

Board of County Commissioners Sumter County, Florida

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Memo

To: Bradley Arnold, County Administrator

From: Deborah L. Snyder, P.E., PTOE **Deborah L. Snyder** Digitally signed by Deborah L. Snyder
Public Works Director/County Engineer Date: 2023.05.03 10:05:01 -04'00'

Date: May 3, 2023

RE: Meggison Road Phase Seven Multimodal Crossing –Citizen Concerns

The Sumter County Board of County Commissioners (BOCC), received multiple concerns from residents regarding the Meggison Road Phase Seven multimodal crossing at station 136+25. Sumter County staff have reviewed the concerns, with the Engineer of Record (EOR), and provide the following responses and recommendation for Sumter County BOCC consideration.

Existing Condition

The multimodal crossings northern edge line is approximately 240 feet southeast of the nearest resident/guest gate on Meggison Road. The southern edge line of the crossing is approximately 375 feet northwest of the centerline of Roudell Way. The width of the crossing is approximately 20 feet from inside edge line to inside edge line. The roadway geometry on the northwest side of the crossing comprises a four lane divided road with 22 foot pavement width that is transitioning to an undivided roadway prior to the crossing. The geometry of the roadway to the southeast of the crossing is a 36 foot wide undivided roadway with 12 foot travel lanes and two six foot special purpose lanes. The posted speed limit is 20 miles per hour (MPH) through the crossing location southbound and 30 MPH northbound.

Citizen Concerns and Responses

- *Install a traffic signal at the crossing*
 - The vehicle volumes in the build-out condition are not projected to meet the warrants for signalization. A review of warrant 7, crash experience, showed no crashes have occurred at the location since construction was completed. At this time, County staff does not recommend the installation of a short term or long term traffic signal at the referenced location.

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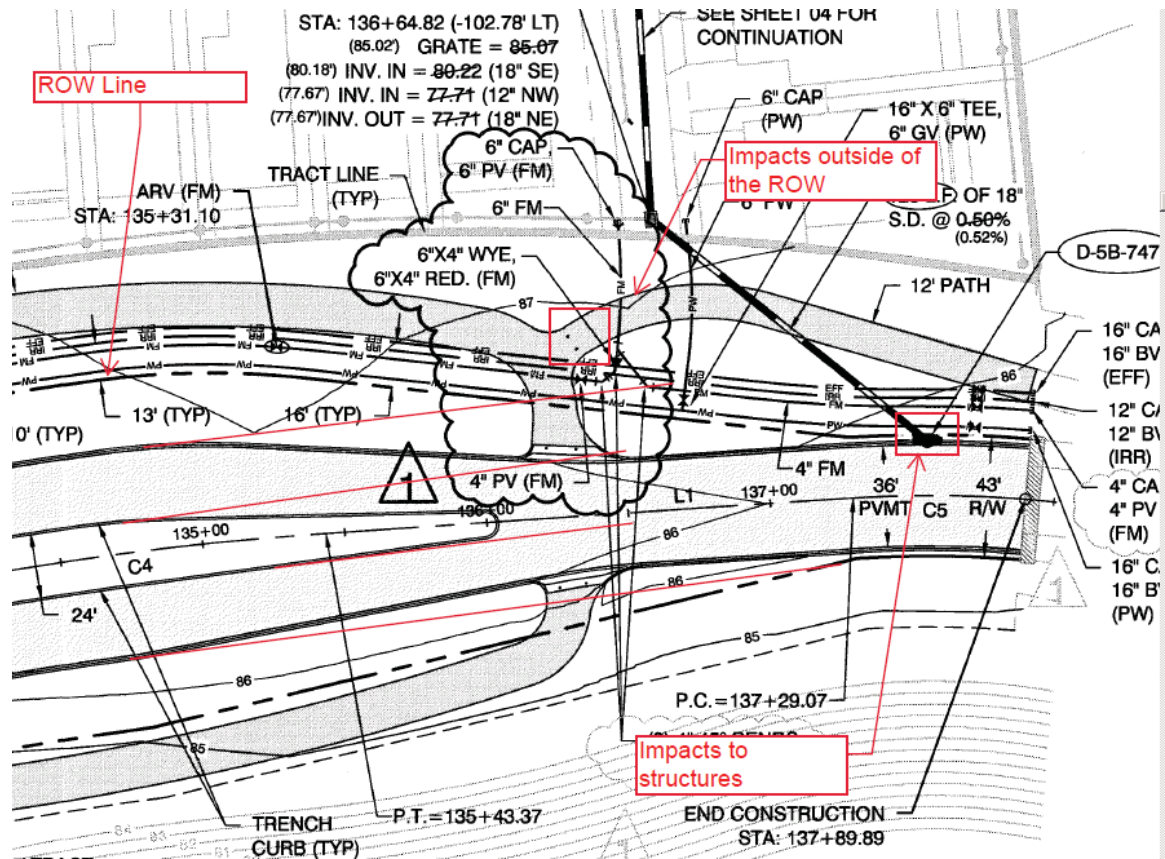
Lastly, as identified in the Manual on Uniform Traffic Control Devices (MUTCD), the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

