



April 6, 2021

MEMORANDUM TO: Mark Eatman, PE – Central Corridor Development Engineer
FROM: Timmons Group Project Team
SUBJECT: Traffic Forecast for STIP Project I-6059 (Alamance County)
SR 1981 (Trollingwood-Hawfields Road)

This forecast was reviewed and approved by the NCDOT Transportation Planning Division as of April 6, 2021.

Please find attached the 2019 / 2045 Traffic Forecast for the above-mentioned project. Project STIP I-6059 is defined improvements to the interchange at I-40/85 and Trollingwood-Hawfields Road near Mebane, NC. Subject project STIP I-6059 is currently programmed for planning and environmental study only in the STIP. Per the approved STIP, there is no proposed construction date for the subject project. This is the second forecast for this project. This project lies within the Burlington Graham Metropolitan Planning Organization (BGMPO) area.

The following individual stakeholders were consulted during the development of this forecast:

- Wannetta Mallette – Transportation Planner / BGMPO Administrator
- Wright Archer, PE – NCDOT Division 7 Engineer
- Dawn McPherson – NCDOT Division 7 Traffic Engineer
- Stephen Robinson, PE – NCDOT Division 7 Planning Engineer
- Tamara Njegovan – NCDOT Division 7 Corridor Development Engineer
- Chuck Edwards, PE – NCDOT District 1 Engineer
- Daryl Vreeland – NCDOT Transportation Planning Division
- Ashley Ownbey – City of Mebane Planning & Zoning
- Audrey Vogel – City of Mebane Planning & Zoning
- Cy Stober, AICP – City of Mebane Development Director
- Mike Nunn – City of Burlington Transportation Director

The following scenarios are provided:

- 2019 Base Year No-Build / Build (BYNB/B)
- 2045 Future Year No-Build / Build (FYNB/B)
- 2045 Future Year No-Build / Build with Access (FYNB/B w/Access)

Certain assumptions were made in the development of the forecast:

Fiscal Constraint: The project is located within the boundaries of the BGMPO. There are three fiscally constrained projects found in the BGMPO 2045 Metropolitan Transportation Plan (adopted June 16, 2020) and NCDOT STIP that are assumed to be complete and open to traffic by 2045. All projects will impact traffic and travel patterns in the project study area. Listed are projects that are (a) up / downstream of the SR 1981 (Trollingwood-Hawfields Road) corridor, (b) connected to the SR 1981 (Trollingwood-Hawfields Road) corridor, or (c) parallel to the SR 1981 (Trollingwood-Hawfields Road) corridor and will affect this facility:

- **U-6013** – Widen NC-119 to a multi-lane cross-section from SR 1981 (Trollingwood-Hawfields Road) / SR 2126 (Old Hillsborough Road) to Deerfield Trace / Lowes Boulevard



- **U-3109A** – NC-119 Relocation, I-40 / I-85 to North of SR 1921 (Mebane Rogers Road)
- **U-5538C** – SR 1981 (Trollingwood-Hawfields Road) in Mebane, add turn lanes.

Development Activity: Based upon information provided by contacted stakeholders, there are several approved area developments that will significantly affect traffic within the project area: The Villages at Copperstone (50 new dwellings), Cambridge Park (731 new dwellings), Magnolia Glen (369 new dwellings), Hawfields Landing (approximately 500 new dwellings, and the UPS Distribution Center (part of the North Carolina Commerce Park – to generate approximately 450 daily projected trips). Additionally, there are several parcels for sale along NC 119, SR 1981 (Trollingwood-Hawfields Road), SR 2657 (Sen Ralph Scott Parkway), and Gregory Poole Lane.

There are several industrial and commercial developments in the area that generate a large number of Duals and TTSTs.

Travel Demand Model: The Piedmont Triad Regional Model, Version 5.2 (PTRMv5.2), was utilized as a tool in the development of this traffic forecast. The model has a base year of 2017 and future year of 2045. The model runs in TransCAD 5 Build 2110. All model runs used for this forecast were created by Timmons Group.

Methodology: The 2019 BYNB/B traffic forecast volumes and design factors were developed based upon current traffic counts and projections from historic AADT data. The 2040 FYNB/B traffic forecast volumes were initially calculated using a combination of linear growth rates from historic AADT data, model data, and input from project Stakeholders. Development of the 2040 FYNB/B traffic forecast volumes were also determined by applying the percent changes found in the PTRMv5.2 to the 2019 BYNB traffic forecast volumes. Engineering judgment adjustments were applied (as needed) to finalize the forecast volumes and develop a balanced forecast.

The July 2020 Lowes Boulevard Corridor Plan Preliminary Future Traffic Forecast (created by Ramey Kemp Associates) was utilized to help determine the FYNB/B w/Access traffic forecast volumes. These projections, along with input from project Stakeholders, and Engineering judgement were used to determine the final forecast volumes and develop a balanced forecast.

Interpolation: 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 you have any questions or I can be of further assistance, please do not hesitate to contact Jeff Hochanadel at 919-866-4511, or e-mail at jeff.hochanadel@timmons.com.

