

Project Level Traffic Forecast



**US 64 at NC 751/ SR 1001
(New Hill Road)**

**Convert At-Grade Intersection to Interchange
STIP Project No. R-5887**

Chatham & Wake Counties

DECEMBER 2024



Submitted by:





PROJECT LEVEL TRAFFIC FORECAST
US 64 at NC 751/ SR 1001 (New Hill Road)
Convert At-Grade Intersection to Interchange
Chatham & Wake Counties
North Carolina

WBS #: 48406.1.1
STIP Project No. R-5887



Engineers | Construction Managers | Planners | Scientists

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December 2024

TRAFFIC FORECAST COVER LETTER

December 2024

TO: Morgan H. DeWit, PE
Division 8, NCDOT

FROM: Shreyas Bharadwaj P.E., PTOE
RK&K, LLP

SUBJECT: Traffic Forecast for NCDOT STIP Project R-5887
US 64 at NC 751/SR 1001 (New Hill Road) Chatham and Wake Counties

“This forecast for R-5887 was reviewed by the NCDOT TPD and approved on 12/27/2024”

Please find attached the 2024 Base Year No-Build and 2050 Future Year No-Build/Build traffic forecasts for STIP Project R-5887 in Chatham and Wake Counties.

The R-5887 project proposes to convert the existing at-grade intersection at US 64 and NC 751/SR 1001 (New Hill Road) to an interchange. The proposed improvements associated with the R-5887 project are not expected to impact travel patterns along US 64 and NC 751/SR 1001 (New Hill Road). Therefore, for the purposes of this forecast, the Future Year forecasts for the No-Build and the Build scenarios are assumed to be the same.

Traffic forecasts for the following scenarios are provided in this memorandum:

- 2024 Base Year No-Build
- 2050 Future Year No-Build/ Build

Certain assumptions were made in the development of this forecast:

Fiscal Constraint:

The Future Year (2050) scenario was based on the currently planned projects within the Capital Area Metropolitan Planning Organization (CAMPO) Metropolitan Transportation Plan (MTP), State Transportation Improvement Plan (STIP), Triangle Regional Model (TRM) Travel Demand Model, and the Statewide Travel Demand Model (TDM). The following background improvement projects were included in all the Future Year scenarios and these projects were also included within the 2050 Future Year TRM network.

1. F15b – Convert US 64 to a freeway and widen from 4 to 6 lanes from NC 540 Triangle Expressway to NC 751 (Horizon Year 2035)

2. A173a – New Hill Road widening from 2 to 4 lanes from Olive Chapel Road to US 64 (Horizon Year 2035)

Travel Demand Model:

The Triangle Regional Activity-Based Travel Demand Model (TRM G2) was used to develop the traffic forecast for the subject project. The TRM G2 ABM was developed using TransCAD Version 9 Build 32960 (64-bit) with a Base Year of 2020 and a Future Year of 2050.

Travel Demand Model Network Modifications:

The TRM network included the interchange at US 64 at NC 751/ SR 1001 (New Hill Road) in the Future Year scenario. No modifications were made to the Base year and Future Year scenario networks of Triangle Regional travel demand model.

Forecast Methodology:

Traffic volume and design factor estimates for the 2024 Base Year were developed using traffic counts collected in September 2024 when the Chatham and Wake County schools were in session. Growth rates derived from the Triangle Regional Travel Demand Model and historic growth rates extrapolated from AADT trends were used to estimate Future Year 2050 traffic volumes. Town of Apex, CAMPO and Chatham County were consulted regarding growth rates and the forecast methodology. Engineering judgment was used as necessary to ensure a balanced forecast.

Interpolation:

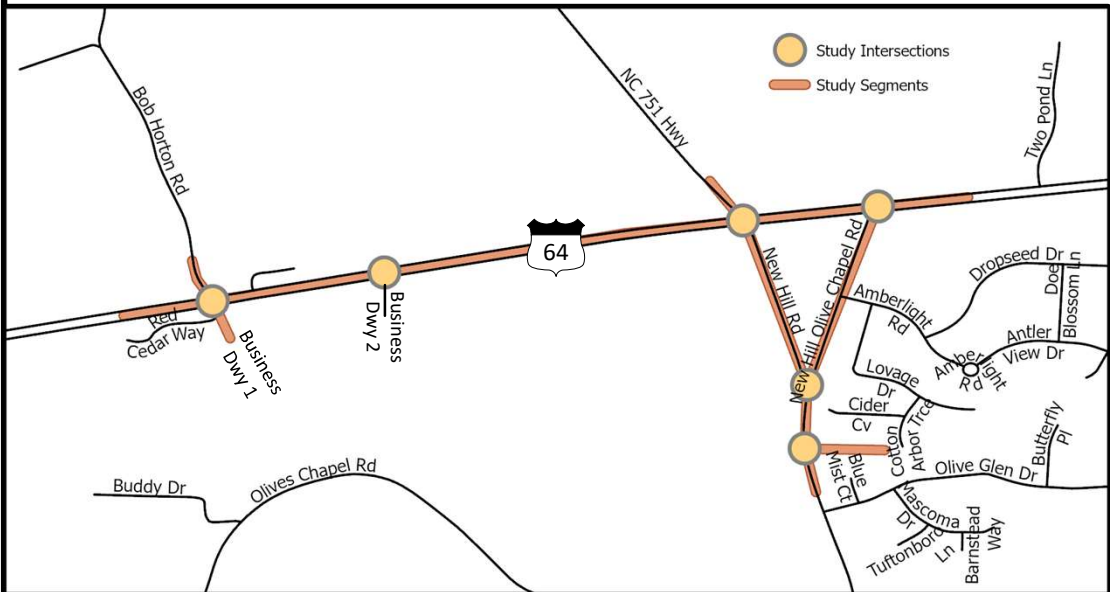
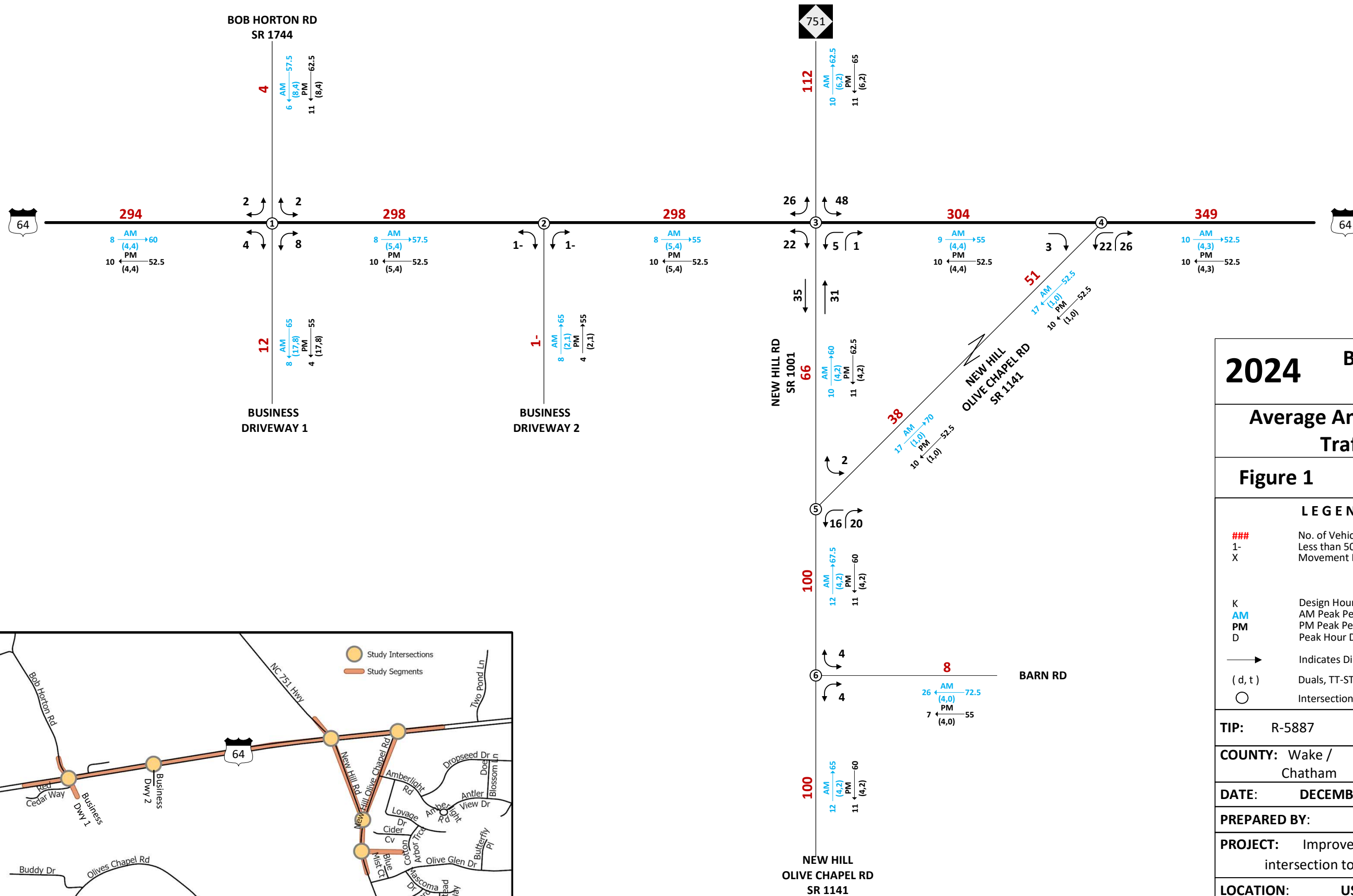
Straight-line interpolation may be used to estimate AADT for years between 2024 and 2050. Extrapolation may be used to estimate AADT volumes for up to two years following 2050.

