# TRAFFIC NOISE REPORT

I-40 Widening

(STIP Project I-3306A)

Orange County

WBS 34178.1.1

February 2019

Prepared for:

North Carolina Department of Transportation
NCDOT Environmental Analysis Unit
Traffic Noise & Air Quality Group

Prepared by:

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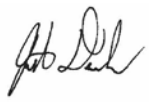

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## Executive Summary

The purpose of this Traffic Noise Report (TNR) is to examine and document traffic noise impacts and potential noise mitigation measures associated with project STIP No. I-3306A, which proposes widening of I-40 in Hillsborough and Chapel Hill. The project limits are from the I-85/I-40 junction in Orange County to US 15/501 in western Durham County. The project will alleviate congestion along I-40 and improve connectivity and continuity in the area. The NCDOT published a feasibility study for this project in October 2016. The general location of the project area is shown on ***Figures 1-24***. The portion of I-40 analyzed in this TNR is the far western segment of a larger I-40 projected widening project stretching to Wade Ave in Wake County. The design for the combined projects consists of widening existing I-40 from 4 to 6 lanes of traffic.

This TNR documents the Existing (2013), No-Build (2040), and Design Year (2040) Build noise levels associated with the I-40 widening I-3306A. Noise monitoring for this project occurred during typical, weekday conditions in 36 Noise Study Areas (NSAs). Out of 74 proposed monitoring locations, seven sites were excluded from the field work, one site had a duration of 30-minutes, two sites had a duration of 24 hours, and the remaining 64 sites were 20-minute duration. Traffic Noise modeling was conducted for a total of 486 receptors, which includes the 68 monitoring locations using the FHWA Traffic Noise Model (TNM 2.5) to gain a thorough understanding of the Existing (2013) noise environment and to determine how the proposed improvements would affect the noise levels throughout the project area. For reporting purposes, the project was divided into 36 NSAs. Traffic Noise modeling was completed for Existing (2013), No-Build (2040), and Design Year (2040) Build conditions.

Design Year (2040) Build noise levels were predicted at each modeled receptor under the proposed improvements. Design Year (2040) Build noise levels are predicted to approach or exceed the NCDOT Noise Abatement Criteria within 23 NSAs. The results of the analysis indicate that 86 receptors representing 78 residential land uses, three athletic field receptors, one playground, one cemetery seating area, one outdoor seating area, and two trail receptors were impacted. The athletic field and trail receptors were analyzed using equivalent receptor methodology. Details on how impacts were totaled can be found in ***Appendix C***. The total number of impacts for both the athletic receptors and trail receptors calculated using the NCDOT Equivalent Receptor Calculation Spreadsheet. Since most values populate as a decimal, totals for these impacts were rounded up to one impact (one impact for the athletic field in NSA 5 and one impact for the trail in NSA 14). All impacts are given consideration for noise abatement; however, some receptor locations may not meet NCDOT's feasibility criteria. In accordance with NCDOT feasibility criteria, fifteen NSA's, accounting for 87 impacted sites are eligible for consideration for noise abatement measures. Noise barriers were evaluated and are recommended for preliminary construction in NSAs 6, 13, 22b, and 32 pending any engineering, structural or environmental concerns (***Table 1***). Any noise impacts that occur because of roadway construction measures are anticipated to be temporary in nature and will cease upon completion of the project construction phase.

**Table 1: Feasible and Reasonable Noise Barriers**

| Noise Barrier ID | NSA | Location | Length | Panel Height Range | Average Panel Height | Area | Number of Benefited Receptors | Area per Benefited Receptor |
|---|---|---|---|---|---|---|---|---|
| NW6 | NSA 6 | Shoulder | 2,010’ | 9-17’ | 16’ | 31,829SF | 22 | 1,384SF |
| NW13 | NSA 13 | Shoulder | 1,094’ | 9’ | 9’ | 9,847F | 16 | 615SF |
| NW22b | NSA 22b | Shoulder | 360’ | 10-11’ | 10’ | 3,510SF | 2 | 1,755SF |
| NW32 | NSA 32 | Shoulder | 2,940’ | 8-16’ | 12’ | 37,480SF | 25 | 1,499SF |

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## 1.0 Project Location and Description

The North Carolina Department of Transportation (NCDOT) proposes to widen I-40 in Hillsborough and Chapel Hill, Orange County, North Carolina from four to six lanes with a posted speed limit of 65 mph and design speed limit of 70 mph starting at I-85 in Orange County to the Durham County line. In conjunction, the projects would alleviate congestion along I-40 and improve connectivity and continuity in the area. This widening project is the western part of a larger I-40 improvement project stretching eastward to Wade Avenue in Wake County.

## 2.0 Procedure

This section outlines the policy and technical procedures used to evaluate noise impacts. Per FHWA Procedures for Abatement of Highway Traffic Noise and Construction Noise found at Title 23 Code of Federal Regulations Part 772 §772.5 (23 CFR 772.5(2)) and NCDOT Traffic Noise Policy (NCDOT Policy), the proposed project is classified as Type I. A noise analysis is required for all Type I highway projects - including federal projects that are administered by local public agencies - and for any highway project or multimodal project that requires FHWA approval regardless of funding sources. The NCDOT Policy effective October 6th, 2016 describes the NCDOT process used to determine traffic noise impacts and abatement measures. This report documents the methodologies, results, and recommendations in compliance with 23 CFR 772, NCDOT Policy, and the accompanying NCDOT Traffic Noise Manual (Manual).