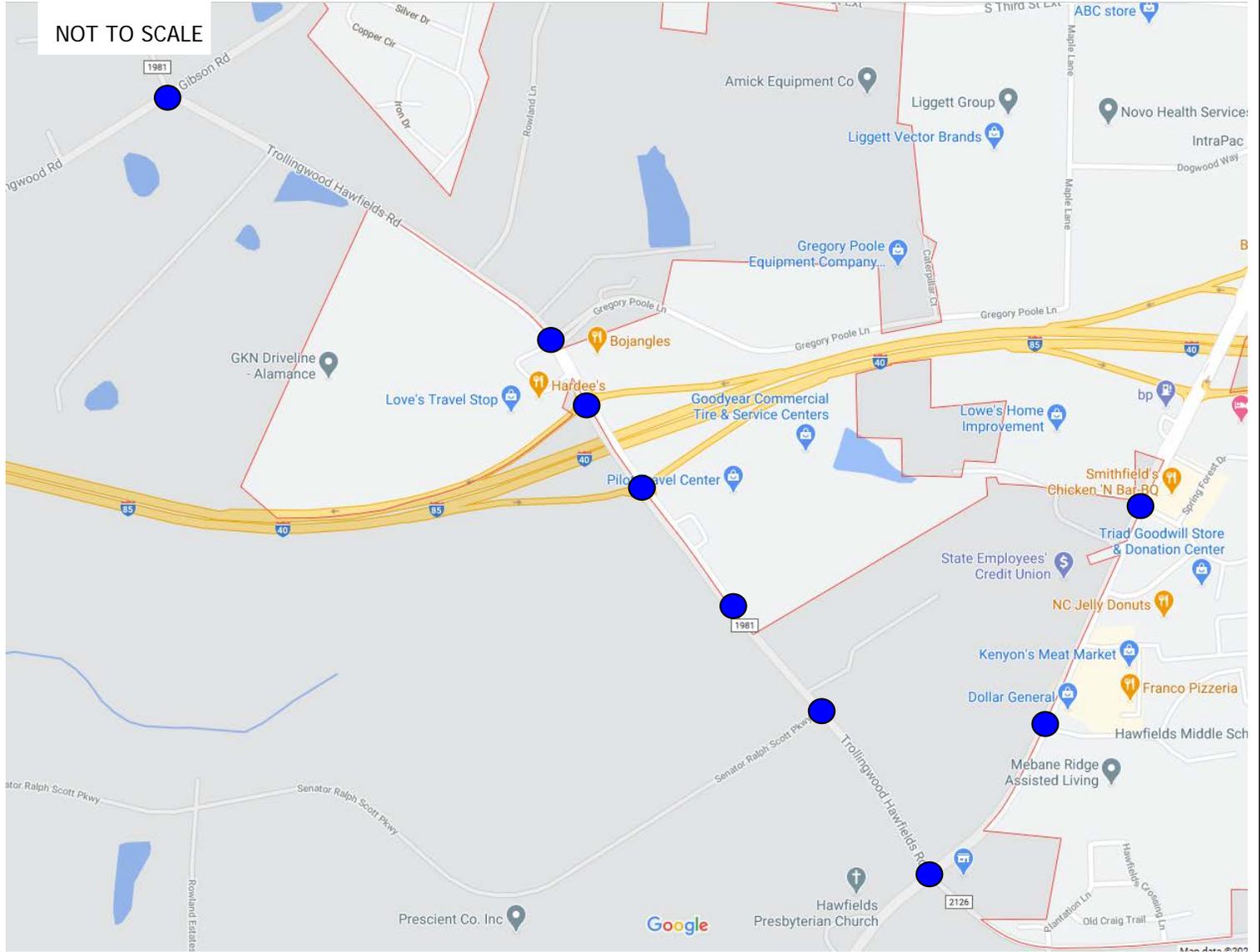
Sincerely,

Jeffrey P. Hochanadel, PE, PTOE
North Carolina Transportation Group Leader

(Attachments)



NOT TO SCALE



Legend

 = Study Area Intersection

Project Study Area

Trollingwood-Hawfields Road
Improve interchange at I-40/85 and SR 1981
(Trollingwood-Hawfields Road)