- *Convert the intersection to an all way stop*
 - As identified in the MUTCD, STOP signs should not be used for speed control. Sumter County staff measured the average delay of the cart crossing on April 25, 2023 between 10:30 AM and 11:30 AM. From that data collection, the average multimodal delay was 12.1 seconds for a total of 99 carts. The maximum delay was documented at 70 seconds, and the minimum was one second (assumed one second for failure to stop). There have been no crashes at the crossing since the construction was completed. There were no observed sight restriction during the AM or PM hours. The project volumes in the build-out condition were not projected to meet the requirements of a four-way stop condition. Lastly, it is reasonable to assume the rear end and cart merging type crashes would increase on Meggison Road as an all way stop at this location would be unexpected and the queuing created on the mainline would further compound the likelihood of these incidents. For all these reasons, County staff does not recommend the installation of an all way stop at the referenced location.

- *Move the multimodal crossing closer to the gates to the northwest*
 - As it relates to the southbound movement, a shift of the crossing towards the gate would require the merge movement to be shifted further to the east, as a merging of vehicles within the crossing would not be recommended over the existing location. As it relates to the northbound movement, the closer the multimodal path gets to the gate, the greater the probability of vehicles queuing within the crossing. Lastly, any shifting to the northwest would create a scenario of carts needing to cross multiple lanes of traffic at grade. This shift creates more conflict points and potential for crashes than the existing location.

- *Move the gates further to southeast*
 - A shift of the gate towards the southeast would require the merge movement to be shifted further to the southeast. There is insufficient right-of-way (ROW) for this scenario while still maintaining the existing length of merge. Any shifting of the gate to the southeast would reduce the vehicular queuing area and increase probability of vehicles queuing within the crossing. ROW constraints to the southwest significantly limit the possibility of a gate relocation while still maintaining the current merging lengths. County staff does not recommend moving the gates.

- *Widen and lengthen the median to provide a refuge area for a two-stage maneuvers*
 - Sumter County does not have sufficient ROW to extend the median and still provide sufficient taper lengths for the mainline to the southeast. An extension of the median would directly impact the facilities outside of Sumter County's ROW including drainage structures, pedestrian paths, bollards, etc. County staff does not recommend this revision. Please see the attached diagram of what facilities would be impacted.



- *Install Speed Bumps*
 - Sumter County does not install speed bumps. Because of their abrupt rise and required low speed, they can be a hazard to motorists and bicyclists. Lastly, it is reasonable to assume the rear end type crashes would increase on Meggison Road as speed bumps would be unexpected and the queuing created on the mainline would further compound the likelihood of these incidents.
- *Why is the length between the multimodal crossing and gates different that other locations*
 - The primary reason for locating the crossing further away from the gate had to do with ensuring that queuing would not block the roundabout, the gate, or the crossing operations. Reference attached Memorandum identified as Kimley-Horn Project Number 042212107
- *More speed limits signs are needed*
 - County staff reviewed the speed limits on Meggison Road between Lake County and the first roundabout at Meggison Road and Bexley Trail. The speed limits are consistent with the signed and sealed plans for this segment of roadway. There is a regulatory sign at the connection of C 470 and Meggison Road and Sumter County line and Meggison Road that states the posted speed limit is 20 MPH unless otherwise posted. During County staff review, an inconsistency in speed limits between the

northbound and southbound movements through the gate and crossing location was identified. The northbound approach has a regulatory speed of 30 MPH through the gate and crossing location, and the southbound has a regulatory speed of 20 MPH through the gate and crossing location. County staff will work with the EOR on a revision to provide a consistent speed through this location for both approaches.

