



## MEMORANDUM

To: Zahid Baloch, North Carolina Department of Transportation

From: Craig R. Gresham, P.E.  
Clearbox Forecast Group, PLLC

Date: July 8<sup>th</sup>, 2024

Subject: Traffic Forecast – Replace or remove bridge 449 over the CSX Railroad Crossing in Cary on SR 1633 (Good Hope Church Rd) - NCDOT Project B-5680, WBS 45635.1.1.

Please find attached the 2024/2050 traffic forecast for NCDOT Project B-5680. This forecast was reviewed and approved by NCDOT Transportation Planning Division on July 8<sup>th</sup>, 2024. This forecast provides 2024 Base Year No-Build, 2050 Future Year No-Build without the subject bridge, and 2050 Future Year Build with the subject bridge. No previous traffic forecasts have been prepared for this project.

This forecast assumes all projects documented in the adopted 2024-2033 State Transportation Improvement Program are included within the study area. This forecast was requested for use in the project development activities associated with the project.

This traffic forecast includes Average Annual Daily Traffic (AADT) estimates for the three scenarios for listed in Table 1.

**Table 1. Traffic Forecast Scenarios**

Forecast Scenario		Year	Forecast Scenario
1	Base Year No-Build (BYNB)	2024	Existing Road Network
2	Future Year No-Build (FYNB)	2050	Existing Road Network plus Fiscally-Constrained 2050 CAMPO MTP <u>without</u> Bridge 449 over CSX Rail line
3	Future Year Build (FYBD)	2050	Existing Road Network plus Fiscally-Constrained 2050 CAMPO MTP <u>with</u> Bridge 449 over CSX Rail line



The following basic assumptions were made to complete this forecast.

**Travel Demand Model:** The Triangle Regional Model (TRM Gen2v1.3.1, adopted August 2023) was the main tool used to develop this forecast. The TRM utilizes TransCAD (version 9), has a 2020 base year and 2050 future year, provides output of average weekday daily traffic (AWDT), and it reflects the latest adopted 2050 MTP.

**Fiscally Constrained:** The TRM network for 2050 was used and includes fiscally constrained STIP and MTP projects along with the most up-to-date land use forecasts.

**Forecast Methodology:** The 2024 base year no-build and 2050 future year build volumes generally included the development of growth rates between model years. Growth was identified with the bridge in place, then diversion rates were identified for the bridge closure to estimate 2050 no-build volumes (without the CSX bridge crossing) using engineering judgment adjustments.

**Interpolation:** Straight-line interpolation may be used. AADT volumes may be extrapolated for up to two years immediately following 2050. If it is determined that any of these assumptions have become inconsistent with the project and surrounding area activity, please request updated projections for this project.

Please contact me for any further assistance at 919-274-3596 or [craig@clearboxforecast.com](mailto:craig@clearboxforecast.com).