According to the NCDOT Highway Traffic Noise Manual (2016), noise abatement must be feasible and reasonable to be included in a project. Feasibility is a combination of acoustical and engineering factors considered when evaluating a noise abatement measure. Abatement is acoustically feasible if it achieves a reduction of at least 5 d(B) at two or more impacted receptors. Engineering factors, such as topography, access, drainage, safety, and maintenance issues may also result in a determination that abatement is not feasible. Reasonableness assesses noise reduction, cost effectiveness and views of the benefited residents and property owners about noise abatement. Section 9 provides details on NCDOT policy requirements for feasibility and reasonableness.

A feasibility study was conducted by the NCDOT on widening I-40 in Orange County to Wade Avenue in Wake County. The date of this report is June 2016 and includes this project. This TNR presents a detailed analysis of noise receptors and recommended noise mitigation measures near the proposed I-40 widening and meet NCDOT Policy (October 6th, 2016) for feasibility and reasonableness criteria based on available information. This TNR is based on the preliminary design of FS-1205A (STIP No. I-3306A for the Orange County portion of the project). The NCDOT encourages local governments and private landowners to use noise-compatible planning and design as part of all development adjacent to highways.

Highway and construction noise impacts can be a consequence of transportation projects. These impacts cause concern for those who use lands near traffic noise sources. To quantify the potential for impacts resulting from the proposed project the loudest hourly-equivalent traffic noise levels were assessed for 486 receptors, representing 413 residential land uses, 47 receptors at athletic fields associated with Cedar Ridge High School, one medical center, 12 receptors along a nature trail associated with Blackwood Farm Park, three churches, two picnic areas, three playgrounds, one cemetery seating area, one school, one community garden and two outdoor seating areas within the 36 Noise Study Areas (NSAs). Equivalent receptor (ER) weighting was used for the athletic field

and trail receptors when totaling impacts. The equivalent receptor calculation tables for each area (NSA 5 and NSA 14) can be found in ***Appendix C***. The athletic director at Cedar Ridge High School was contacted to gather information about athletic field use at the high school that was used in the ER calculations. Attempts were made to contact personnel at Blackwood Farm Park (where the trail receptors are located) but were unsuccessful. For the ER calculations, it was assumed that approximately 50 people per day for an hour increment each utilize the trail system at the park.

The analysis concluded that Design Year 2040 build condition traffic noise is predicted to impact 86 receptors representing 82 residential land uses, three athletic field receptors, one playground, one cemetery seating area, one outdoor seating area, and two trail receptors within the vicinity of the project. Using ER methodology, a total of one impact for the athletic field was calculated and one impact for the trail was calculated. Although equating to only one impact in each area based on the ER units, noise mitigation was still evaluated since multiple receptors in these locations experienced impacts. A total of 16 noise barriers were assessed using the FHWA Traffic Noise Model® 2.5 (TNM 2.5). Four barriers are preliminarily considered to meet feasibility and reasonableness criteria.

The analysis team used TNM 2.5 to predict Base Year 2013 existing, Design Year 2040 No-build, and Design Year 2040 Build-condition hourly-equivalent traffic noise levels, $L_{eq(h)}$ for noise-sensitive receptors within the project area (refer to ***Figures 1-24***).

In addition to reporting, the analysis team used the following procedures to conduct the analysis:

Field View: The analysis team conducted an initial review of the project using GIS data and aerial photography. A field view of the project area verified land uses in the project corridor and aided in developing a workplan.

Develop Workplan: After the field view, the team developed a detailed noise measurement plan. The noise measurement plan included preparing graphics and identifying procedures, site addresses and other pertinent data. The NCDOT noise group reviewed and approved the noise measurement plan prior to the team taking noise measurements.

Monitoring / fieldwork: This step involved collecting noise measurements with concurrent traffic volume, mix and speeds for the specified sites identified in the workplan. The team also recorded weather data relevant to each site. Field data logs with site sketches and photographs of noise monitoring locations were also created along with other relevant visual data (refer to ***Appendix A***).

Baseline TNM model: This step involved developing a TNM model of the existing conditions utilizing receptors, roadways, terrain lines, ground zones, and barriers to validate the baseline TNM model (refer to section 6.1). After NCDOT approval of the validation model, the analysis team proceeded with development of the remaining models. This process included processing traffic data into TNM-designated vehicle classifications and developing the design year build model by adding the project design to the baseline TNM model. Refer to ***Appendix B*** for the traffic data summary and ***Appendix F*** for general descriptions of the TNM model(s).

Impact assessment: This step involved input of the Base Year 2013 existing and Design Year 2040 No-build condition TNM traffic volumes and speeds into the validated baseline TNM model(s); calculating and documenting TNM-predicted traffic noise levels; evaluating loudest hourly-

equivalent noise levels by screening TNM-predicted traffic noise levels against ambient noise monitoring data; and assessing traffic noise impacts (refer to ***Section 6.0*** and ***Appendix C***).