- *A tunnel should be installed*
 - There is not sufficient ROW to install a tunnel at this location. Also, a tunnel for a two-lane crossing is not consistent with other locations throughout the community. All golf cart tunnels are considered a utility and are owned and maintained by The Villages[®] developer or the District Government.
- *The width of the multimodal path is different at this location*
 - The typical width of at-grade crossings is 15.5 feet. Cart crossing widths measured by County staff both north and south of SR 44 were generally consistent with this width. The crossing on Meggison Road is wider than the minimum as it is not constrained by raised medians on either side. For this reason a narrower width is not recommended.
- *More signs are needed at the crossing*
 - The signage approaching at-grade crossings throughout The Villages[®] development are intended to all be consistent, including the following:
 - “Golf Cart Crossing Ahead” signs
 - “No Carts Beyond This Point” signs, where applicable
 - “Stop” signs along the multimodal transportation paths

This location is consistent with this signing plan.

Conclusions

The multimodal crossing on Meggison Road Phase Seven, was designed differently than other similar locations within The Villages[®] development to ensure that queuing would not block the roundabout, the gate, or the crossing operations. This design was reviewed in great detail by the EOR prior to finalizing the design and ultimate construction of the roadway. County staff has reviewed the Signal 4 Analytics crash database and there have been no reported crashes at the crossing since construction has occurred. A review the delay of carts on the multimodal trail on April 25, 2023 between 10:30 AM and 11:30 AM showed an average delay of less than 13 seconds. There is insufficient ROW for a tunnel. An additional observation made at the April 25, 2023 site visit was 21% of the carts crossing the multimodal crossing did not stop prior to crossing the roadway. County staff identified an inconsistency in the speed limits between the northbound and southbound approaches through the gate and crossing locations and the EOR is reviewing for correction.

Recommendation

Sumter County staff will implement changes to the speed limit, pending input from the EOR, for the inconsistencies going through the gate and crossing location. County staff will review pavement markings and signage at all multimodal crossing locations on an as requested basis when citizen concerns arise. Revisions to other locations that do not meet the intended consistent markings and signage will be corrected when identified.

Memorandum

To: Mr. Bradley Arnold – Sumter County Administrator
From: Amber L. Gartner, PE; Kimley-Horn and Associates, Inc.
Date: March 30, 2020
RE: **Meggison Road Phase 7**
Kimley-Horn Project Number 042212107



This memorandum is being submitted to address comments on the Meggison Phase 7 submittal to Sumter County; specifically the location of the multi-modal transportation path crossing of Meggison Road southeast of Bexley Trail. Below is supporting information for the design.

- Meggison Road transitions from a four-lane divided roadway to a two-lane undivided roadway southeast of the intersection with Bexley Trail. The predominant travel pattern at the roundabout is between Bexley Trail across Florida's Turnpike and Meggison Road to the north.
- Traffic volumes on Meggison Road southeast of Bexley Trail are projected to be 8,600 vehicles per day which is similar to other two-lane minor collector roadways within The Villages (Bailey Trail, Stillwater Trail, St. Charles Place, Hillsborough Trail, Pinellas Place).
- Meggison Road southeast of Bexley Trail will be controlled by a gate. The gate is located approximately 350 feet from the roundabout. The gate location was designed to accommodate a 2-minute stacking at the roundabout (after exiting the gate) and at the gate (exiting the roundabout).
- There is approximately 200 feet for vehicle merging after entering the gate prior to the multi-modal transportation path crossing. The crossing location allows for visibility from the entering gate for vehicles to stop for crossing golf carts. The crossing location also allows for queues at the exiting gate to not block the crossing. As a reference, the golf cart crossing on Morse Boulevard north of CR 466 is approximately 175 feet from the gate.
- The gate and multi-modal transportation path crossing location are further from the roundabout than some other similar locations to ensure queueing will not block the roundabout, gate, or crossing operations.
- The multi-modal transportation path crossing is signed and marked consistent with other crossings behind gates on minor collector roadways (Bailey Trail, Stillwater Trail, St. Charles Place, Hillsborough Trail, Pinellas Place).

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