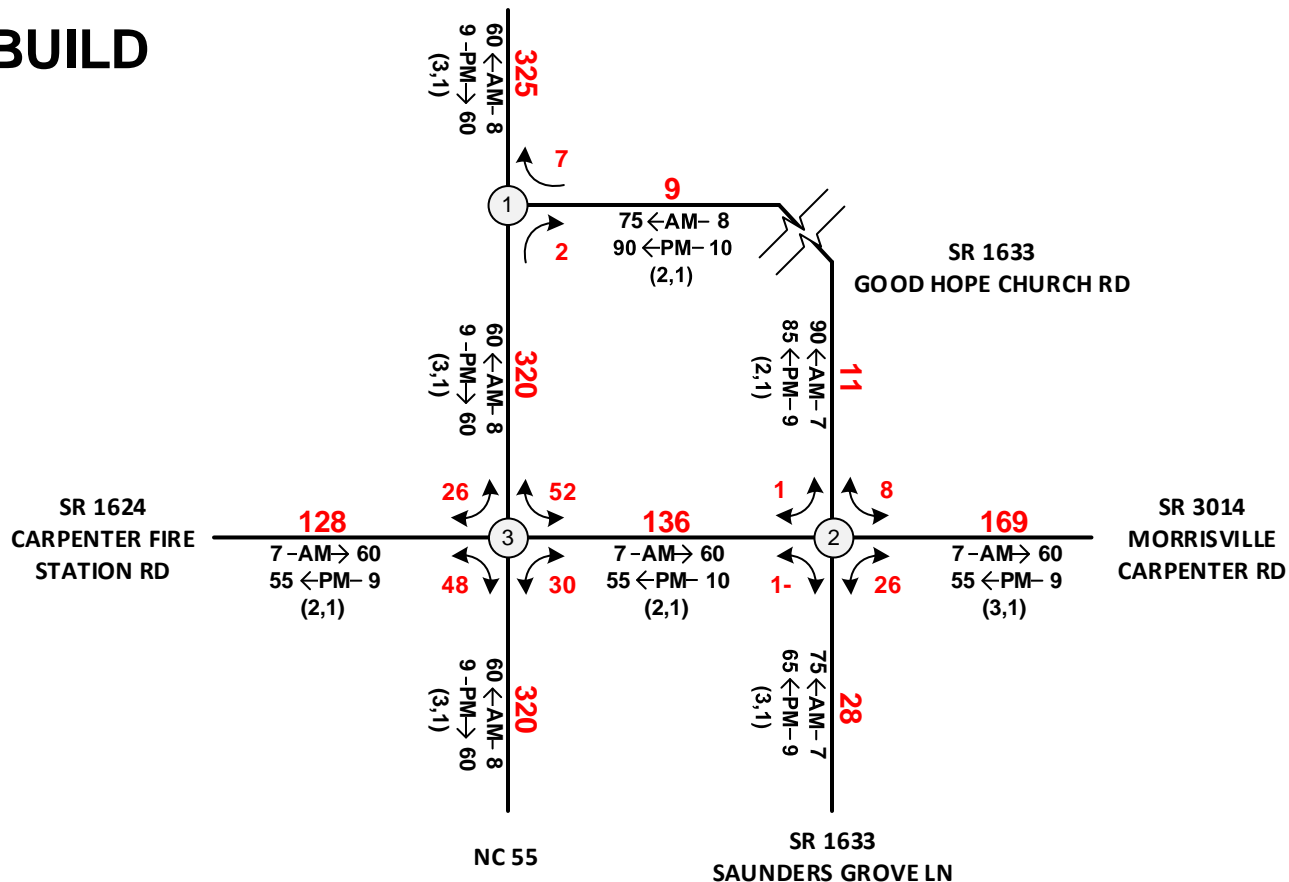
A handwritten signature in black ink, appearing to read "Craig Gresham", followed by a horizontal line.

Craig Gresham, P.E.

Clearbox Forecast Group, PLLC

cc: FILE (Wake County, NCDOT TIP Project B-5680)  
Keith Dixon, NCDOT Transportation Planning Branch

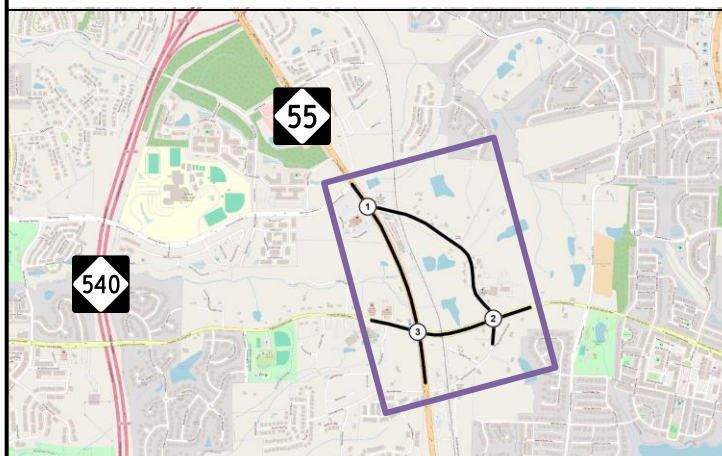
# 2024 NO-BUILD



## LEGEND

- ### No. of Vehicles Per Day in 100s
- 1- Less than 50 vpd
- X Movement Prohibited
- K-AM > D
- D < PM- K
- (d, t)
- K Design Hour Factor (%)
- PM PM Peak Period
- AM AM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

