

Dear Mr. Carlo Bernarte,

The City in conjunction with NCDOT have reviewed your request for additional guardrail on New Hope Road in approach of Fawn Glen. Although New Hope Road falls in the City limits, it is on the NCDOT State Highway System. The City maintains the traffic control devices for the State on New Hope Road but does not have the authority to extend guardrail or make changes since it is a State Highway System Road. That said, the City has met with NCDOT multiple times to discuss the reported crashes that occurred near Fawn Glen, several of which resulted in a vehicle leaving the roadway and entering your property. Each case while tragic was a result of the driver failing to obey the posted speed, driving while impaired or a combination of both. Engineers design roadways on the basis that drivers will obey the traffic laws. The curve radii, super elevations (bank of road), and other geometric components are all set based on a design speed which is the basis for speed limits. When drivers disregard the traffic laws, the result can be hard to predict and sometimes tragic. Since poor compliance of the traffic laws often results in crashes, both the City and State have safety programs. Safety programs look for crash patterns that occur over time and a possible cause for them. The goal is to implement countermeasures for the issue causing the crashes. This can be difficult or impossible when the crashes are a result of blatant disregard for the traffic laws.

As noted above, the City and NCDOT recognized that there was a pattern in the left horizontal curve in New Hope Road approaching and through the intersection of Fawn Glen in 2008. We installed additional traffic control devices in hopes of mitigating the speed related crashes. High intensity chevron signs were installed on New Hope Road on September 12, 2008. We also looked at extending the existing guardrail to deflect vehicles that may lose control. According to the NCDOT Roadside Design Guide, guardrail can only be placed at the face of the curb or at least 13 feet from the face of the curb for a curb and gutter section with a posted speed limit between 45 - 50 mph. Due to the slope of the terrain and public Right-of-Way line, guardrail 13 feet back would not be effective or feasible. Guardrail at the back of curb may have been effective at deflecting out of control vehicles but it also would have impacted the sight triangle for vehicles egressing from Fawn Glen. NCDOT and the City cannot implement any measure that violates existing engineering rules or creates a different safety concern.

Since the additional traffic control devices were installed, three more crashes occurred with vehicles leaving the roadway. These crashes were also a result of a high rate of speed, driving while impaired or a combination of the two. The City and NCDOT met and discussed these crashes and possible mitigating measures. We looked at guardrail again. Guardrail can be used for several reasons. Regardless of the reason (typically an unrecoverable slope), it is designed to deflect a vehicle back to the roadway. This is the reason why we did not pursue installing guardrail around the north side of Fawn Glen, where your home is. Guardrail installed wrapping the northern side of the Fawn Glen intersection would create a hazard to vehicles. As previously mentioned, guardrail is designed to deflect a vehicle back into the roadway and not stop a perpendicular collision. This is why NCDOT and the City cannot support extending the existing guardrail or installing it on the northern side of the intersection

NCDOT and the City did work together to come up with several other measures which hopefully will mitigate the speed related crashes. Some of these measures qualified for NCDOT Spot Safety funding. NCDOT will be receiving funding to install special delineators that mount in the guard rail. In addition, special snow plow-able raised pavement markers will be installed in the curve on New Hope between the two northbound lanes. Lastly, high intensity large oversized fluorescent yellow-green signs will be

installed in advance of the curve further alerting drivers. This project just received funding so work should start shortly.

In reviewing the crashes, the City noticed that most of the injury/fatal crashes occurred at night. To ensure that inadequate light was not a concern, the City is upgrading the street lights on New Hope Road to new LED type street lights. LED lights are different than traditional incandescent lights and send a focused beam of light to a specific area with very little unintentional light pollution. The LED street lights will be much more effective of lighting the road and curve.

Lastly, the City will be installing a concrete "pork chop" (see attached). This concrete island will allow a place for further delineation. Since there is no median break on New Hope Road, the Fawn Glen intersection functions as a right-in right-out. The concrete island will not prohibit any movements but reinforce existing ones. It will also allow the City/NCDOT a place to install additional signage and raised pavement markings.

I realize you requested guard rail but hope this email explains why the City and NCDOT cannot recommend or install it respectively. While NCDOT and the City cannot ensure traffic law compliance, we do realize there is a pattern of vehicles leaving the roadway. However, every case involves a high rate of speed or an intoxicated driver. Neither NCDOT or the City are able to fix the outcome of poor compliance using typical safety engineering. Our hope is the multi-prong approach we are taking (State, and Local) will bring more attention and compliance to the curve in question. If you have any other specific questions or would like to discuss further, please feel free to give us a call.

Sincerely

Brandon Watson
Transportation Analyst
City of Raleigh - Public Works