Sound barrier analysis: This step involved identification of areas in the vicinity of predicted Design Year 2040 traffic noise impacts where abatement may be feasible; modeling traffic noise barriers; calculating TNM-predicted with-barrier traffic noise levels; evaluating with-barrier noise level reductions (NLRs) by screening TNM-predicted with-barrier traffic noise levels against the without-barrier noise levels; and optimizing potential sound barriers (refer to ***Section 8.0***, and ***Appendix D*** and ***E***).

## 3.0 Characteristics of Noise

Noise is unwanted sound. It is emitted from many sources including airplanes, factories, railroads, commercial businesses, and highway vehicles. Steady-state highway traffic noise is predominantly a composite of noises from engine exhaust, drive train, and tire-roadway interaction.

The magnitude of sound (and noise) is described by the logarithm of the ratio of the sound pressure to a reference sound pressure of twenty micro-Pascals (20µPa). Since the range of sound pressure ratios varies over orders of magnitude, a base-10 logarithmic scale is used to express sound levels in dimensionless units of decibels (dB). The commonly accepted limits of human hearing to detect magnitudes of sound are between the threshold of hearing at 0 decibels and the threshold of pain at 140 decibels.

Sound frequencies are represented in units of Hertz (Hz), which correspond to the number of vibrations per second of a given tone. A cumulative 'sound level' is equivalent to ten times the base-10 logarithm of the ratio of the sum of the sound pressures of all frequencies to the reference sound pressure. To simplify the mathematical process of determining sound levels, sound frequencies are grouped into ranges, or 'bands', each typically representing either one 'octave' or '1/3 octave' of the sound frequency spectrum. Since the cumulative sound level is a representation of the total sound pressure (energy), cumulative sound levels are then calculated by adding all the sound pressure levels of each band and multiplying the logarithm of the ratio of the result and the reference sound pressure level (e.g., 20 µPa) by ten.

The common accepted limits of human hearing to detect sound frequencies are between 20 Hz and 20,000 Hz, and human hearing is most sensitive to the frequencies between 1,000 Hz – 6,000 Hz. Although people are generally not as sensitive to lower-frequency sounds as they are to higher frequencies, most people lose the ability to hear high-frequency sounds as they age. To accommodate varying receptor sensitivities, frequency sound levels are commonly adjusted, or 'filtered', before being logarithmically added and reported as a single 'sound level' magnitude of that filtering scale.

The A-weighted decibel filtering scale applies numerical adjustments to sound frequencies to emphasize the frequencies at which human hearing is sensitive, and to minimize the frequencies to which human hearing is not as sensitive (refer to ***Table 2***). The A-weighted scale is used in highway traffic noise studies because it best represents human hearing. Several examples of noise levels, expressed in dB(A), are listed in ***Table 3***. A review of ***Table 3*** indicates that most individuals are exposed to high noise levels from many sources on a regular basis.

Individuals have varying sensitivity to noise. Loud noises bother some people more than other people, and some individuals become increasingly upset if an unwanted noise persists. The time patterns of noise also influence perception as to whether a noise is annoying. For example, in many

circumstances noises that occur during nighttime (sleeping) cause more annoyance than in the daytime. People often judge the annoyance of a noise relative to noise from other sources (background noise). A car horn blowing at night when background noise levels are lower causes greater annoyance than a horn blowing in the afternoon when background noise levels are higher. While some people may come to accept noise exposure, prolonged loud noise may limit use of exterior and interior spaces. Therefore, regulations exist for noise control or mitigation from many noise sources.

**Table 2: Comparison: Flat vs. A-Weighted Frequency Scaling**

| Octave-Band Center Frequency (Hz) | A-Weighted Adjustment[1] | Sample Frequency Sound Levels (Flat) | Sample Frequency Sound Levels (A-Weighted) |
|---|---|---|---|
| 31 | -39.53 | 90.00 | 50.47 |
| 63 | -26.22 | 80.00 | 53.78 |
| 125 | -16.19 | 70.00 | 53.81 |
| 250 | -8.68 | 65.00 | 56.32 |
| 500 | -3.25 | 60.00 | 56.75 |
| 1000 | 0.00 | 60.00 | 60.00 |
| 2000 | +1.20 | 60.00 | 61.20 |
| 4000 | +0.96 | 55.00 | 55.96 |
| 8000 | -1.14 | 50.00 | 48.83 |
| 16000 | -6.7 | 45.00 | 38.30 |
| **Overall Sound Levels:** | | **90.48 dB[2]** | **66.32 dB(A)[2]** |

1. Based on the ISO 226:2003 standard for normal equal-loudness contours, the A-weighted decibel network filtering scale is defined for a frequency, f, by the equation: $20 \times \log_{10}(A(f) / A(1000))$, where $A(f) = [12{,}200^2 \times f^4] / [(f^2 + 20.6^2) \times (f^2 + 12{,}200^2) \times (f^2 + 107.7^2)^{0.5} \times (f^2 + 737.9^2)^{0.5}]$.
2. Although the energy in the flat sound source would create an *actual* sound level = 90.48 dB, it would be *perceived* as a sound level of 66.32 dB(A) by human hearing due to the decreased sensitivity of human hearing to lower sound frequencies.

