



TECHNICAL MEMORANDUM

Date: May 4, 2026

To: Tim Athy, PE
Town of Holly Springs
Transportation Engineer

From: Lisa Lundeen, P.E.
Senior Traffic Engineer
Exult Engineering

Subject: Project Level Traffic Forecast for U-5889
Wake County

Introduction

Please find attached the 2025 and 2050 traffic forecast for U-5889. This traffic forecast was requested by the Town of Holly Springs and NCDOT Division 5 District 1 Office. NCDOT STIP project number U-5889 proposes to widen Avent Ferry Road to a four-lane divided facility from Ralph Stephens Road to Cass Holt Road in Holly Springs, North Carolina. The study area is located within the Capital Area Metropolitan Planning Organization (CAMPO) in Wake County.

This forecast has been reviewed and approved by the NCDOT Transportation Planning Division on May 4, 2026.

The following people were contacted during the development of this traffic forecast:

- Mike Bruff
- Chris Lukasina
- Alex Rikard
- Ben Upshaw
- David Keilson
- Phil Geary
- Keith Dixon
- Daniel Boulware
- Tim Gardiner
- Tim Maloney
- Sarah Sularz
- Tim Athy
- Morgan Nelson

The following scenarios are provided in this traffic forecast:

- 2025 base year no build
- 2050 design year no build
- 2050 design year build

The Triangle Regional Model (TRMG2v1.3.2) was used as the basis of the requested forecast. This forecast was developed using historical growth, 2025 traffic count data, model output, and engineering judgement.

Traffic Forecast History

VHB completed the previous U-5889 traffic forecast in March 2018 with the following scenarios:

- 2017 base year no-build
- 2017 base year build
- 2030 interim year no build
- 2030 interim year build
- 2045 design year no build
- 2045 design year build

The previous forecast studied an interim year to assess the magnitude of certain fiscally constrained projects in the 2045 MTP on Avent Ferry Road. These previous fiscally constrained projects in the 2045 MTP were no longer fiscally constrained in the 2050 MTP.

The previous traffic forecast studied the same intersections with Avent Ferry Road as this updated forecast. The previous forecast was referenced during the development of this updated forecast.

Fiscally Constrained Projects

The NCDOT 2026-2035 State Transportation Improvement Program (STIP) and the 2050 Metropolitan Transportation Plan (MTP) for CAMPO, adopted in February 2022, were reviewed to identify “Fiscally Constrained Projects” in the study area that may impact traffic patterns on Avent Ferry Road in future. The following projects were identified and assumed to be complete and open to traffic in 2050:

- HP-0014/A98: NC 55 from South Main Street to New Hill Road – upgrade corridor to 6-lane expressway with grade separation at Avent Ferry Road.
- HP-0017/A98b: NC 55 Bypass at South Main Street – convert existing at-grade intersection to interchange
- A98: Widen NC 55 Bypass from North Main Street to Honeycutt Connector
- A427a: Widen Avent Ferry Road from Piney Grove Wilbon to Elm Street
- A427c: Widen Avent Ferry Road from New Hill Holleman to Cass Holt Road
- A160a: Widen Ralph Stephens Road from Piney Grove-Wilbon Road to NC 55
- A160d: Construct Piney Grove-Wilbon Road from Brayton Park Place to Ralph Stephens Road
- A160e: Construct Ralph Stephens Road from Avent Ferry Road to South Main Street
- A511: Widen Piney Grove-Wilbon Road from Brayton Park Road to Southern FY Bypass

The Triangle Regional Model (TRMG2v1.3.2) used in this traffic forecast was reviewed for the expected impacts of the “Fiscally Constrained Projects” in the study area and are considered through the travel demand model.

Development Activity

During the field investigation, it was noted that the Eagles Landing Park development is currently under construction along Cass Holt Road across from the Holly Springs High School Southern Driveway. The Eagles Landing Park development is building a west leg at the study intersection of Cass Holt Road at Holly Springs High School Southern Driveway. Daily traffic volumes along this west leg were estimated from the *Cass Holt Road Park Traffic Impact Analysis* (Bolton & Menk, Inc., February 2024) and applied to the future year scenarios.

There are no other known development projects within the study area that would significantly impact the forecast.