CC (with Attachments):

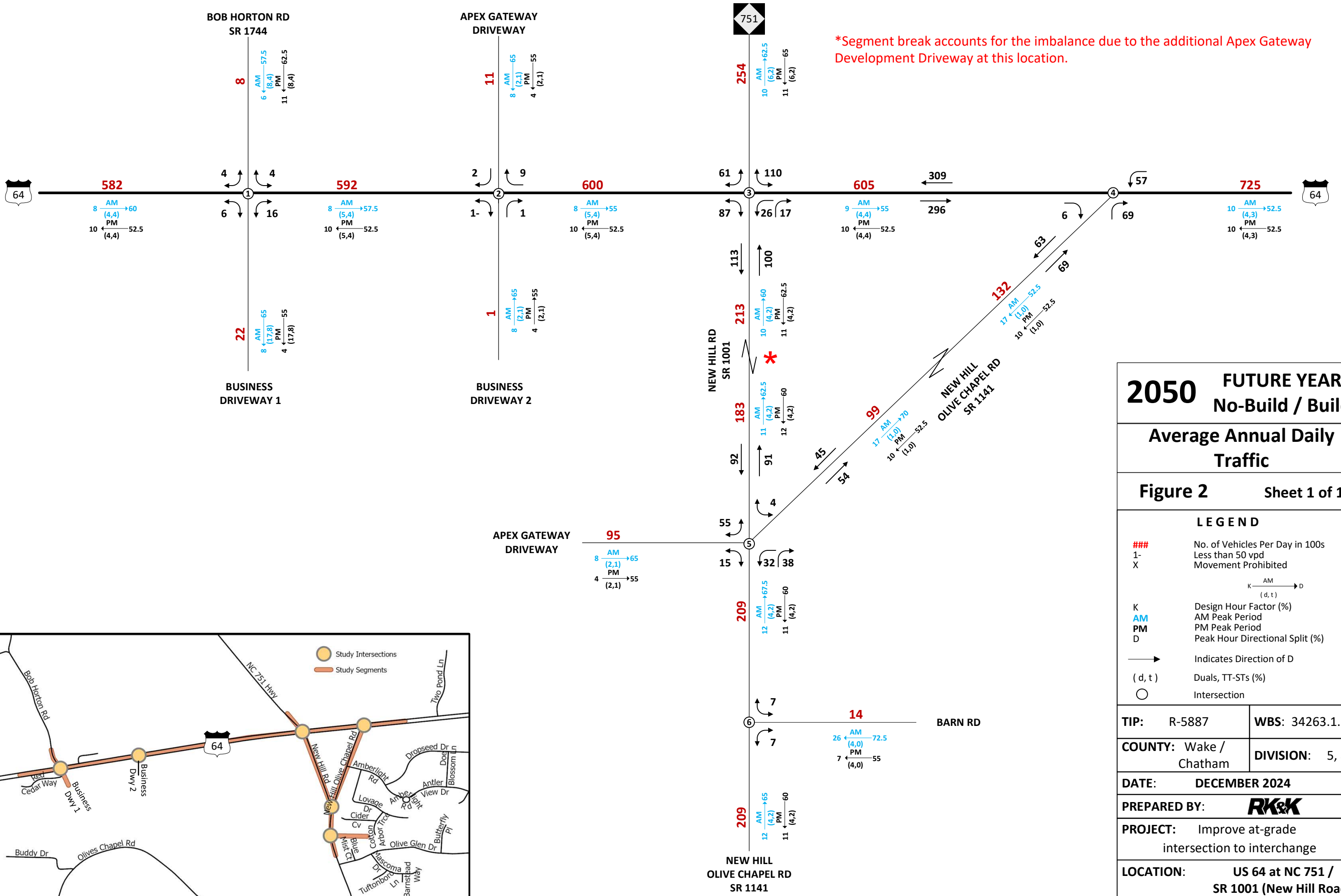
- The NCDOT State Traffic Forecast Engineer trafficforecast@ncdot.gov