## 4.0 Noise Abatement Criteria

***Section 4.1*** through ***Section 4.3*** discuss the federal and state regulations for noise abatement in the state of North Carolina.

### 4.1 Title 23 Code of Federal Regulations, Part 772

Title 23 Code of Federal Regulations, Part 772 (23CFR 772) are the Federal Highway Administration (FHWA) procedures to use in the planning and design of highways. 23CFR772 provides procedures

for noise studies and noise abatement measures to help protect the public's health, welfare and livability; to supply noise abatement criteria; and to establish requirements for information to be given to local officials for use in the planning and design of highways approved pursuant to title 23 U.S.C. (23CFR772.1).

The Federal Highway Administration (FHWA) has developed Noise Abatement Criteria (NAC) to identify noise impact thresholds for various land uses. ***Table 4*** documents the NAC for the associated activity land use category shown in the adjacent column. The abatement criteria and procedures are set forth in Title 23 CFR Part 772.11. The regulations state that in determining traffic noise impacts, a highway agency shall give primary consideration to exterior areas where frequent human use occurs (23 CFR 772.11(b) and 23 CFR 772.13(b)). Implementation of the regulation is the responsibility of the states through an FHWA approved noise policy.

**Table 3: Common Indoor and Outdoor Noise Levels**

| Common Outdoor Noise Levels | Noise Level (dB(A)) | Common Indoor Noise Levels |
|---|---|---|
| | 110 | Rock Band |
| Jet Flyover at 1,000 feet | 100 | Inside Subway Train (NY) |
| Gas Lawn Mower at 3 feet | | |
| Diesel Truck at 50 feet | 90 | Food Blender at 3 feet |
| Noisy Urban Daytime | 80 | Garbage Disposal at 3 feet |
| Gas Lawn Mower at 100 feet | 70 | Vacuum Cleaner at 10 feet |
| Commercial Area | | Normal Speech at 3 feet |
| | 60 | |
| | | Large Business Office |
| Quiet Urban Daytime | 50 | Dishwasher Next Room |
| Quiet Urban Nighttime | 40 | Small theater, Large Conference Room (Background) |
| Quiet Suburban Nighttime | | Library |
| | 30 | |
| Quiet Rural Nighttime | | Bedroom at Night, Concert Hall (Background) |
| | 20 | |
| | | Broadcast and Recording Studio |
| | 10 | |
| | 0 | Threshold of Hearing |

Adapted from Guide on Evaluation and Attenuation of Traffic Noise , American Association of State Highway and Transportation Officials (AASHTO). 1974 (revised 1993).

## 4.2 North Carolina Department of Transportation Traffic Noise Policy

The North Carolina Department of Transportation Traffic Noise Policy effective October 6, 2016 establishes official state policy on highway noise. This policy describes the NCDOT process used to determine traffic noise impacts and abatement measures and the equitable and cost-effective expenditure of public funds for traffic noise abatement. The policy describes the NCDOT approach to implementation and is included as ***Appendix G*** of this report.

## 4.3 Noise Abatement Criteria

The NAC are given in terms of an hourly, A-weighted, equivalent noise level (***Table 4)***. The A-weighted noise level frequency is used for human use areas because it best represents human hearing. Highway traffic noise is categorized as a linear noise source, where varying noise levels occur at a fixed point during a single vehicle pass by. It is acceptable to characterize these fluctuating noise levels with a single number known as the equivalent noise level $L_{eq(h)}$, which is the value of a steady noise level that would represent the same acoustic energy as the actual time-varying sound evaluated over one hour.

Traffic noise impacts are classified into two categories. The first category consists of sound levels that approach or exceed the FHWA Noise Abatement Criteria (NAC) as shown in ***Table 4.*** The NCDOT noise policy defines approach as a level within 1 dB of the NAC for a given land use category. The second category represents a substantial increase over existing noise levels as defined by NCDOT as a 10 dB(A) increase when comparing predicted existing conditions to the predicted design year build condition.

**Table 4: Noise Abatement Criteria**

| Hourly Equivalent A-Weighted Sound Level (decibels (dB(A)) | | | |
|---|---|---|---|
| **Activity Category** | **Activity Criteria[1] $L_{eq(h)}$[2]** | **Evaluation Location** | **Activity Description** |
| A | 57 | Exterior | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| B [3] | 67 | Exterior | Residential |
| C [3] | 67 | Exterior | Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section4(f) sites, schools, television studios, trails, and trail crossings |
| D | 52 | Interior | Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios |
| E [3] | 72 | Exterior | Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F |
| F | -- | -- | Agriculture, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing |
| G | -- | -- | Undeveloped lands that are not permitted |

[1] *The Leq(h) Activity Criteria values are for impact determination only and are not design standards for noise abatement measures.*

[2] *The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with $L_{eq(h)}$ being the hourly value of $L_{eq}$.*

[3] *Includes undeveloped lands permitted for this activity category.*

## 5.0 Ambient Noise Levels

An ambient noise environment is comprised of typical noises caused by natural and manmade events. Ambient noise monitoring includes measuring existing noise levels, obtaining classified vehicle counts for noise monitoring near highways, and documenting relevant data from study areas. Data collected during noise monitoring serves as the foundation for the creation of a validated TNM model (refer to ***Section 6.1*** and ***Table 7***). Existing ambient noise measurements are obtained to quantify the existing acoustic environment and to provide a basis for assessing potential impacts due to predicted traffic noise level increases. Ambient noise levels may not be the same as the worst hour noise levels.