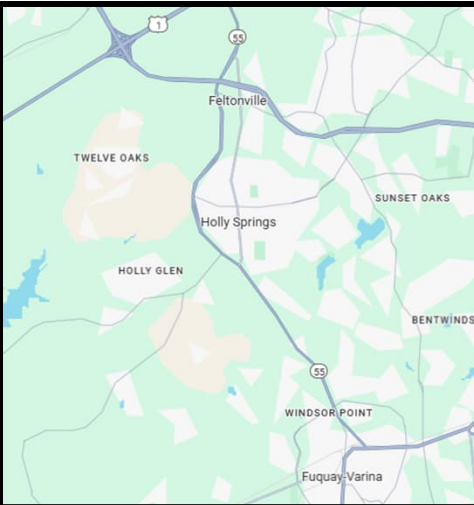
Methodology

- BYNB: Collected traffic counts, NCDOT historic AADTs, and the AADT trends projected to 2025 were used to develop the 2025 Base Year No-Build traffic estimate.
- FYNB: TRMG2v1.3.2 model was used to calculate the growth rates. The model's growth rates, and NCDOT historic AADT data were used to estimate the 2050 Future Year No-Build traffic forecast.
- FYB: TRMG2v1.3.2 model was used to estimate the impact of U-5889 (widening Avent Ferry Road) on travel demand and traffic flow in the study area. The model's diversion rates were used to generate the 2050 Future Year Build traffic forecast.

Interpolation

To determine volumes during any intermediate years, 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 project and surrounding area activity, a request should be made for updated projections at this location.

If you have any questions, please contact me at 984-500-5430 or LisaL@exultengineering.com.



Avent Ferry Road

2025 No-Build

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

DHV $\xrightarrow{\text{PM}}$ \rightarrow D
(d,t)

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

EXTENTS

Avent Ferry Road from Ralph Stephens Road to Holly Meadow Drive; Cass Holt Road from Avent Ferry Road to Holly Springs High School Southern Driveway.