File Copy: R-5887 Chatham and Wake Counties

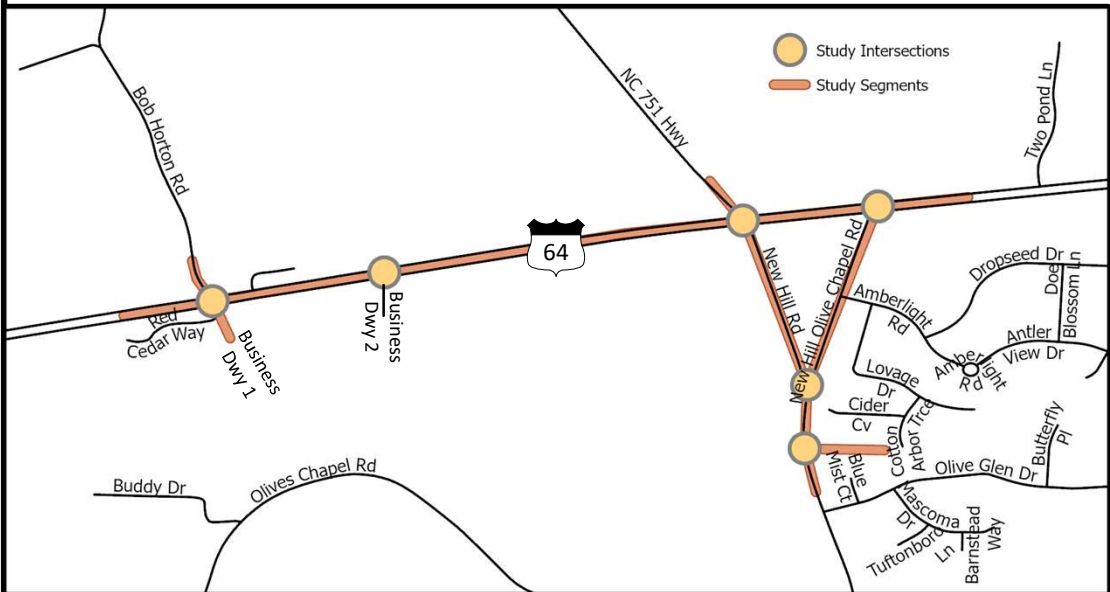




2024		BASE YEAR	
		No-Build	
Average Annual Daily Traffic			
Figure 1		Sheet 1 of 1	
LEGEND			
###	No. of Vehicles Per Day in 100s		
1-	Less than 50 vpd		
X	Movement Prohibited		
	$K \frac{AM}{(d,t)} \rightarrow D$		
K	Design Hour Factor (%)		
AM	AM Peak Period		
PM	PM Peak Period		
D	Peak Hour Directional Split (%)		
→	Indicates Direction of D		
(d,t)	Duals, TT-STs (%)		
○	Intersection		
TIP:	R-5887	WBS:	34263.1.1
COUNTY:	Wake / Chatham	DIVISION:	5, 8
DATE:	DECEMBER 2024		
PREPARED BY:	RK&K		
PROJECT:	Improve at-grade intersection to interchange		
LOCATION:	US 64 at NC 751 / SR 1001 (New Hill Road)		



*Segment break accounts for the imbalance due to the additional Apex Gateway Development Driveway at this location.



2050 FUTURE YEAR	
No-Build / Build	
Average Annual Daily Traffic	
Figure 2	Sheet 1 of 1
LEGEND	
###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K	Design Hour Factor (%)
AM	AM Peak Period
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)
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