



February 22<sup>nd</sup>, 2022

Memorandum To: Ryan C. Newcomb, PE  
Division Project Engineer, Division 9  
North Carolina Department of Transportation

From: Tim Padgett, PE  
Kimley-Horn and Associates, Inc.

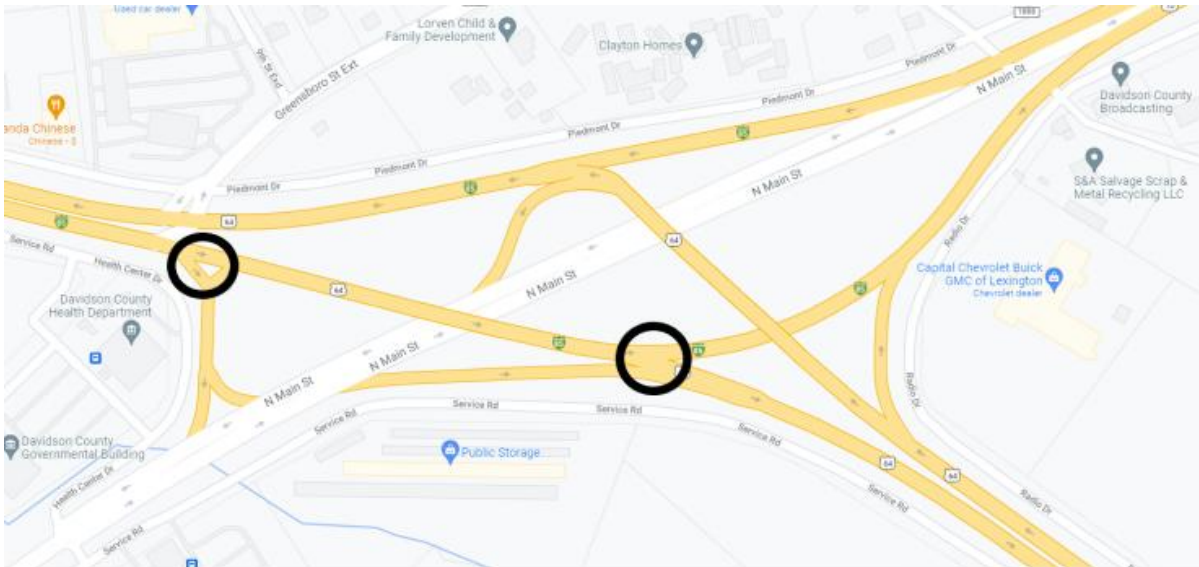
Subject: Traffic Forecast Update for B-5779  
Davidson County  
Replacement of Bridge No. 118 over SR 3346 (Main St)

Please find attached the 2021 traffic estimate and 2045 traffic forecast for B-5779 in Davidson County. The NCDOT Transportation Planning Division approved this forecast on February 22, 2022.

This project studies the replacement of Bridge No. 118 over SR 3346 (Main St).

Project Request - This forecast was requested by the Division 9 Project Engineer to provide an update to the original forecast. The forecast was updated to a base year of 2021 and a future year of 2045.

Base Year Estimates – The base year No-Build estimate was determined from the previous forecast, 2021 NCDOT AADT count information and traffic counts collected in October 2017 by VHB Engineering NC, P.C. Traffic counts were collected at the ramp from US 29/US 70/US 64/I-85 Bus SB to Main Street and at the ramp from Main Street NB to US 64 EB.



Design factors were estimated based on available data from the previous forecast, limited data available from the NCDOT Transportation Data Management System and the October 2017 counts.

Model Information – The Piedmont Triad Regional Model (PTRM V5.2) was used to determine growth rates on forecasted facilities.