STIP Project I-6059

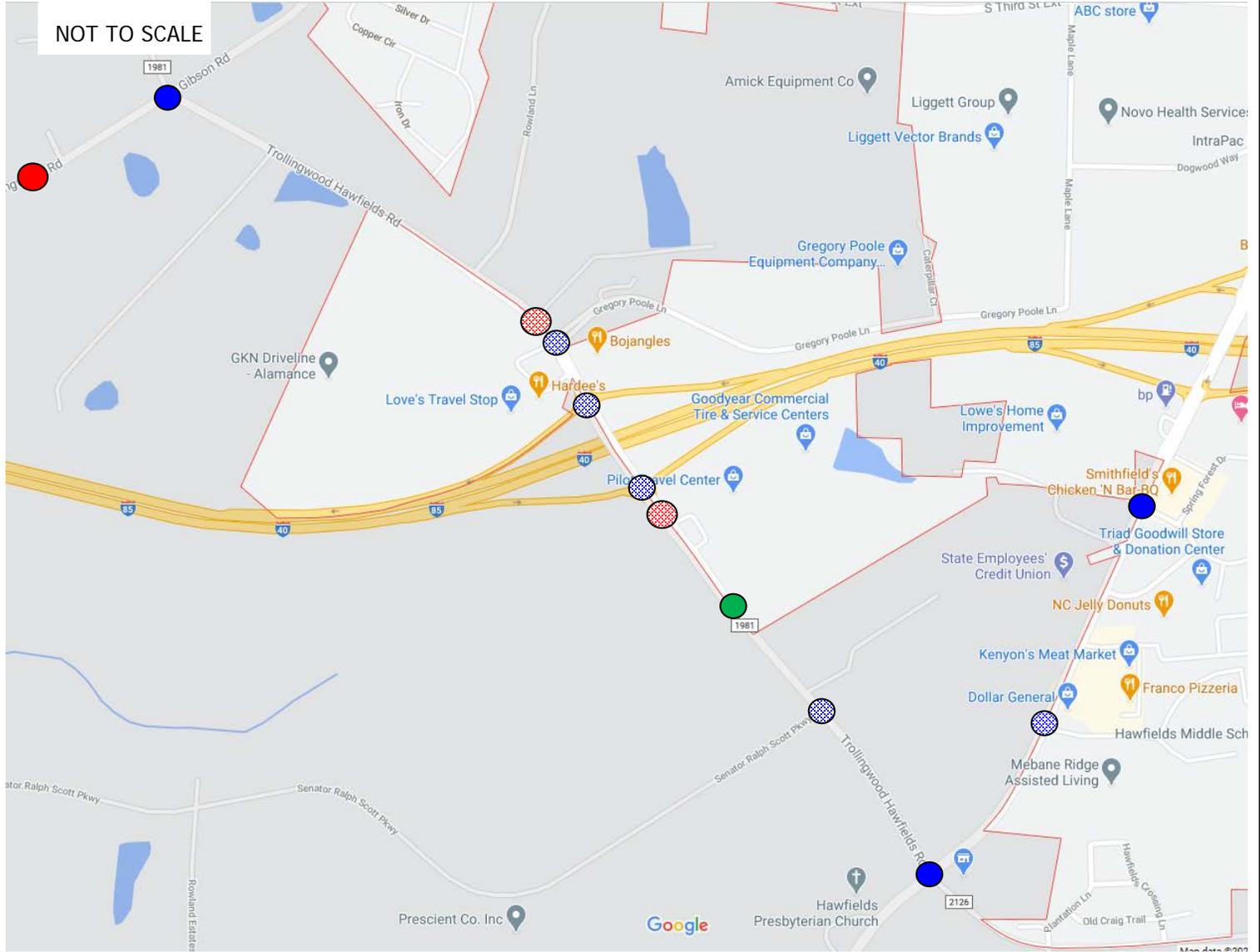


Figure

1



NOT TO SCALE



Legend

- = Class Count Location
- = TMC Location
- = Future Intersection
- = Class Count Location (2019)
