

TRAFFIC FORECAST COVER LETTER

October 16, 2019

MEMORANDUM TO: Wanda Austin, PE
NCDOT Division 14 Project Development Engineer

FROM: Peter Trencansky, PE, PTOE, AICP
Patriot Transportation Engineering, PLLC

SUBJECT: Traffic Forecast for A-0009
Graham County
Corridor K Improvements

This forecast and associated origin-destination matrix volumes have been reviewed and approved by the NCDOT Transportation Planning Division on October 16, 2019.

Please find attached the 2019 and 2040 traffic forecast for STIP Project Number A-009 in Graham County. NCDOT is studying improvement options from Andrews to Stecoah in Cherokee and Graham Counties as part of a proposed project to provide the transportation infrastructure necessary for the well-being of local residents and regional traffic. The traffic volumes developed for this study include the portion of US 129 from south of Robbinsville to NC 28 east of Stecoah. This forecast was requested for use in the project development activities associated with the project, including the NEPA documentation and Preliminary Roadway Design.

This is an update to the most recent traffic forecast for this project that was developed in 2010. The project is located within the boundaries of the Southwestern RPO. The following two scenarios are provided in this forecast:

- 2019 Base Year No-Build
- 2045 Future Year No-Build/Build

Brian Burch (NCDOT Division 14 - Division Engineer), Andy Russell (NCDOT Division 14 - District 3 Engineer), Josh Deyton (NCDOT Division 14 - Project Team Lead), Roger Castillo (NCDOT Transportation Planning Division), Pam Cook (NCDOT Transportation Planning Division) and Rose Bauguess (Southwestern RPO) were consulted during the development of this forecast.

Fiscal Constraint

The project is located within the boundaries of the Southwestern RPO, which does not have a fiscally constrained long-range transportation plan; therefore, the traffic volume development is fiscally constrained to match the assumptions of the *State Transportation Improvement Program (STIP)*.

The following projects that may affect the proposed project are included in the Draft 2020-2029 State Transportation Improvement Program (STIP) with money allocated for construction and are assumed to be constructed prior to 2045:

- STIP Project R-5866 – New Location Roadway – US 129 (Rodney Orr Bypass) to Robbinsville High School and Middle School. Construct New Route Including Bridge Over Cheoah River.

- STIP Project R-5839BA – NC 28 (Graham County and Swain County) – Swain/Graham county line at Little Tennessee River to Woods Road at Fontana Dam Village - Upgrade Roadway
- STIP Project R-2822B – NC 143 (West Buffalo Creek to NC 143 Business) - Upgrade Corridor.