Future Year Forecast – For the future year (2045) Build forecast, the following were considered when developing volumes (in all cases, the average annual rate method was used to calculate growth):

- Historic growth was calculated from AADT data (where available)
- Model growth was calculated from model run results for PTRM V5.2
- Growth was calculated from the previous forecast
- Davidson County growth rates (2019-2040) were examined

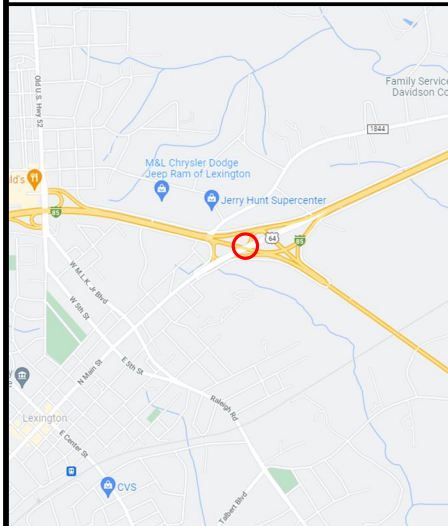
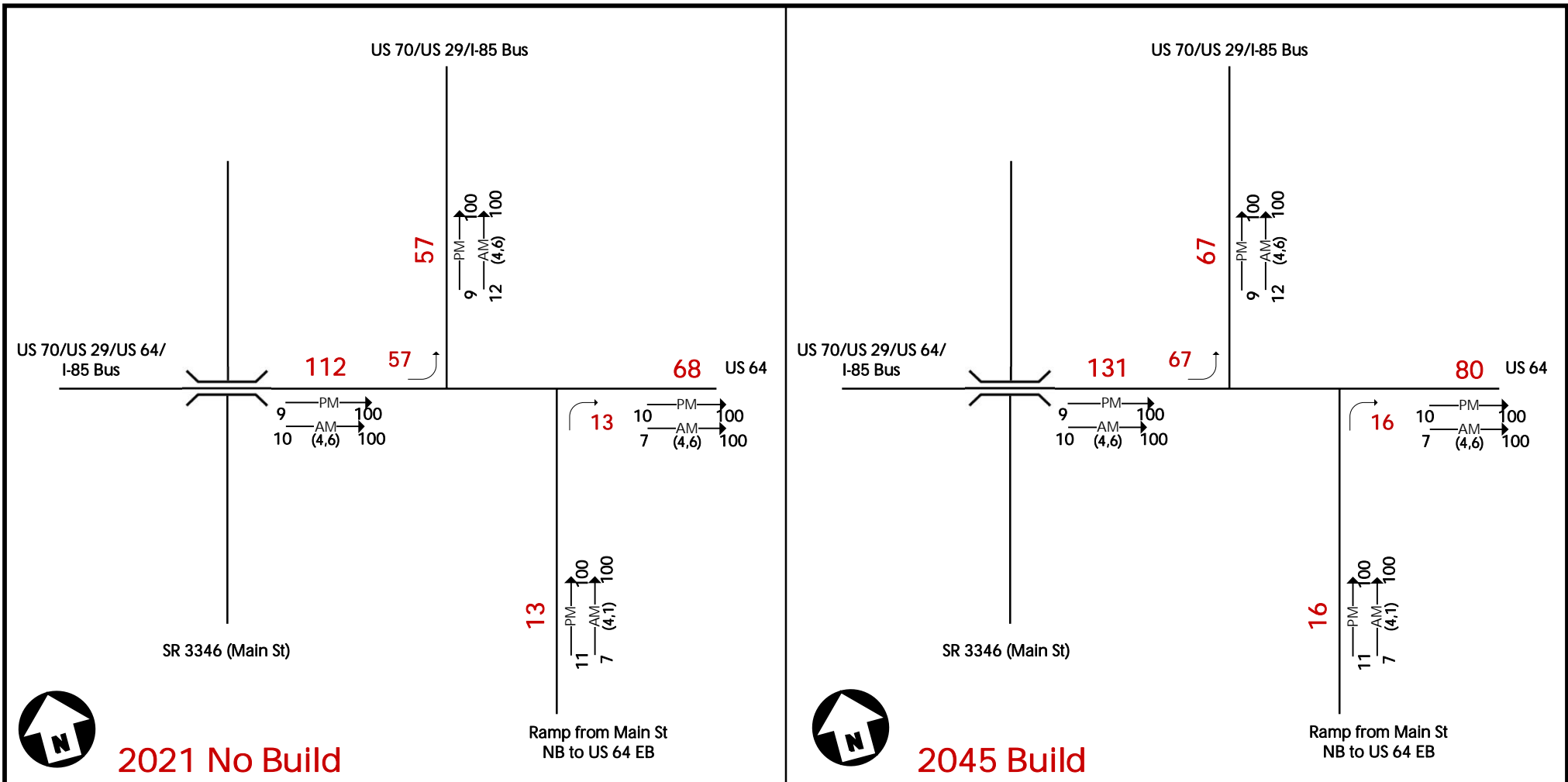
Growth rates were analyzed for all available data and applied to the 2021 No-Build Forecast using engineering judgement.