The analysis team collected short-term ambient noise level data on July 16 and 17, 2018. Where applicable, noise level data was acquired in arrays at locations for which traffic noise was dominant for at least one noise meter site to evaluate attenuation with increased distances from the roadway noise source.

Noise was monitored at 68 measurement sites. Noise was monitored at two of the sites (M-22 and M-64) for 24 hours. Ambient noise monitoring data was collected at 39 of the selected ambient noise monitoring locations using Larson Davis Model 831 sound level meters, at 27 of the sites using Rion Model 377C20 meters, and the two 24-hour measurement sites using a Larsen Davis Spark Model 706. The meters met all requirements of the American National Standard Specifications for Sound Level Meters, ANSI S1.4-1983 (R1991), Type 1, and met all requirements as defined by FHWA (refer to ***Appendix A***, and ***Figures 1-20***). Noise monitoring data was collected as prescribed by the NCDOT Highway Traffic Noise Manual. Classified traffic vehicle volume and speed data was documented by evaluating synchronized video recordings of the dominant roadway traffic noise sources for each noise monitoring session. Weather data (temperature, humidity and wind speed) was collected using a hand-held Kestrel 2500 pocket weather meter.

## 6.0 Procedure for Predicting Future Noise Levels

***Section 6.1*** and ***Section 6.2*** discuss the process used in predicting future 2040 build levels.

### 6.1 Validation and Existing (2013) Conditions

Use of TNM 2.5 is required by NCDOT noise policy to predict Existing (2013), No-Build (2040), and Design Year (2040) Build noise levels associated with traffic-induced noise. The TNM 2.5 is a reliable tool to model noise generated by highway traffic. The information applied to the modeling effort included the highway design of the existing and proposed condition, traffic data, and topography. The analysis team used base mapping, aerial photography, parcel data, and contour data to identify noise-sensitive land uses within the corridor. Terrain features that could potentially affect modeled results were also identified and implemented into the model. The TNM 2.5 includes five vehicle classifications as shown on ***Table 5***.

**Table 5: Traffic Noise Model (TNM) Vehicle Classification Types**

| TNM Vehicle Type | Description |
|---|---|
| Autos | All vehicles with two axles and four tires, including passenger cars and light trucks, weighing 9,900 pounds or less |
| Medium Trucks | All vehicles having two axles and six tires, weighing between 9,900 and 26,400 pounds |
| Heavy Trucks | All vehicles having three or more axles, weighing more than 26,400 pounds |
| Buses | All vehicles designed to carry more than nine passengers |
| Motorcycles | All vehicles with two or three tires and an open-air driver / passenger compartment |

**Sources:** *FHWA Measurement of Highway-Related Noise, § 5.1.3 Vehicle Types.*
*FHWA Traffic Monitoring Guide, § 4.1 Classification Schemes*

Many of the land uses in the project area were residential and categorized as a Category B land use. However, this project area also consisted of 66 category C, five category D, and one category E land uses. See ***Table 6*** for documentation of the land use found in each NSA.

**Table 6: NSA Description**

| *NSA* | *NAC* | *Description* |
|---|---|---|
| 1 | B | This NSA is comprised of 1 single family residence |
| 2 | B | This NSA is comprised of 2 single family residences |
| 3 | B | This NSA is comprised of 2 single family residences |
| 4 | B | This NSA is comprised of 2 single family residences |
| 5 | C/D | This NSA is comprised of 1 high school and 4 athletic fields (containing 47 receptors) |
| 6 | B | This NSA is comprised of 66 single family residences |
| 7 | B | This NSA is comprised of 12 single family residences |
| 8 | B | This NSA is comprised of 39 single family residences |
| 9 | B | This NSA is comprised of 13 single family residences |
| 10 | B | This NSA is comprised of 5 single family residences |
| 11 | B | This NSA is comprised of 1 single family residence |
| 12 | B | This NSA is comprised of 5 single family residences |
| 13 | B/D | This NSA is comprised of 19 single family residences and 1 medical center |
| 14 | B/C | This NSA is comprised of 3 single family residences and 12 trail points |
| 15 | B | This NSA is comprised of 2 single family residences |
| 16 | B | This NSA is comprised of 3 single family residences |
| 17 | B/C/D | This NSA is comprised of 25 single family residences, 1 church, 1 playground and 1 picnic area |
| 18 | B | This NSA is comprised of 6 single family residences |
| 19 | C | This NSA is comprised of 1 playground |
| 20 | B | This NSA is comprised of 5 single family residences |
| 21 | B | This NSA is comprised of 1 single family residence |
| 22a | B | This NSA is comprised of 3 single family residences |
| 22b | B | This NSA is comprised of 29 single family residences |
| 23 | B | This NSA is comprised of 4 single family residences |
| 24 | B/C/D | This NSA is comprised of 38 single family residences, 1 church, 1 cemetery seating, and 1 outdoor seating area |
| 25 | B/C | This NSA is comprised of 33 apartments, 1 picnic area and 1 playground |
| 26 | B | This NSA is comprised of 6 single family residences |
| 27 | B | This NSA is comprised of 6 single family residences |
| 28 | B | This NSA is comprised of 8 single family residences |
| 29 | B/C | This NSA is comprised of 14 single family residences and 1 Community Garden |
| 30 | B | This NSA is comprised of 3 single family residences |
| 31 | D | This NSA is comprised of 1 church |
| 32 | B | This NSA is comprised of 51 single family residences |
| 33 | B | This NSA is comprised of 2 single family residences |
| 34 | B | This NSA is comprised of 3 single family residences |
| 35 | B | This NSA is comprised of 1 single family residence |
| 36 | E | This NSA is comprised of 1 outdoor seating area |