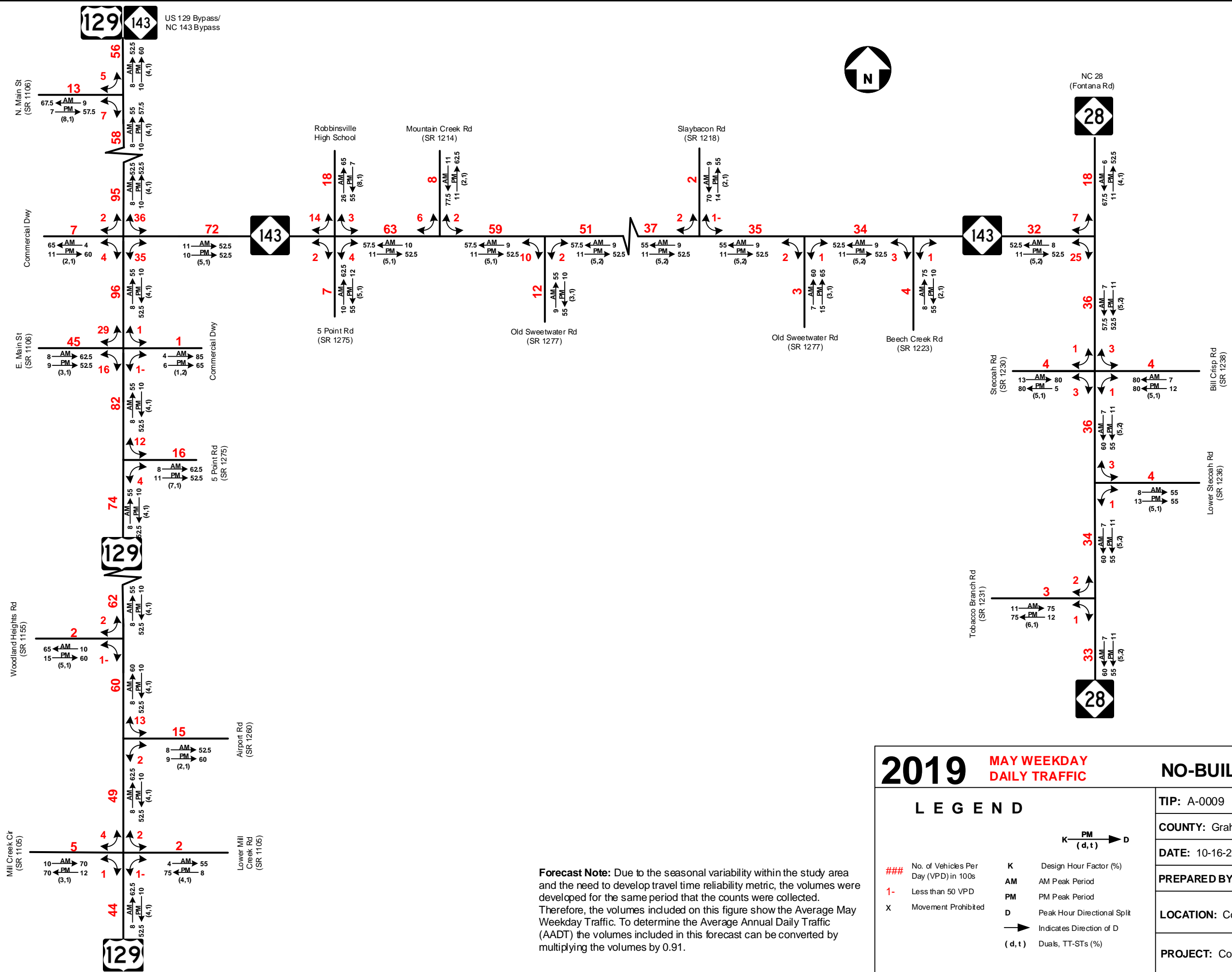
Forecast Methodology

The 2019 Base Year No-Build traffic volumes and design factors were developed based upon current counts and historic AADT trend projections. The 2045 future year traffic volumes generally included the development of compound annual growth rates between the base year and future year. The compound annual growth rates were then applied to the AADT volumes from another scenario to develop initial volumes for each scenario. Engineering judgment adjustments were applied as needed in finalizing the volumes in order to develop a balanced forecast.

