



memorandum

Date: March 26, 2019

To: William Huotari, PE

From: Stephen Dearing, PE, PTOE and Sara Merrill, PE, PTOE

Re: Queries from Raintree Village Homeowners Association

We understand that there are a number of questions and concerns from the Raintree Village Homeowners Association (RVHA) regarding the traffic impact study for the John R Commons development (aka BGB Luxury Apts.). We have taken the liberty of paraphrasing their issue below and then providing responses.

RVHA: *The TIS states “A cursory signal warrant analysis at the Nancy Bostick/Orpington intersection with John R shows that the MMUTCD 8 hour, 4 hour, and peak hour warrants would likely be met at this intersection based on the existing traffic volumes.” However, the TIS does not call for a traffic signal at Nancy Bostick Dr./ Orpington Dr. and John R Rd. What is the correct understanding of the above statements and the reference to the Michigan Manual on Uniform Traffic Control Devices. Do the above statements say that no traffic signal is needed?*

OHM: The MMUTCD contains ‘warrants’ or criteria for considering the installation of control devices like traffic signals. These warrants should be considered the absolute minimum threshold for even considering their installation, but are not intended to be a mandate for their use. The MMUTCD explicitly states: “The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic signal.” [MMUTCD, Section 4C.01, 3rd paragraph]. Replacing two-way STOP control with a traffic signal can lead to increases in overall delays (as the major road would have to stop at the signal), as well as an increase in certain types of crashes (such as rear-end collisions). As a result, there are many locations where traffic volumes are sufficiently high to satisfy the traffic volume thresholds (Eight-Hour Vehicular Volume, Four-Hour Vehicular Volume, or Peak Hour Volume Warrants), but engineering analysis indicates that a signal should not be installed. Engineering judgment is the final arbiter for the decision to install, and that decision lies with the traffic safety staff of the Road Commission for Oakland County (RCOC).

In this particular case, the TIS was developed using an analytical tool called Synchro / SimTraffic. This software program actually is a two-in-one tool, a stochastic calculation engine (Synchro) and a microsimulation model (SimTraffic). Synchro uses the methodology of the Highway Capacity Manual to calculate average delay and level of service (LOS) for an intersection. In doing so, it completely ignores the surrounding intersections and renders its values as if the subject location was totally isolated. Based on the peak hour volumes along John R Rd and the actual and projected volumes for Orpington Dr and Nancy Bostick Dr, this part of the tool suggests that the future LOS will be an ‘F’.

However, the SimTraffic part shows a different story. Within the context of this location being just 830’ from the traffic signal for John R at Big Beaver, the microsimulation was reviewed to see how this location would fare. Given the way the signals along John Rd result in platoons of vehicles and thus gaps in traffic, it was determined that traffic exiting Orpington Dr and Nancy Bostick Dr does not appear to have the same average



delay that the Synchro part of the tool would suggest. Delay and queuing in the microsimulation suggest that installing a traffic signal here would not be in the best interests of the overall roadway network. Hence, the claim that warrants would likely be met at this intersection but there not being a recommendation that it actually occur.

RVHA: *Even if numbers do not currently call for a traffic signal at Nancy Bostick Dr or somewhere along John R Rd, it seems likely that at some future date a need will be recognized. In addition to other local developments considered by the TIS, there will be more traffic from the new Raintree Village on the Park subdivision, potentially more traffic on John R after it is widened from Long Lake to South Boulevard, and for the next two years more traffic on local roads like John R while there are I-75 lane closures.*

OHM: The TIS was to specifically look at the access for the proposed development and incidentally at the cumulative impacts to the Big Beaver corridor. It was not intended to evaluate the John R Rd corridor.

Regarding the planned road work on John R from Long Lake to South Blvd, this project is not adding travel lanes. There is current one through lane in each direction and there will still just be one after completion. The 'widening' is for a continuous center lane for two-way left turns.

It is true that the I-75 project will be distorting the travel patterns for the next two years or so. But the effect will be felt throughout the community, not just on John R. And the said same reconstruction of John R from Long Lake to South Blvd will be also happening in this coming year.

RVHA: *If dense apartments are developed on the Bostick property, it makes sense to direct traffic to Nancy Bostick Dr, and not to cut in front of Kroger or around the Troy Sports Center and its parking lot. More cars on northbound John R turning left onto Nancy Bostick Dr will make it even harder for cars on Nancy Bostick Dr turning left onto John R.*

OHM: The main access for the proposed residential development is to Nancy Bostick Dr, and will be immediately adjacent to its intersection with John R. It is not that traffic would be **directed** to the circulation aisles for Kroger or the Troy Sports Center. Rather the TIS was just recognizing that new residents would be likely adjusting their travel paths based on where they live in the development and in what direction they need to go upon leaving for their day and then returning home.

RVHA: *Besides a signal, there may be a call for a crosswalk, for people traveling to Beaver Trail Park or Barnard Elementary to the east, or Kroger and Baker Middle School to the west.*

OHM: This is the first indication that there may be the need for a pedestrian crossing of John R that would be removed from the current signalized intersections of Big Beaver Rd, Niagara Dr. or Wattles Rd. This type of a request will need to be separately evaluated, once sufficient evidence can be documented of a steady need.

RVHA: *John R southbound traffic stopped at Big Beaver backs up to Crimson Dr at peak periods already. Nancy Bostick Dr is closer to Crimson than to Big Beaver. If a traffic signal is installed at Nancy Bostick Dr or somewhere around there, it will pose even greater challenges for traffic exiting Raintree Village to John R. That's why RVHA requested at the recent Planning Commission meeting that the impact on Raintree Village be included the scope of any traffic study that considers a signal at Nancy Bostick Dr.*

OHM: The peak period queuing of John R is one of the factors that would suggest that installing a traffic signal at Nancy Bostick Rd is not the preferred traffic control for this intersection at this time.

RVHA: *So, when does it make sense to raise the concern about the impact of a signal at Nancy Bostick Dr on Raintree Village traffic, and with whom should that concern be raised? Is this a matter for the Traffic Committee which meets tomorrow, or some other body?*



OHM: The RCOC, together with the City of Troy, routinely monitor conditions. Resident feedback can be helpful to aid staff in identifying concerns that may not be readily apparent. The RCOC has a [“Report an Issue” web form](#) for such suggestions and concerns, and includes requests for new traffic signals, signal retiming, and much more. The City of Troy also has a [web form for Citizen Requests](#).