Validation is accomplished by comparing the monitored noise levels with noise levels generated in TNM 2.5 using the classified traffic volumes and speeds that occurred during each measurement period. This comparison ensures that reported changes in noise levels are due to changes in traffic conditions and not to discrepancies between monitoring and modeling techniques. A difference of three dB(A) or less between the monitored and modeled level is acceptable in accordance with the NCDOT noise manual. A model was constructed in TNM for validation. ***Table 7*** summarizes model validation results. Since all 68 measurement sites show less than a +/- 3.0 dB(A) difference between the monitored and modeled noise levels, the model is considered a valid representation of existing conditions throughout the project area.

The validated noise model was then updated with traffic for the Existing (2013), No-Build (2040), and Design Year (2040) Build. These models were used for the remainder of the noise analysis. Modeling sites were added to the validated model to predict Existing (2013) worst hourly traffic noise levels throughout the project corridor. Additional traffic noise modeling was performed for existing and Design Year 2040 conditions using the traffic data provided by NCDOT.

**Table 7: Validation**

| *I-40 Widening VALIDATION MODEL SUMMARY* | | | | | |
|---|---|---|---|---|---|
| **SITE** | **ADDRESS** | **MONITORED AVG $Le_q$** | **MODELED $Le_q$** | **DIFFERENCE +/- 3 dB(A)** | **VALIDATED Y/N** |
| *M1* | *1229 DIMMOCKS MILL RD* | *64.4* | *66.6* | *2.2* | *Y* |
| *M2* | *1225 DIMMOCKS MILL RD* | *60.3* | *59.6* | *-0.7* | *Y* |
| *M3* | *1225 DIMMOCKS MILL RD* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M4* | *1402 DIMMOCKS MILL RD* | *57.2* | *57.7* | *0.5* | *Y* |
| *M5* | *1414 DIMMOCKS MILL RD* | *55.1* | *56.7* | *1.6* | *Y* |
| *M6* | *1125 NEW GRADY BROWN SCHOOL RD* | *58.5* | *57.0* | *-1.5* | *Y* |
| *M7* | *#9 PRICE ST* | *62.1* | *63.5* | *1.4* | *Y* |
| *M8* | *#10 PRICE ST* | *56.2* | *57.8* | *1.6* | *Y* |
| *M9* | *#11 PRICE ST* | *56.1* | *57.3* | *1.2* | *Y* |
| *M10* | *2405 TIMBER OAK DR* | *57.2* | *57.2* | *0.0* | *Y* |
| *M11* | *2411 TIMBER OAK DR* | *52.3* | *52.6* | *0.3* | *Y* |
| *M12* | *2411 TIMBER OAK DR* | *51.1* | *53.6* | *2.5* | *Y* |
| *M13* | *2335 BLAIR DR* | *66.6* | *69.4* | *2.8* | *Y* |
| *M14* | *2334 BLAIR DR* | *58.2* | *57.1* | *-1.1* | *Y* |
| *M15* | *2331 BLAIR DR* | *58.5* | *56.1* | *-2.4* | *Y* |
| *M16* | *2338 BLAIR DR* | *62.9* | *62.6* | *-0.3* | *Y* |
| *M17* | *3209 OLD CH HILLSBOROUGH RD* | *62.2* | *63.4* | *1.2* | *Y* |
| *M18* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M19* | *3220 OLD NC 86* | *METER MALFUNCTION* | *N/A* | *N/A* | *N/A* |
| *M20* | *3220 OLD NC 86* | *61.2* | *61.8* | *0.6* | *y* |
| *M21* | *3300 OLD NC 86* | *57.5* | *59.3* | *1.8* | *y* |
| *M22* | *430 WATERSTONE DR* | *24 HOUR METER* | *N/A* | *N/A* | *N/A* |
| *M23* | *648 ALICE LOOP* | *62.4* | *60.5* | *-1.9* | *Y* |
| *M24* | *649 ALICE LOOP* | *58.1* | *58.6* | *0.5* | *Y* |
| *M25* | *1605 CHEYENNE DR* | *61.2* | *59.5* | *-1.7* | *Y* |
| *M26* | *1606 CHEYENNE DR* | *56.5* | *54.5* | *-2.0* | *Y* |
| *M27* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M28* | *4334 VALLIE HIGH LN* | *52.3* | *54.9* | *2.6* | *Y* |