## 2024 AVERAGE ANNUAL DAILY TRAFFIC



## BASE YEAR NO-BUILD

SHEET 1 OF 1

NCDOT TIP: B-5680

COUNTY: WAKE

WBS: 45635.1.1

DATE: JU@M 2024

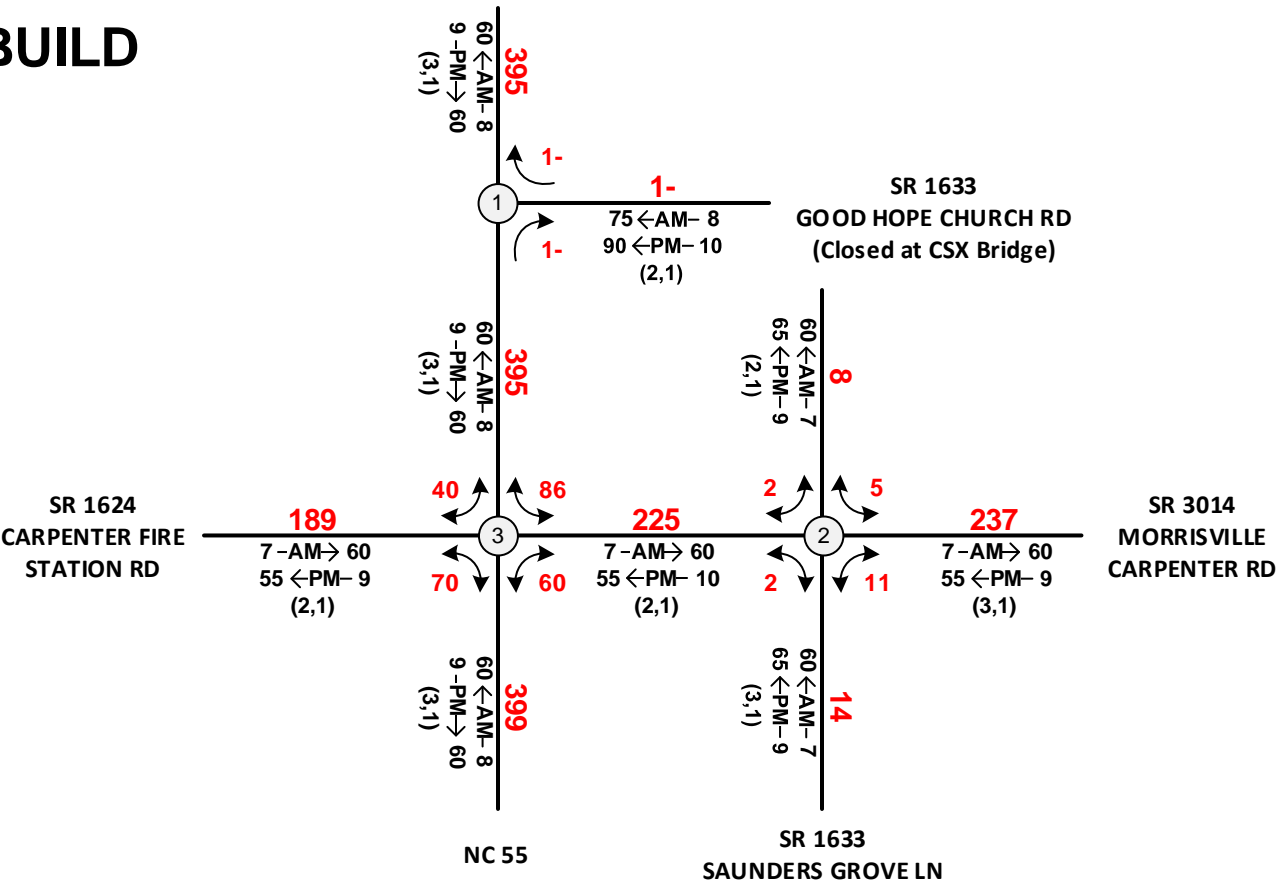
DIVISION: 5

PREPARED BY: Clearbox Forecast Group

LOCATION: CARY, NC

PROJECT: B-5680: Replace Bridge 449 on Good Hope Church Road over CSX Rail Line

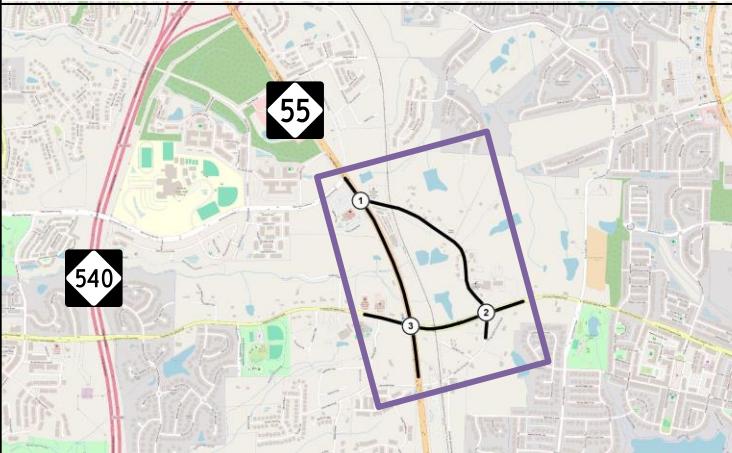
2050 NO-BUILD



LEGEND

- ### No. of Vehicles Per Day in 100s
- 1- Less than 50 vpd
- X Movement Prohibited
- K-AM→D  
D←PM- K  
(d, t)
- K Design Hour Factor (%)
- PM PM Peak Period
- AM AM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