Wake County Division 5

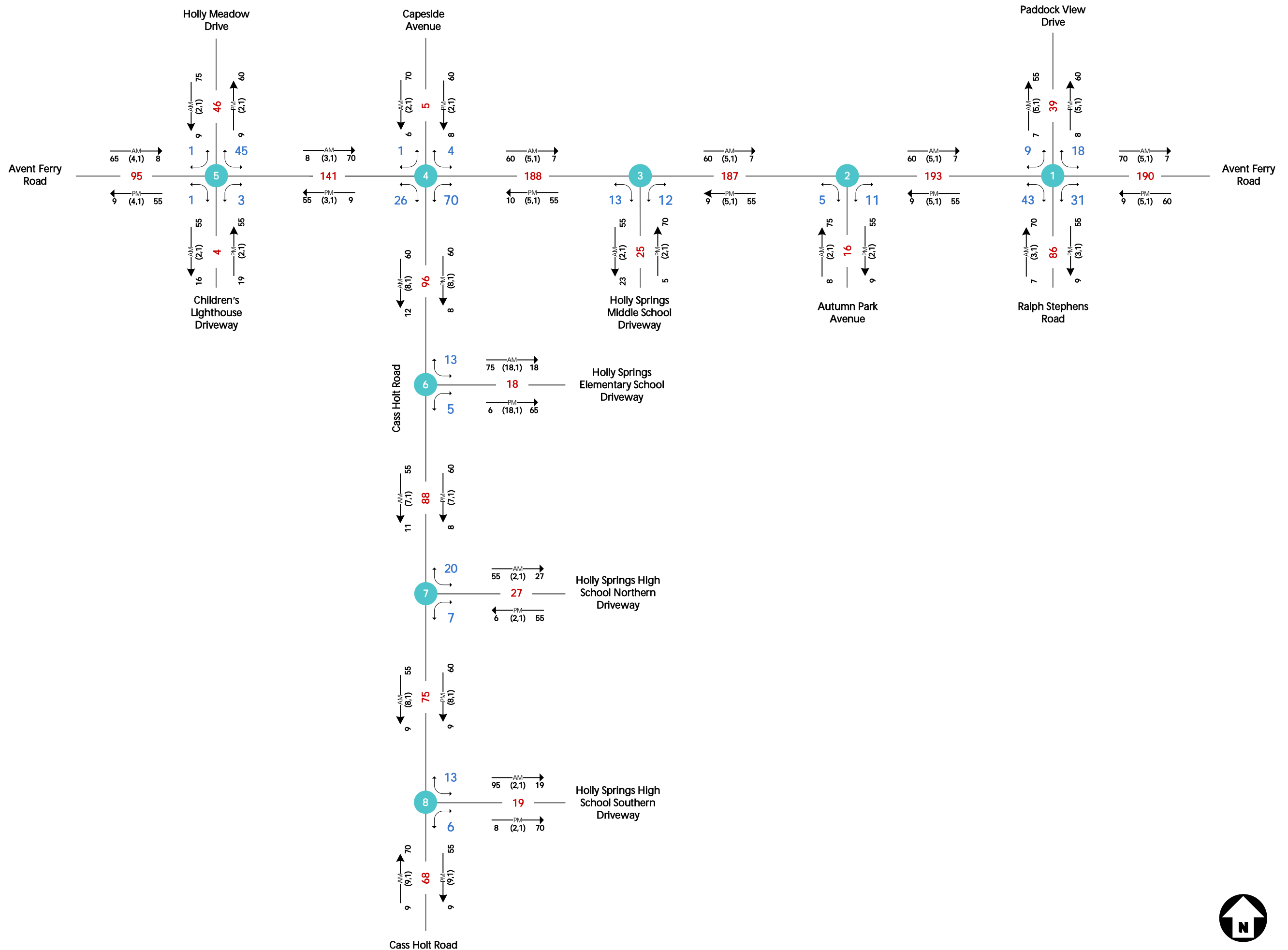
PROJECT

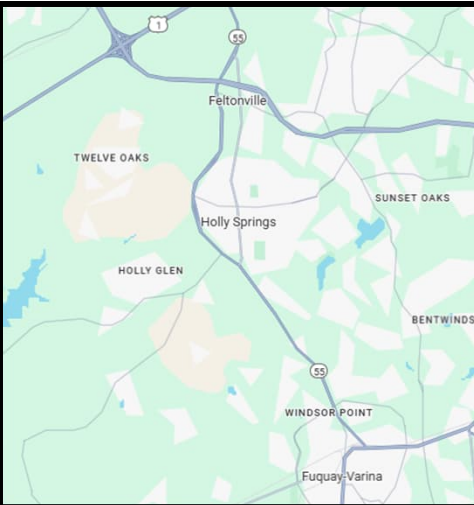
TIP: U-5889
 WBS: 44707.1.1

Widening of Avent Ferry Road from Ralph Stephens Road to Holly Meadow Drive.

