

1. Overview of Traffic Impact Analysis (TIA) Report

Kimley Horn submitted a traffic impact analysis report for single family housing development that will access Van Wyck Road south of Tree Tops subdivision. Amy Massey is the Engineer on Record (EOR) for producing the detailed traffic study. Seven intersections were analyzed for impacts – US 521 at Van Wyck Road/Faith Presbyterian Driveway, US 521 at Steel Hill Road, US 521 at W. Rebound Road/E. Rebound Road, Rock Hill Highway (SC 5) at Steel Hill Road, Rock Hill Road (SC 5) at Rebound Road/Riverside Road, Van Wyck Road at W. Rebound Road, Van Wyck Road at Steel Hill Road. Also, five access point locations were reviewed on Van Wyck Road for the development on the east and west side of the road. The overall report contained a good breakdown of volumes and distribution among all study locations. The analysis period for build out included the proposed year of 2031 plus one year for a 2032 modeling period. There were some unacceptable levels of services for certain movements at intersections and the report showed mitigation for all mentioned in the report.

2. Items of Interest in the TIA Report

The TIA document was redlined with marks highlighting interest items below (pages noted below reflect pdf pages and not report pages):

- Page 5– US 521 at Van Wyck Road recommends auxiliary lane on US 521 northbound to improve LOS at the intersection to allow additional movement for US 521 to take away green time from this movement to add time to the predicated heavy left turn from Van Wyck Road.
- Page 6 – Van Wyck Road at Steel Hill Road – suggest All -Way Stop Control – would recommend performing warrant analysis and install prior to development build out. Might be justified based on sight distance issues.
- Page 25 – US 521 at Van Wyck Road – construction of 300' SB left turn lane on US 521 – might consider extending to the additional lane on US 521 that tapers about 1200' north of this intersection to accommodate the heavy right turn movement and prevent a merging taper and a deceleration taper.
- Page 29 – US 521 at Steel Hill – Steel Hill and Niven would need to eventually line up on US 521 for future improvements especially for a traffic signal.
- Page 34 – Van Wyck Road at Steel Hill Road – Verify All-Way Stop Warrants and install – might be based on sight distance issues.
- Page 35 – Van Wyck Road at Access 1/Ivy Place – Verify Sight distance and would mirror construction of left turn lane into Ivy Place for safety and consistency in roadway geometry.
- Page 36 – Van Wyck Road at Access 2 & 3 - verify sight distance.
- Page 37 – Van Wyck Road at Access 4 – verify sight distance (could be issues with horizontal curve on Van Wyck Road); consider extending left turn bay up to Access 2 left turn lane (three lane section) to prevent hourglass effect on Van Wyck Road where there will be a short tangent section on Van Wyck Road between the two tapers.
- Page 38 – Van Wyck Road at Access 5 – verify sight distance

3. Checklist Comments

Attached is a TIA checklist that reviews all submitted information for proper TIA submittal. The analysis period did reflect UDO 6.8.2 D for analysis year after development which would be 2032 (Build plus 1 year). The TIA did not review driveway sight distance (usually covered under site plan permitting).

4. Recommendations

1. **Verify sight distance for all access points.**
2. **Mitigation for US 521 at Van Wyck Road needs to be looked at for whether negating the additional lane on NB US 521 due to tapers or extend to Jim Wilson Road as a right turn lane drop instead of tapering where numerous driveways are located. This improvement is used to allow more green time for the predicted heavy left turn movement off Van Wyck Road.**
3. **Conduct All-Way Stop Control analysis for Van Wyck Road at Steel Hill Road and implement.**
4. **Consider left turn lane for Ivy Place since the recommendation for left turn lane for Access 1 across from it. This will eliminate confusion for motorist meeting offset trying to make left turns at the same time – safety issue.**
5. **Consider extending the left turn lanes between Access 2 and 4 to eliminate tapers and hourglass effect (create 3-lane section between the access points on Van Wyck Road).**
6. **Need to verify partnership with Catawba COG over improvements at SC 5 and Steel Hill Road and at SC 5 and Riverside/Rebound Road.**