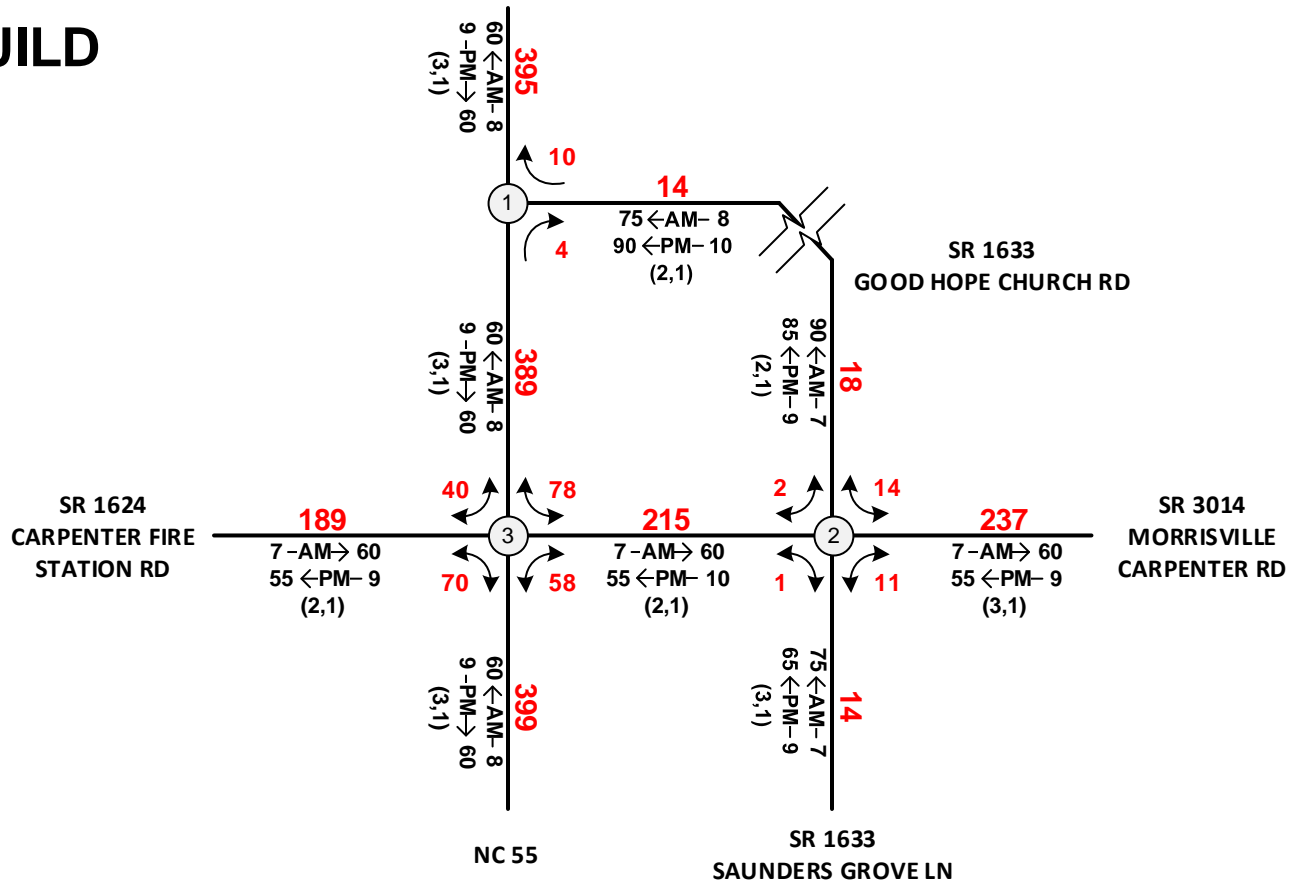
2050 AVERAGE ANNUAL DAILY TRAFFIC



FUTURE YEAR NO-BUILD  
SHEET 1 OF 1

NCDOT TIP: B-5680	
COUNTY: WAKE	WBS: 45635.1.1
DATE: JU@M 2024	DIVISION: 5
PREPARED BY: Clearbox Forecast Group	
LOCATION: CARY, NC	
PROJECT: B-5680: Replace Bridge 449 on Good Hope Church Road over CSX Rail Line	

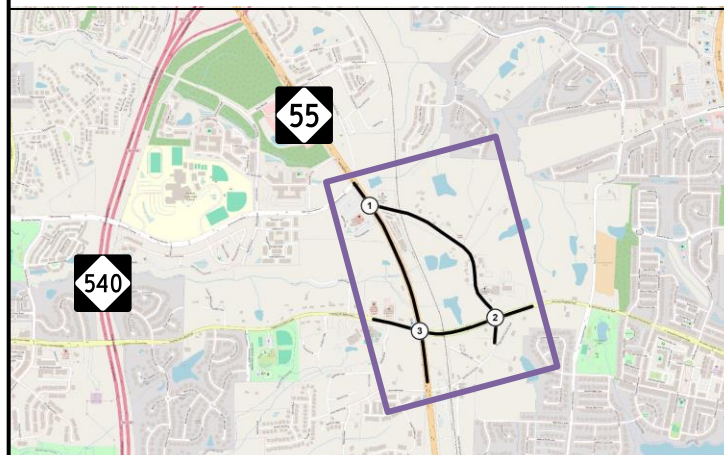
# 2050 BUILD



## LEGEND

- ### No. of Vehicles Per Day in 100s
- 1- Less than 50 vpd
- X Movement Prohibited
- K-AM→D
- D←PM- K (d, t)
- K Design Hour Factor (%)
- PM PM Peak Period
- AM AM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

## 2050 AVERAGE ANNUAL DAILY TRAFFIC



## FUTURE YEAR BUILD

SHEET 1 OF 1

NCDOT TIP: B-5680

COUNTY: WAKE

WBS: 45635.1.1

DATE: JU@M 2024

DIVISION: 5

PREPARED BY: Clearbox Forecast Group

LOCATION: CARY, NC

PROJECT: B-5680: Replace Bridge 449 on Good Hope Church Road over CSX Rail Line