- = TMC Location (2018/2019)

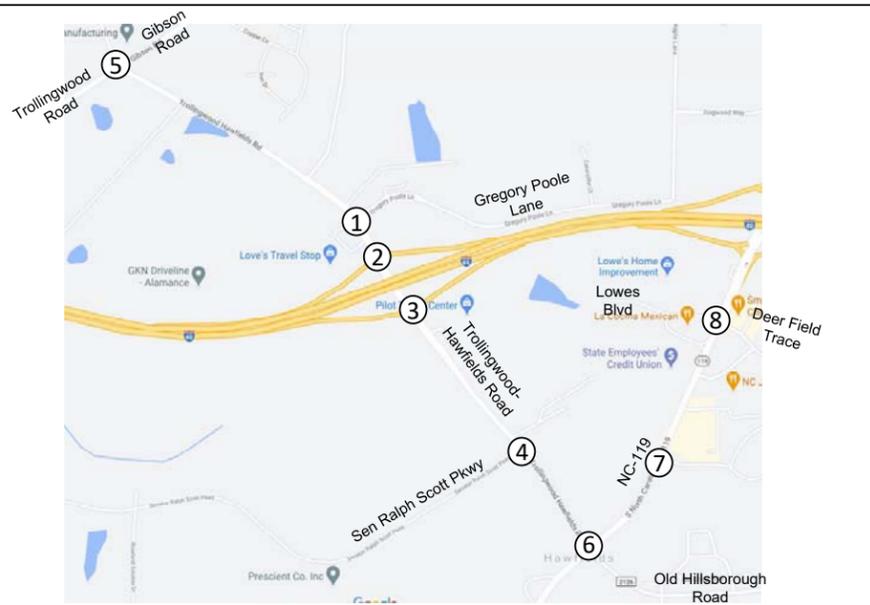
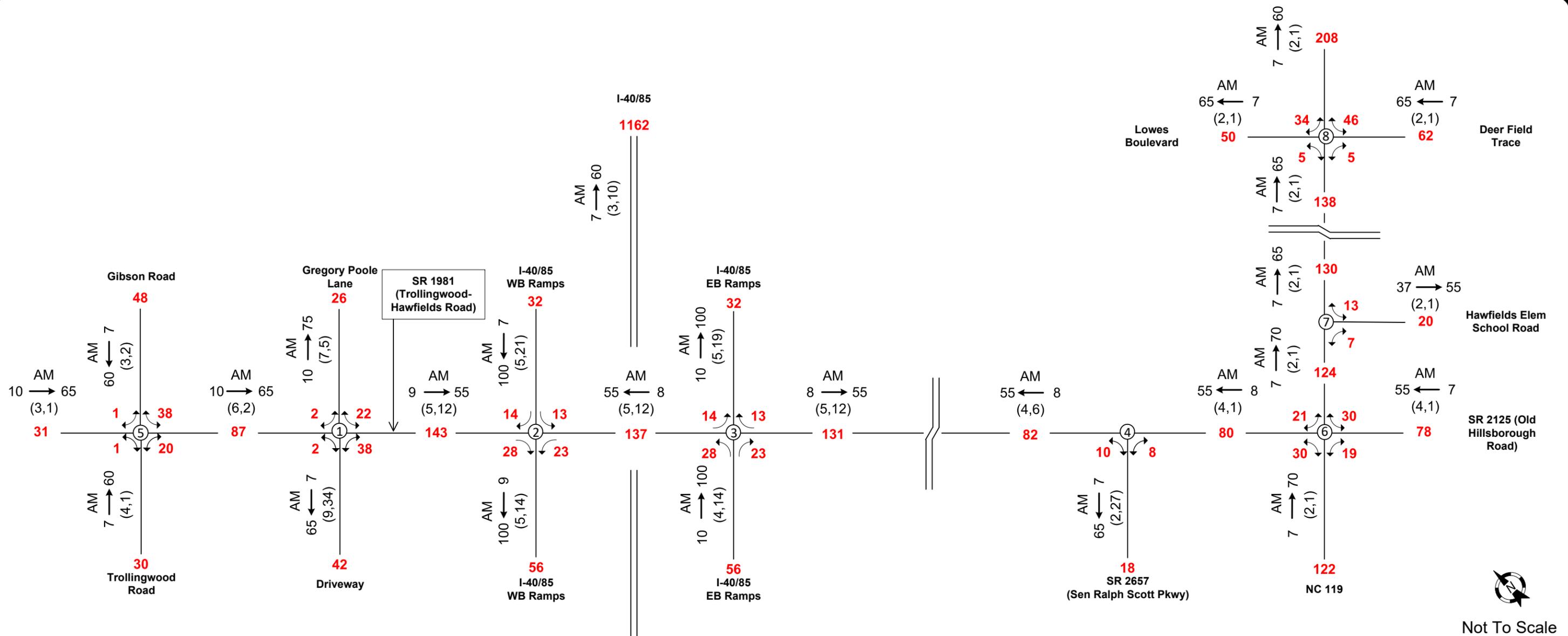
Turning Movement / Classification Traffic Count Locations



