25'	0' to 100'	25'	0' to 100'
Exiting Taper	J	75'	50' to 100'	75'	50' to 100'

NOTE:

The TYPICAL dimension shall be used unless the Permits Division otherwise specifies or the Applicant shows cause for, and the Permits Division approves, a different value. The RANGE in dimensions indicates the working value for each design feature.





- 6.7.4 Where center left turn operation exists or is warranted due to the proposed approach, see Figures 6-4 and 6-5. Figure 6-4 shall be used for lane shifts of not more than 6 feet. Where an eccentric lane shift is proposed, the taper length shall be in accordance with the M.M.U.T.C.D.
- 6.7.5 If proposed entrance or exit tapers overlap with current existing tapers, the Applicant shall indicate the overall lane length that will result and the A.A.S.H.T.O. required exit taper lengths and signing requirements.

FIGURE 6-4