Interpolation/Extrapolation

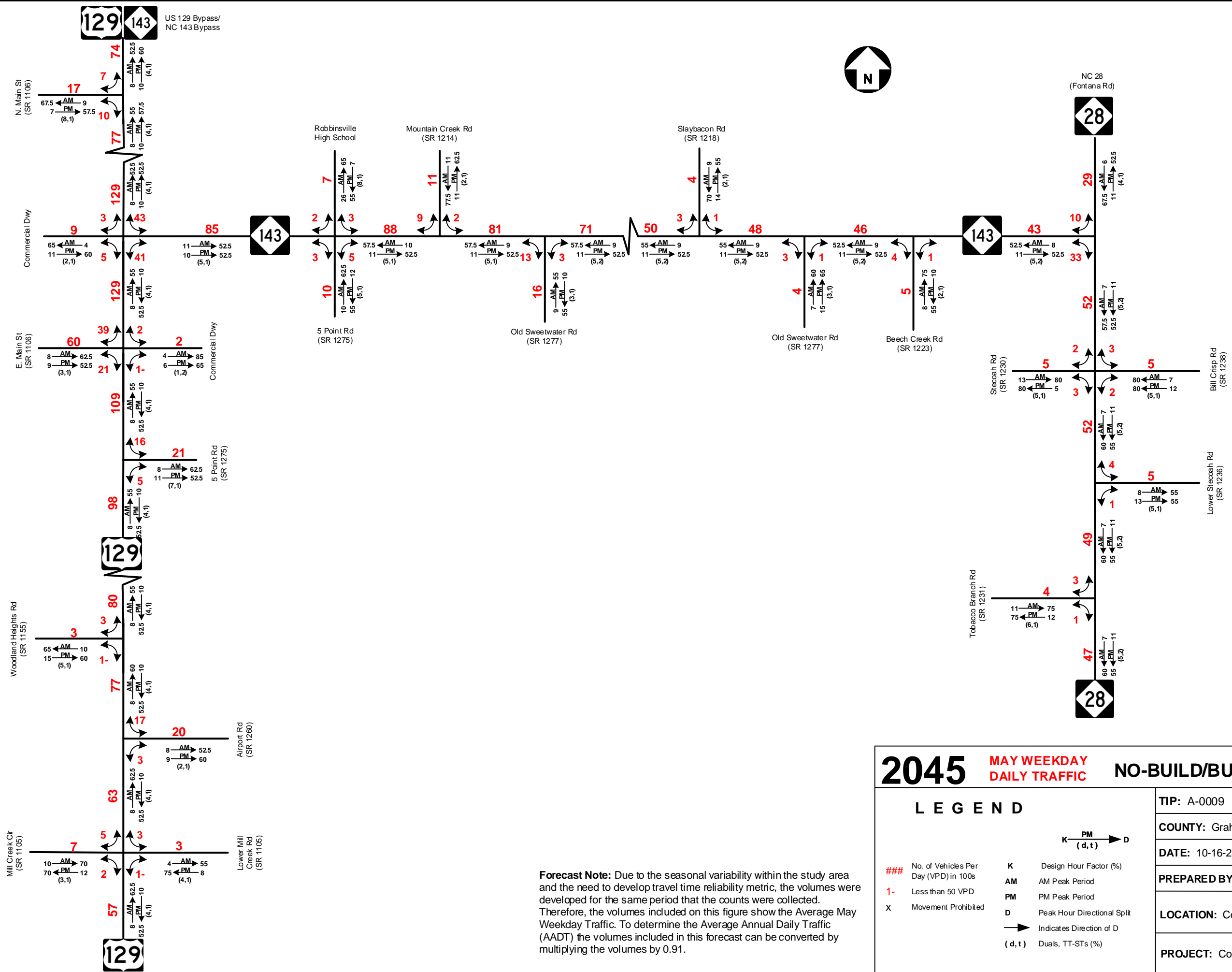
To estimate AADT volumes between 2019 and 2045, straight line interpolation between the 2019 and the 2045 scenarios is acceptable. AADT volumes may be extrapolated for up to two years immediately following 2045. If it is determined that any of these assumptions have become inconsistent with the project and surrounding area activity, please request updated projections at this location.

cc: (Final distribution for your records via e-mail as PDF attachments):
Keith Dixon, State Traffic Forecast Engineer (trafficforecast@ncdot.gov)



Forecast Note: Due to the seasonal variability within the study area and the need to develop travel time reliability metric, the volumes were developed for the same period that the counts were collected. Therefore, the volumes included on this figure show the Average May Weekday Traffic. To determine the Average Annual Daily Traffic (AADT) the volumes included in this forecast can be converted by multiplying the volumes by 0.91.

2019 MAY WEEKDAY DAILY TRAFFIC		NO-BUILD SCENARIO SHEET 1 OF 1	
LEGEND		TIP: A-0009	WBS: 32572.1.13
###	No. of Vehicles Per Day (VPD) in 100s	COUNTY: Graham	DIVISION: 14
1-	Less than 50 VPD	DATE: 10-16-2019	PREPARED BY: Patriot Transportation Engineering, PLLC
X	Movement Prohibited	LOCATION: Corridor K – Robbinsville to Stecoah	PROJECT: Corridor K – Robbinsville to Stecoah
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 (%)		



Forecast Note: Due to the seasonal variability within the study area and the need to develop travel time reliability metric, the volumes were developed for the same period that the counts were collected. Therefore, the volumes included on this figure show the Average May Weekday Traffic. To determine the Average Annual Daily Traffic (AADT) the volumes included in this forecast can be converted by multiplying the volumes by 0.91.

2045 MAY WEEKDAY DAILY TRAFFIC NO-BUILD/BUILD SCENARIO SHEET 1 OF 1	
LEGEND	
###	No. of Vehicles Per Day (VPD) 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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LOCATION: Corridor K – Robbinsville to Stecoah	
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