Trollingwood-Hawfields Road
 Improve interchange at I-40/85 and SR 1981
 (Trollingwood-Hawfields Road)

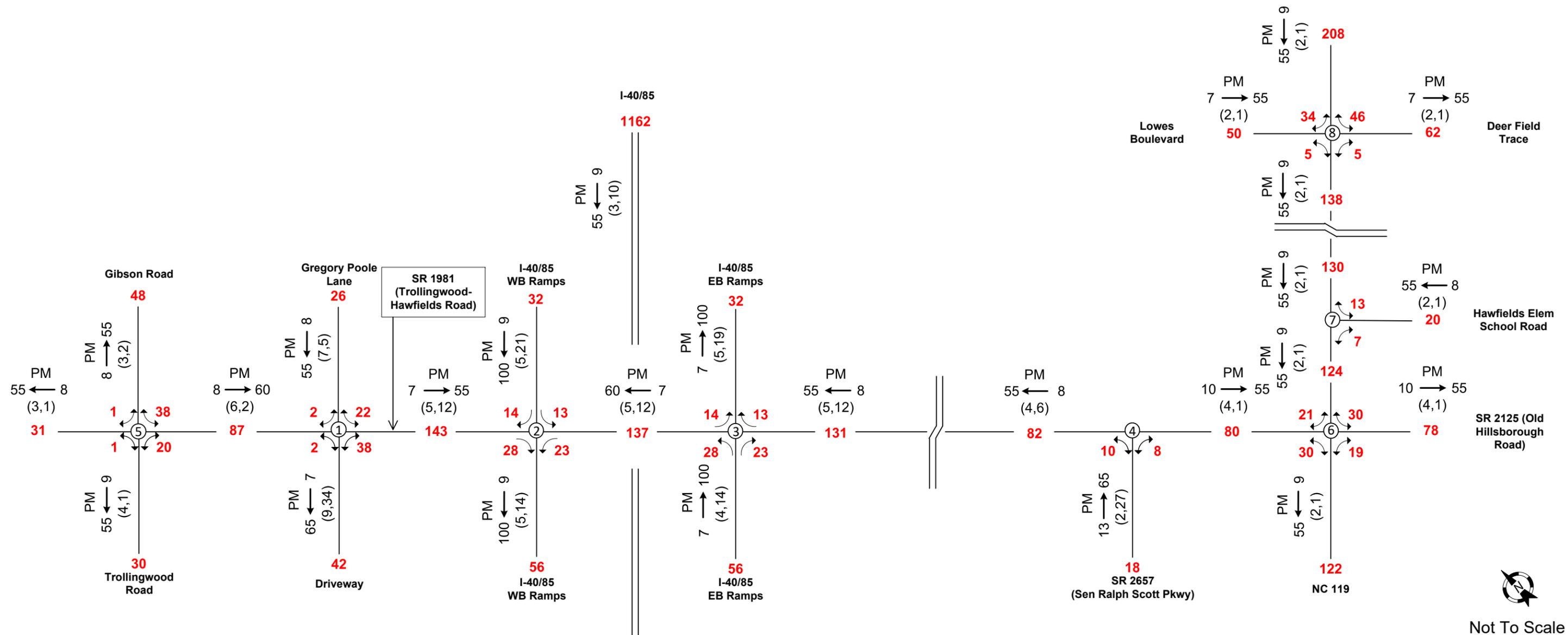
STIP Project I-6059

Figure
 2

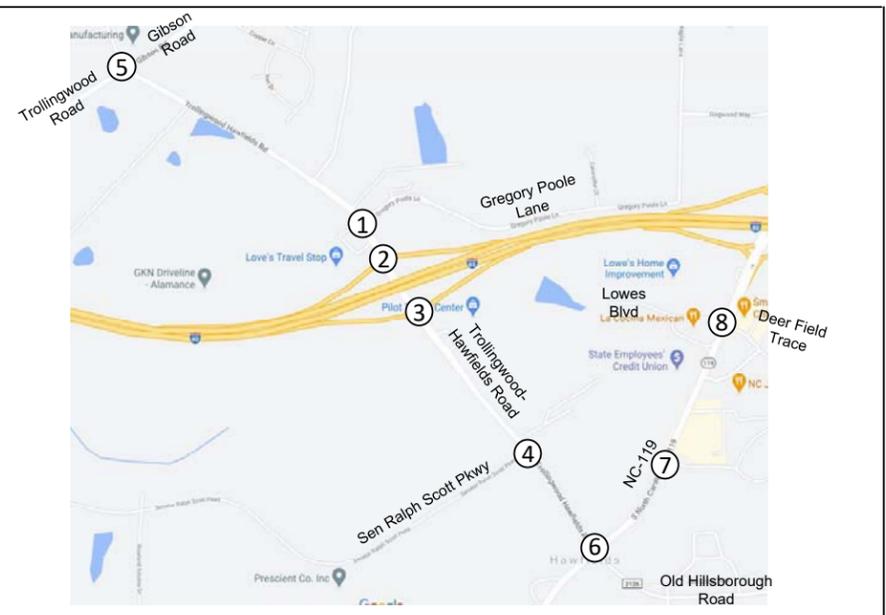


2019 AVERAGE ANNUAL DAILY TRAFFIC Base Year No-Build/Build (AM Factors) **FIGURE 3A (SHEET 1 OF 1)**

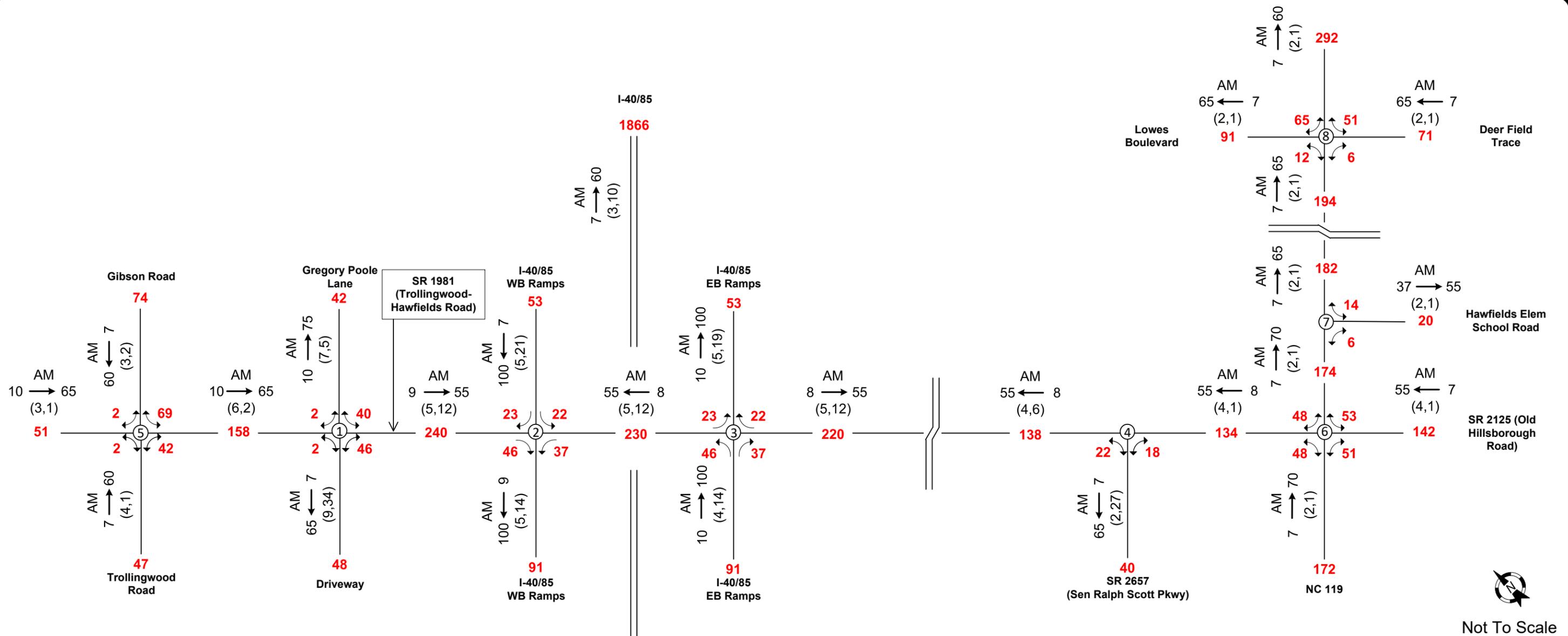
| | |
|--|-----------------------|
| TIP: I-6059 | WBS: 34263.1.1 |
| COUNTY: Alamance | DIVISION: 7 |
| DATE: 4-06-2021 | |
| PREPARED BY: Jeff Hochanadel, PE, PTOE | |
| LOCATION: SR 1981 from north of Gregory Poole Ln to south of SR 2657. | |
| PROJECT: Improve interchange at I-40/85 and SR 1981 | |



