



September 29, 2022

Paula Webb
Town Manager
Town of Swansboro
601 W. Corbett Ave
Swansboro, NC 28584
(910) 326-4428

RE: Swansboro Starbucks Technical Review Memorandum - Update

Dear Ms. Webb,

Timmons Group reviewed the Swansboro Starbucks Traffic Impact Analysis (TIA) completed by Stantec and submitted to the Town of Swansboro on September 19th, 2022. Initial technical review comments were submitted on September 26th, 2022. The provided comments were addressed by Stantec and a revised TIA was submitted to the Town of Swansboro on September 28th, 2022. Updated technical review comments have been included as part of this memorandum update.

TIA Memorandum Contents and Requirements

For purposes of analysis, it was assumed that the proposed Starbucks Development will consist of the following land uses:

- 2,223 Square-Foot (SF) coffee shop with drive-thru

Per the Town's request, the Stantec study included the following information:

1. **(Study Area)** See #3 below
2. **(Planned Roadway Improvements)** None
3. **(Roadway / Intersections to be Analyzed)** The following study area intersections were included for analysis:
 - NC-24 (W Corbett Ave) / Queens Creek Road / Swansboro Middle School Drive
 - NC-24 (W Corbett Ave) / Norris Road / Walmart Driveway 1
 - NC-24 (W Corbett Ave) / Walmart Driveway 2
 - NC-24 (W Corbett Ave) / Hammock Beach Road
4. **(Projected Trip Generation)** Trip generation included the Starbucks square footage (2,223 SF).
5. **(Preliminary Traffic Distribution)** The trip distribution was provided by Stantec prior to submittal and approved by Timmons Group. The trip distribution included:
 - NC-24 to the east – 40%
 - NC-24 to the west – 50%
 - Queens Creek Road to the south – 10%
6. **(Other Planned / Approved Developments)** None
7. **(Traffic Growth Rate)** A growth rate of 3.0% per year was used.



8. **(Available Traffic Data)** Turning movement counts collected by JM Teague (4/07/22) were provided to Stantec.
9. **(Study Periods)** The TIA analyzed the following conditions:
 - 2022 Existing
 - 2024 Background
 - 2024 Build
 - 2024 Peak Season** Background
 - 2024 Peak Season** Build

**A 7% increase in traffic was used to account for peak season traffic.

10. **(Other Staff Concerns)** None

TIA Memorandum Findings

The overall NC-24 (W Corbett Ave) / Queens Creek Road / Swansboro Middle School Drive intersection level of service is not projected to exceed LOS D during any analyzed condition. No improvement recommendations were provided or are necessary to mitigate capacity concerns at this intersection.

The overall NC-24 (W Corbett Ave) / Norris Road / Walmart Driveway 1 intersection level of service is not projected to exceed LOS C during any analyzed condition. No improvement recommendations were provided or are necessary to mitigate capacity concerns at this intersection.

The unsignalized northbound right-turn lane at NC-24 (W Corbett Ave) / Walmart Driveway 2 is not projected to exceed LOS B during any analyzed condition. No improvement recommendations were provided or are necessary to mitigate capacity concerns at this intersection.

The overall NC-24 (W Corbett Ave) / Hammock Beach Road intersection level of service is not projected to exceed LOS B during any analyzed condition. No improvement recommendations were provided or are necessary to mitigate capacity concerns at this intersection.

Overall delay percent differences (between Background and Build analyses) for intersections with LOS E or above (overall or intersection approach) did not exceed 12% during any analyzed condition. The development minimally increased queues at each intersection. The document recommended no improvements to mitigate congestion or queuing caused by the proposed development.

Timmons Group TIA Review Summary

Timmons Group reviewed the provided TIA and agrees with the project findings. The technical comments provided in the September 26th, 2022 memorandum are provided below with updated comments (in green).

All the technical review comments have been corrected and no additional comments are provided.

Timmons Group TIA Memorandum Review Comments

Study comments from the September 26th, 2022 memorandum are provided below with updated comments (in Green).



The following was noted in the Synchro analysis review:

- Minor roundoff errors at various locations (<2 vehicles) – no correction required.
- For all signalized intersections – lost time adjust was calculated incorrectly. Per NCDOT standards and guidelines, the following formula should be used:
 - Yellow + All Red + Lost Time Adjust = 5.0 second
 - ➔ Lost times were corrected for all signalized intersections)
- Protected / permitted movements utilizing four-section flashing yellow arrow signal heads should use “DP+P” instead of “pm+pt”.
 - ➔ Protected / permitted movements (with four-section flashing yellow arrow signal heads) were updated to use “DP+P”
- Max Recall was used for both side streets at the Norris Road / Walmart Driveway 1 intersection.
 - ➔ Side street “Max Recall” updated to “None”
- It was assumed that intersections timings were optimized for each analysis condition. This was not specified in the document.
 - ➔ Signal timing optimization was not specified

Should you have any questions regarding this memorandum or need any additional information from Timmons Group, please do not hesitate to contact me.

Sincerely,

Jeffrey P. Hochanadel, PE, PTOE
Principal | North Carolina Transportation Group Leader