Based on the model data, the project, and engineering judgement, the future year Build design data was assumed to remain the same as the 2021 base year No-Build condition.

To determine any intermediate years, straight-line interpolation may be used. 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.

If we can be of any further assistance please do not hesitate to contact me at 919-653-2991, or [tim.padgett@kimley-horn.com](mailto:tim.padgett@kimley-horn.com)

Cc: [TrafficForecast@ncdot.gov](mailto:TrafficForecast@ncdot.gov)



## 2021/2045 AVERAGE ANNUAL DAILY TRAFFIC SHEET 1 of 1

### LEGEND

## Vehicles Per Day in 100s      1- Less than 50 VPD

← PM → DHV  
D — AM —> D  
DHV (d,t) D

DHV Design Hourly Volume (%) = K30  
AM/PM Peak Period  
D Peak Hour Directional Split (%)  
→ Indicates Direction of D  
(d,t) Dual, TT-STs (%)

TIP: B-5779

WBS# 45735.1.1

Davidson County

Division 9

Prepared By: Kimley»Horn

February 22, 2022

Location: US 64-29-70/I-85 Bus over SR 3346 (Main St)

Project: Replacement of Bridge No. 118 over SR 3346 (Main St)

## Traffic Forecast Tables

Table 1 - Historic AADT

Link	NCDOT Historic Traffic Count Data						Project-Specific Count Data (2017)		Previous Forecast (2016)	2021 Estimate
	2011	2013	2015	2017	2019	2021	TMC			
US 29/US 70/US 64/ I-85 Bus NB west at Bridge	-	-	-	-	-	-	12100	-	10700	11200
US 70/US 29/I-85 Bus NB	-	-	-	-	-	-	6500	-	5400	5700
Ramp from Main St NB to US 64 EB	1057	1010	1264	1245		1080	1300	-	1200	1300
US 64 EB	-	-	-	-	-	-	7000	-	6500	6800

Table 2 - Design Data

Intersection Name	D - Directional Distribution %				K - Peak Hour Factor % (PM Peak Hour)				K - Peak Hour Factor % (AM Peak Hour)				% Trucks (Daily)			
	2017 TMC Data	Previous Forecast	Chosen 2021	Chosen 2045	2017 TMC Data	Previous Forecast	Chosen 2021	Chosen 2045	2017 TMC Data	Previous Forecast	Chosen 2021	Chosen 2045	2017 TMC Data	Previous Forecast	Chosen 2021	Chosen 2045
US 29/US 70/US 64/ I-85 Bus NB west at Bridge	100%	100%	100%	100%	8%	10%	9%	9%	11%	-	10%	10%	(4,6)	(7,6)	(4,6)	(4,6)
US 70/US 29/I-85 Bus NB	100%	100%	100%	100%	7%	11%	9%	9%	13%	-	12%	12%	(4,6)	(12,6)	(4,6)	(4,6)
Ramp from Main St NB to US 64 EB	100%	100%	100%	100%	11%	11%	11%	11%	3%	-	7%	7%	(4,1)	(5,1)	(4,1)	(4,1)
US 64 EB	100%	100%	100%	100%	10%	10%	10%	10%	7%	-	7%	7%	(4,4)	(7,6)	(4,6)	(4,6)

Table 3 - Growth Rates

Link	2021 AADT Estimate	Historic Growth Rate (2011 - 2021)	Previous Forecast Growth Rate (2016 - 2040)	Model Growth Rate	Applied Growth Rates	2045 Build Volumes	
				Per Year Growth (2017 - 2045)		Model Estimate	FY Forecast
US 29/US 70/US 64/ I-85 Bus NB west at Bridge	11200	-	0.72%	0.49%	0.66%	9800	13100
US 70/US 29/I-85 Bus NB	5700	-	0.71%	0.59%	0.68%	3600	6700
Ramp from Main St NB to US 64 EB	1300	0.22%	0.64%	1.37%	0.87%	2300	1600
US 64 EB	6800	-	0.71%	0.44%	0.68%	6200	8000