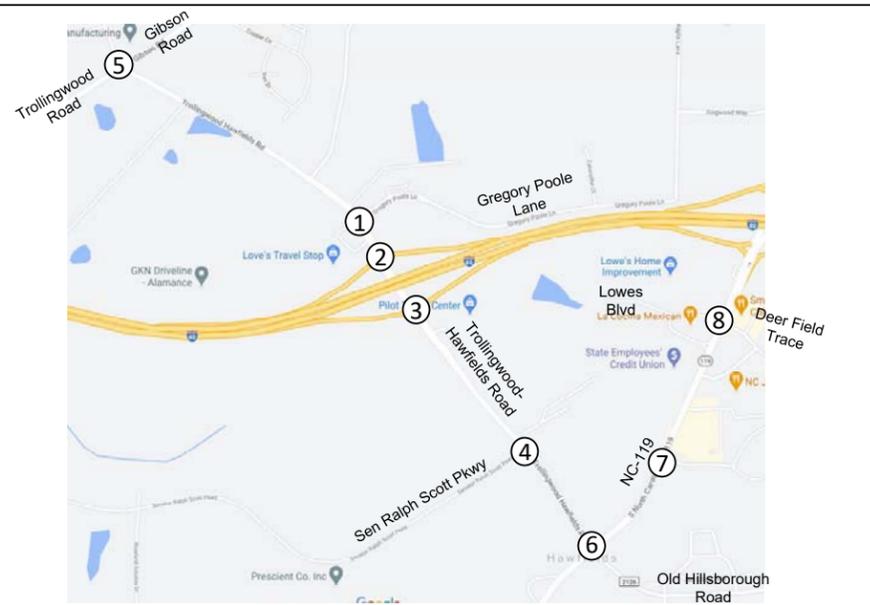
Not To Scale



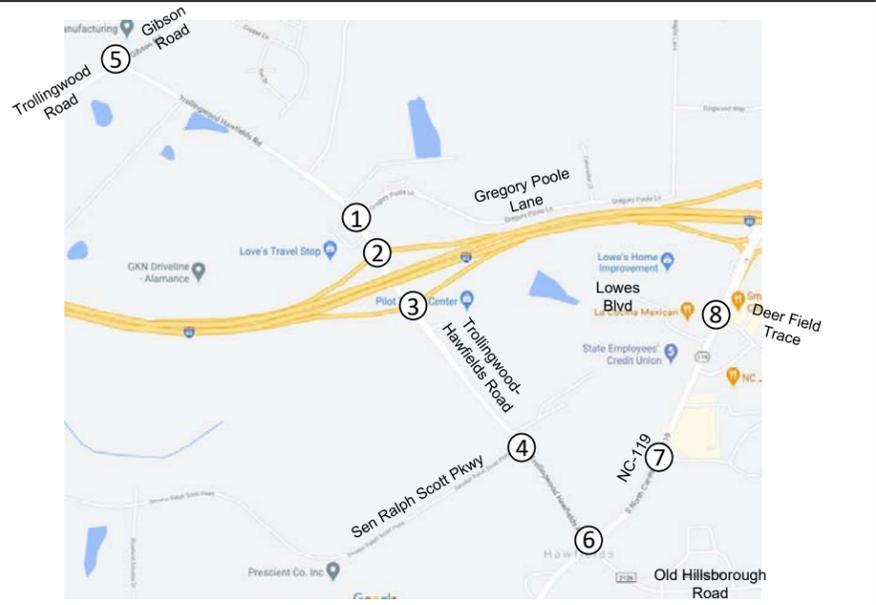
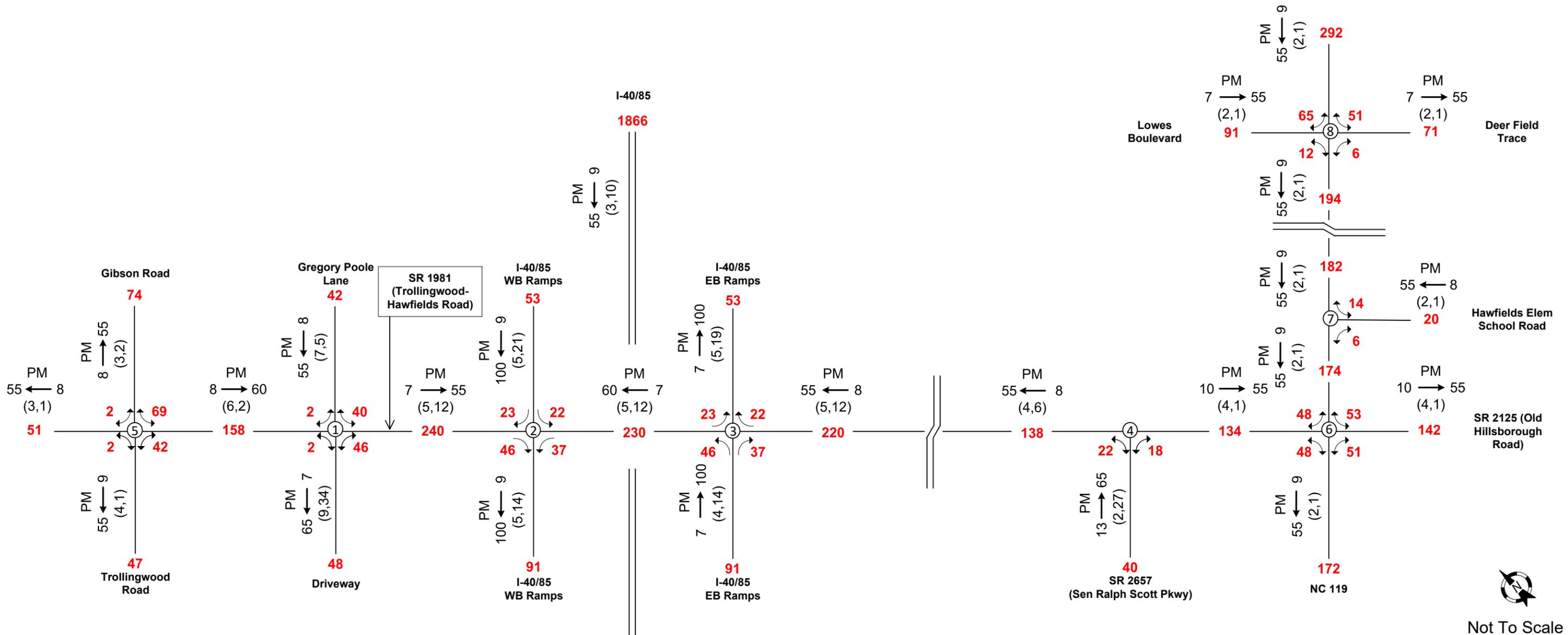
| | | | |
|-------------|---|---------------------------------------|--|
| 2019 | AVERAGE ANNUAL DAILY TRAFFIC | Base Year No-Build/Build (PM Factors) | FIGURE 3B (SHEET 1 OF 1) |
| | LEGEND ### No. of Vehicles Per Day in 100s -1 Less than 50 vpd X Movement Prohibited K → D (d, t) K Design Hour Factor (%) PM AM Peak Period D Peak Hour Direction Split (%) → Indicates Direction of D (d, t) Duals, TT-STs (%) | | TIP: I-6059 COUNTY: Alamance DATE: 4-06-2021 PREPARED BY: Jeff Hochanadel, PE, PTOE LOCATION: SR 1981 from north of Gregory Poole Ln to south of SR 2657. PROJECT: Improve interchange at I-40/85 and SR 1981 |
| | | | WBS: 34263.1.1 DIVISION: 7 |



Not To Scale



| | | | |
|-------------|--|---|------------------------------------|
| 2045 | AVERAGE ANNUAL DAILY TRAFFIC | Future Year No-Build/Build (AM Factors) | FIGURE 4A (SHEET 1 OF 1) |
| | LEGEND | | TIP: I-6059 |
| | <ul style="list-style-type: none"> ### No. of Vehicles Per Day in 100s -1 Less than 50 vpd X Movement Prohibited AM AM Peak Period D Peak Hour Direction Split (%) → Indicates Direction of D (d, t) Duals, TT-STs (%) | | WBS: 34263.1.1 |
| | | | COUNTY: Alamance |
| | | | DIVISION: 7 |
| | | DATE: 4-06-2021 | |
| | | PREPARED BY: Jeff Hochanadel, PE, PTOE | |
| | | LOCATION: SR 1981 from north of Gregory Poole Ln to south of SR 2657. | |
| | | PROJECT: Improve interchange at I-40/85 and SR 1981 | |