| | | | | | |
|---|---|---|---|---|---|
| *M29* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M30* | *1201 NEW HOPE CHURCH RD* | *56.8* | *57.8* | *1.0* | *Y* |
| *M31* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M32* | *1315 NEW HOPE TRACE* | *57.7* | *57.1* | *-0.6* | *Y* |
| *M33* | *6114 MEADOWSWEET LN* | *59.9* | *57.0* | *-2.9* | *Y* |
| *M34* | *6114 MEADOWSWEET LN* | *53.8* | *51.0* | *-2.8* | *Y* |
| *M35* | *6027 MEADOW GREER RD* | *63.5* | *62.1* | *-1.4* | *Y* |
| *M36* | *6025 MEADOW GREER RD* | *57.0* | *58.3* | *1.3* | *Y* |
| *M37* | *6019 MEADOW GREER RD* | *54.3* | *56.7* | *2.4* | *Y* |
| *M38* | *6211 JERICHO RD* | *62.9* | *61.3* | *-1.6* | *Y* |
| *M39* | *5705 STONEYWOOD RD* | *58.7* | *59.5* | *0.8* | *Y* |
| *M40* | *5704 HIDEAWAY DR* | *55.8* | *58.3* | *2.5* | *Y* |
| *M41* | *5911 HIDEWAY DR* | *60.9* | *61.4* | *0.5* | *Y* |
| *M42* | *6023 NC 86* | *56.2* | *54.4* | *-1.8* | *Y* |
| *M43* | *6021 NC 86, Trailer 18* | *60.6* | *59.1* | *-1.5* | *Y* |
| *M44* | *2107 CLYDE RD* | *65.2* | *62.9* | *-2.3* | *Y* |
| *M45* | *2107 CLYDE RD* | *59.6* | *58.0* | *-1.6* | *Y* |
| *M46* | *2113 CLYDE RD* | *58.8* | *56.2* | *-2.6* | *Y* |
| *M47* | *104 GROOMSBRIDGE CT* | *56.9* | *54.0* | *-2.9* | *Y* |
| *M48* | *104 GROOMSBRIDGE CT* | *54.2* | *52.8* | *-1.4* | *Y* |
| *M49* | *7707 NC 86* | *59.9* | *62.3* | *2.4* | *Y* |
| *M50A* | *7106 DUMFRIES LN* | *60.8* | *62.7* | *1.9* | *Y* |
| *M50B* | *7106 DUMFRIES LN* | *56.7* | *57.8* | *1.1* | *Y* |
| *M51* | *7120 DUMFIRES LN* | *55.5* | *53.3* | *-2.2* | *Y* |
| *M52* | *200 PERKINS DRIVE* | *64.5* | *63.0* | *-1.5* | *Y* |
| *M53* | *155 SCHULTZ ST.* | *56.5* | *54.3* | *-2.2* | *Y* |
| *M54* | *149 SCHULTZ ST.* | *53.7* | *52.3* | *-1.4* | *Y* |
| *M55* | *133 SCHULTZ ST.* | *51.4* | *51.6* | *0.2* | *Y* |
| *M56* | *870 WEAVER DAIRY RD* | *54.7* | *56.2* | *1.5* | *Y* |
| *M57* | *750 WEAVER DAIRY RD* | *64.6* | *62.9* | *-1.7* | *Y* |
| *M58* | *111 FOXRIDGE RD* | *64.2* | *65.0* | *0.8* | *Y* |
| *M59* | *112 FOXRIDGE RD* | *60.2* | *58.7* | *-1.5* | *Y* |
| *M60* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M61* | *1023 NORTHRIDGE LN* | *61.4* | *61.8* | *0.4* | *Y* |
| *M62* | *1023 NORTHRIDGE LN* | *60.5* | *61.9* | *1.4* | *Y* |
| *M63* | *1024 NORTHRIDGE LN* | *60.8* | *62.2* | *1.4* | *Y* |
| *M64* | *420 WATERSTONE DR* | *24 HOUR METER* | *N/A* | *N/A* | *N/A* |
| *M65* | *4002 SWEETEN CREEK RD* | *61.1* | *59.0* | *-2.1* | *y* |
| *M66* | *101 LANDING DR* | *52.9* | *51.1* | *-1.8* | *y* |
| *M67* | *103 LANDING DR* | *49.6* | *46.8* | *-2.8* | *y* |
| *M68A* | *7300 MAYSE DR* | *58.5* | *59.9* | *1.4* | *y* |
| *M68B* | *7304 DELBERTS POND RD* | *52.3* | *52.8* | *0.5* | *y* |
| *M70* | *4629 DRY CREEK RD* | *58.6* | *60.9* | *2.3* | *y* |
| *M71* | *390 ERWIN RD* | *62.8* | *65.0* | *2.2* | *y* |
| *M72* | *3600 MT. MORIAH RD* | *63.2* | *63.4* | *0.2* | *Y* |
| *M73* | *3600 MT. MORIAH RD* | *58.2* | *58.9* | *0.7* | *Y* |
| *M74* | *3600 MT. MORIAH RD* | *57.4* | *56.2* | *-1.2* | *Y* |

## 6.2 Evaluation of Design Year (2040) Build Noise Levels

Following the development of the existing conditions model and the prediction of Existing (2013) loudest hourly-equivalent traffic noise levels, the assessment continued with the prediction of Design Year (2040) No-Build and Build noise levels. Design Year (2040) No-Build noise levels were predicted without the proposed project improvements in place. Design Year (2040) Build noise levels

were predicted by accounting for the proposed project improvements and applying Design Year (2040) traffic volumes and composition to the validated computer model. Build noise levels were predicted with the proposed project improvements of the Build Alternative in place and in use.