SHEET 1 OF 3

January 7, 2026





Avent Ferry Road

2050 No-Build

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

DHV ^{PM} (d,t) → D

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

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Wake County Division 5

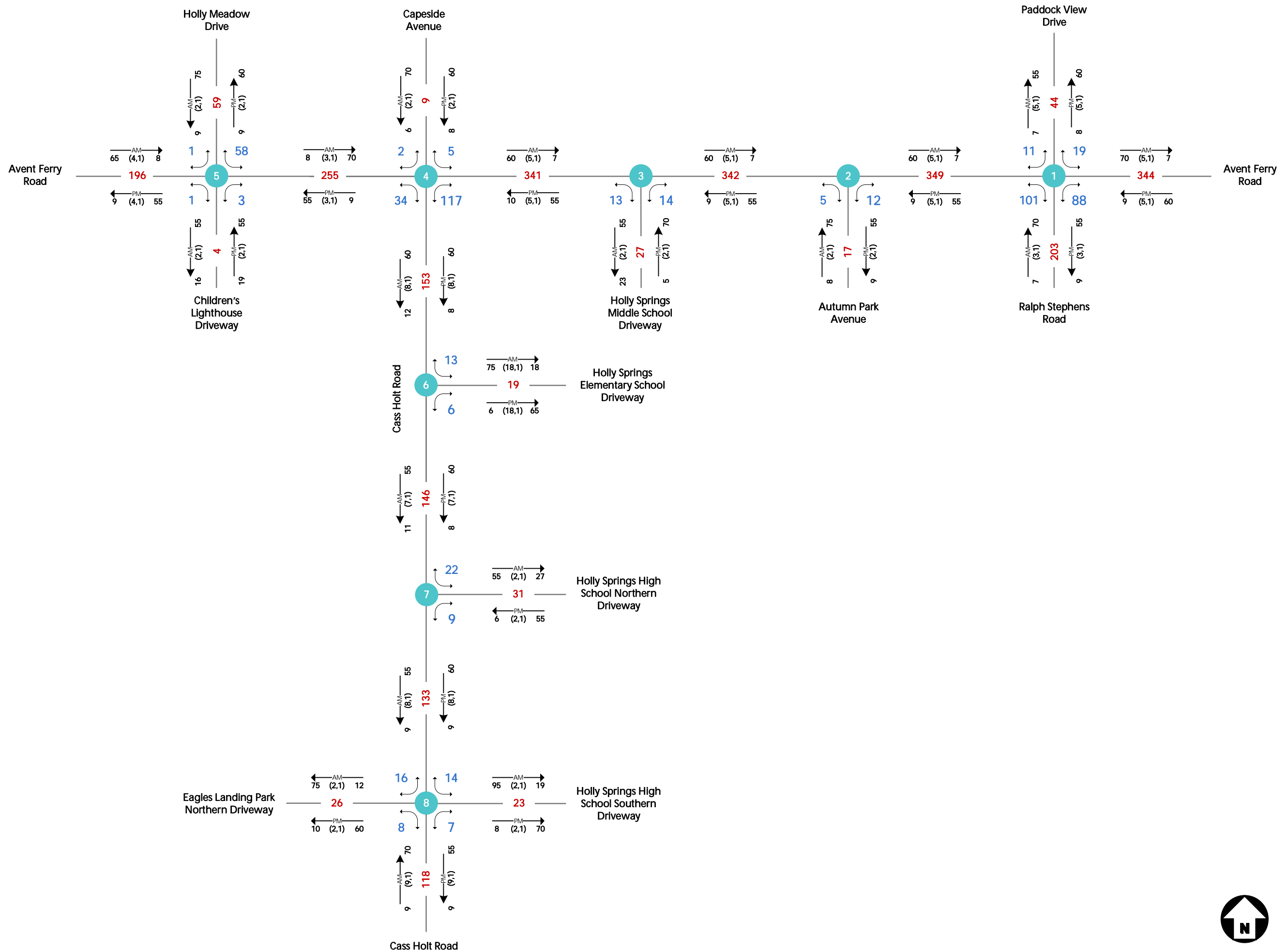
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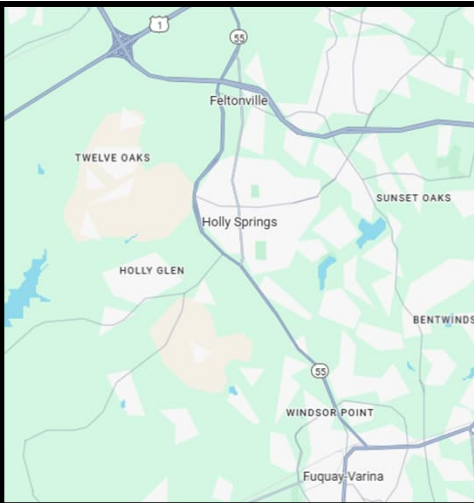
TIP: U-5889
 WBS: 44707.1.1

Widening of Avent Ferry Road from Ralph Stephens Road to Holly Meadow Drive.

SHEET 2 OF 3

January 7, 2026





Avent Ferry Road

2050 Buildout

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

DHV $\frac{PM}{(d,t)} \rightarrow D$

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

EXTENTS

Avent Ferry Road from Ralph Stephens Road to Holly Meadow Drive; Cass Holt Road from Avent Ferry Road to Holly Springs High School Southern Driveway.

Wake County Division 5

PROJECT

TIP: U-5889
 WBS: 44707.1.1

Widening of Avent Ferry Road from Ralph Stephens Road to Holly Meadow Drive.

SHEET 3 OF 3

January 7, 2026