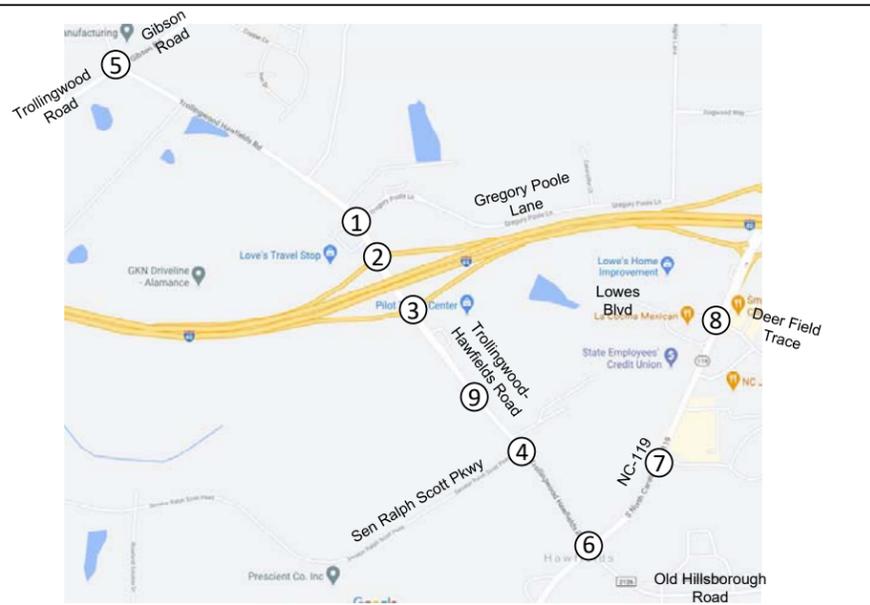
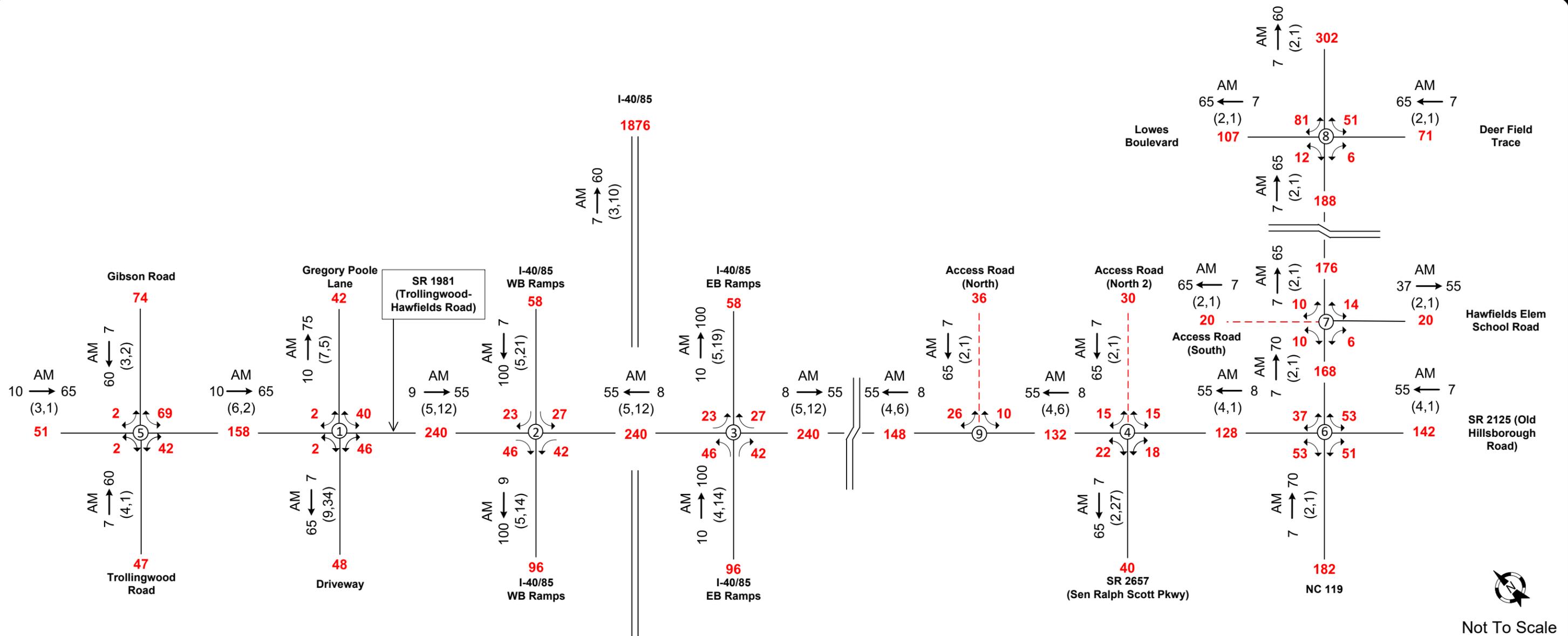


2045 AVERAGE ANNUAL DAILY TRAFFIC Future Year No-Build/Build (PM Factors) **FIGURE 4B (SHEET 1 OF 1)**

LEGEND

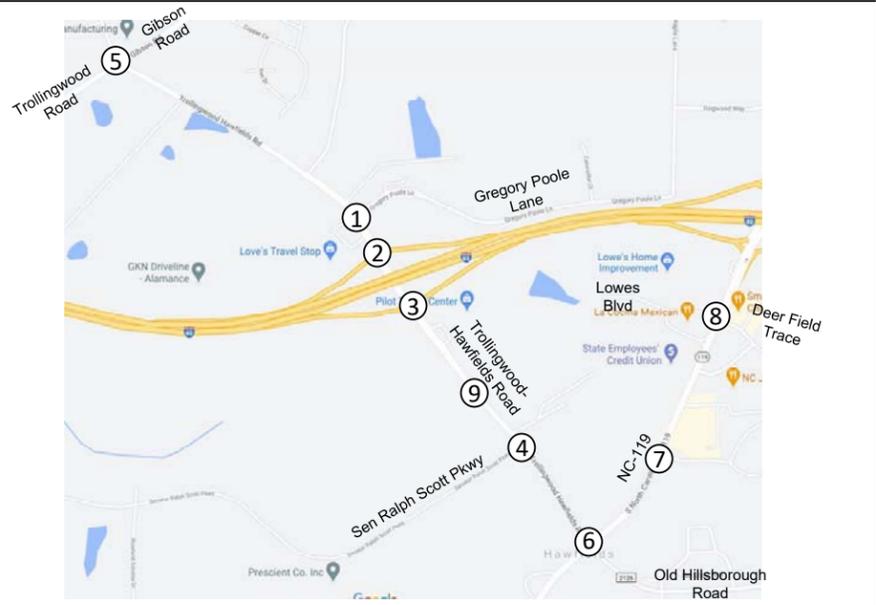
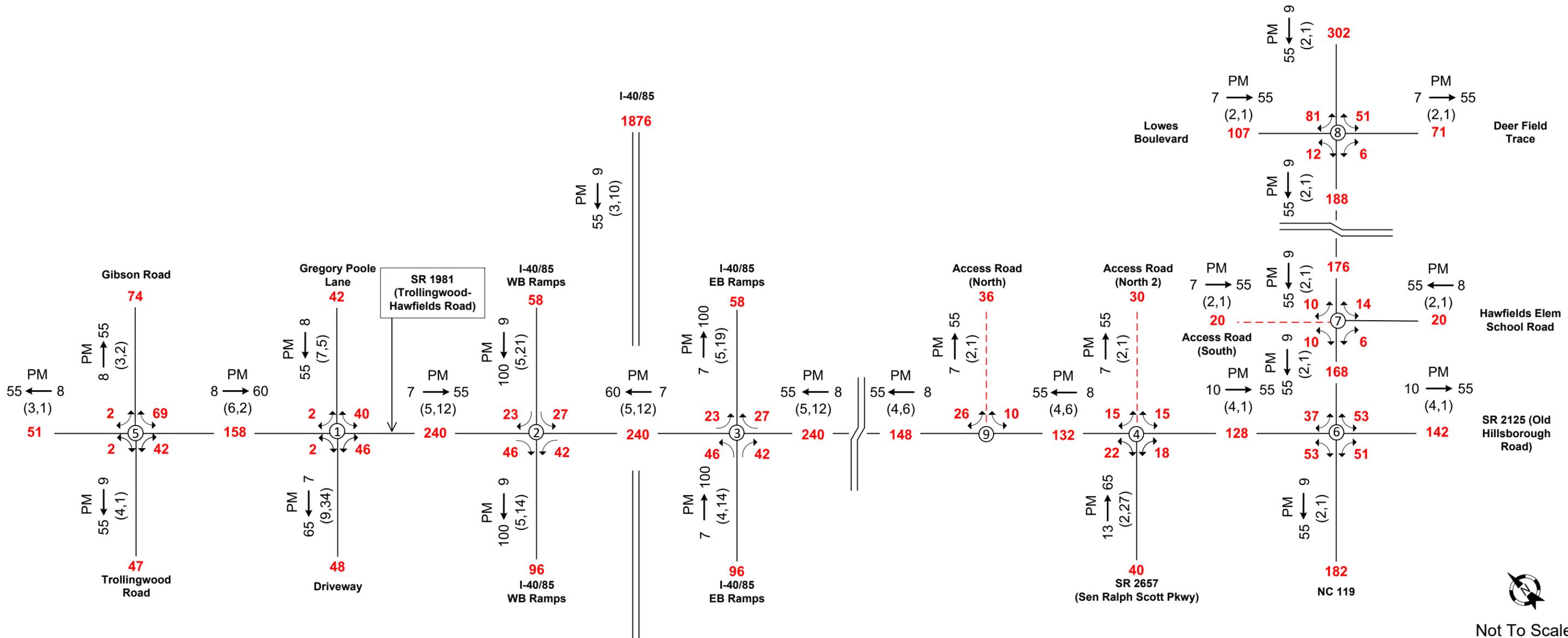
- ### No. of Vehicles Per Day in 100s
- 1 Less than 50 vpd
- X Movement Prohibited
- PM AM Peak Period
- K → D Peak Hour Direction Split (%)
- (d, t) Duals, TT-STs (%)

| | | | |
|--|--|-----------------------|--|
| TIP: I-6059 | | WBS: 34263.1.1 | |
| COUNTY: Alamance | | DIVISION: 7 | |
| DATE: 4-06-2021 | | | |
| PREPARED BY: Jeff Hochanadel, PE, PTOE | | | |
| LOCATION: SR 1981 from north of Gregory Poole Ln to south of SR 2657. | | | |
| PROJECT: Improve interchange at I-40/85 and SR 1981 | | | |



2045 AVERAGE ANNUAL DAILY TRAFFIC Future Year No-Build/Build **FIGURE 5A**
w/Access Rd (AM Factors) (SHEET 1 OF 1)

| | | |
|--|--|-----------------------|
| LEGEND | TIP: I-6059 | WBS: 34263.1.1 |
| | COUNTY: Alamance | DIVISION: 7 |
| | DATE: 4-06-2021 | |
| | PREPARED BY: Jeff Hochanadel, PE, PTOE | |
| | LOCATION: SR 1981 from north of Gregory Poole Ln to south of SR 2657. | |
| PROJECT: Improve interchange at I-40/85 and SR 1981 | | |



Not To Scale