The next step in the analysis was to determine if future noise levels at sensitive receptors resulted in noise impacts. If the criteria were approached or exceeded at any receptor, noise abatement was required to be considered and evaluated to reduce future noise to acceptable levels. Noise levels associated with each modeled scenario are identified within ***Appendix C***.

Design Year (2040) Build traffic volumes, vehicle composition, and speeds were assigned to roadways. Traffic data used in the Design Year (2040) noise analyses are included in ***Appendix B***. Traffic consultants provided detailed traffic data for the Existing (2013), Design Year (2040) No-Build, and Design Year (2040) Build conditions. Traffic diagrams are in ***Appendix B***. The diagrams show the project corridor as an unlimited access highway with associated traffic flow. The Design Year (2040) proposed I-40 to widen to 3 lanes in both the eastbound and westbound directions. Traffic balancing methodology was needed at 5 junctions along I-40. These 5 locations were the I-85 junction, the Old NC 86 interchange, the New Hope Road interchange, the NC 86 interchange, and the US 15/501 interchange. In the Existing 2013 and No-Build 2040 scenario, traffic for the underpass and overpass portions of each interchange was calculated by using the total number of vehicles from each direction entering an overpass (underpass) then subtracting the amount exiting the roadway onto an on (off) ramp. The Vehicle class breakdown formulas pertaining to each section were provided for Existing (2013), No-build (2040), and Build (2040) scenarios. The Build (2040) scenario utilized a 50/50 directional split as directed by NCDOT. The split utilized the vehicle class breakdowns and traffic breaks per the provided diagram. The formulas contained within the traffic diagrams sent by NCDOT were used to calculate the vehicle composition applied to the roadway segments within TNM. Volumes used for each roadway were the lesser of LOS C volumes or forecasted 50/50 percent directional split volumes. The LOS C volumes used to analyze the design year 2040 Build scenario were from the most recent LOS C tables provided by NCDOT which provides a per lane LOS C capacity.

## 7.0 Traffic Noise Impact Assessment

Traffic noise impacts occur when the predicted traffic noise levels either approach or exceed the FHWA noise abatement criteria (with "approach" meaning within 1 dB(A) of the NAC values listed in ***Table 4***) or substantially exceed the existing noise levels. FHWA and NCDOT require consideration of noise abatement measures for all impacted receptors. Abatement measures eligible for federal funding include construction of noise barriers (walls or berms), traffic management measures, alteration of the vertical or horizontal alignment of the highway, acquisition of real property to serve as buffer zones, and noise insulation of NAC Activity Category D lands.

Predicted noise levels were predicted to approach or exceed NCDOT noise abatement criteria under the Design Year (2040) Build Conditions. The potential number and types of predicted traffic noise impacts from the Project are shown in ***Table 8*** with impacts delineated by type of impact. It should be noted that impacts pertaining to NSA 5 and NSA 14 were tallied based on their ER unit and rounded to the nearest hole number as discussed in Section 2.

**Table 8: Traffic Noise Impact Summary**

| Alternative | Approximate number of Impacted Receptors Approaching or Exceeding FHWA NAC per Activity Category[1] | | | | | | | | Substantial Noise Level Increase[2] | Impacts Due to Both Criteria[3] | Total Traffic Noise Impacts per NCDOT Policy[4] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | *Total* | | | |
| Build | 0 | 77 | 8 | 0 | 0 | 0 | 0 | 85 | 0 | 1 | **86** |

[1] *Predicted traffic noise level impact due to approaching or exceeding NAC (refer to Table 3).*

[2] *Predicted "substantial increase" traffic noise level impact (refer to NCDOT Manual).*

[3] *Predicted traffic noise level impact due to exceeding NAC and "substantial increase" in build-condition noiselevels.*

[4] *The total number of predicted impacts is not duplicated if receptors are predicted to be impacted by more than one criterion.*

[5] *Impact totals account for assumed NCDOT property takes along the alternative alignments (i.e., if a receptor is impacted but will be a relocation due to new alignment, it is not counted in the impacttotal.*

***NSA 1***

NSA 1 is located directly west of Dimmocks Mill Rd on the west side of I-40. NSA 1 contains one site (1.01) that represents a single-family residence. The location of the receptor is shown in ***Figure 1.*** Modeled Design year (2040) Build noise levels were shown to impact the one site within NSA 1. The noise level associated with the receptor can be found in ***Appendix C***. Since there was only one site in NSA 1, consideration of abatement was not warranted.

***NSA 2***

NSA 2 is located directly west of Dimmocks Mill Rd on the east side of I-40. NSA 2 contains two sites (2.01 and 2.02) that represent single family residences. The locations of the receptors are shown in ***Figure 1***. Modeled Design year (2040) Build noise levels were shown to impact no sites within NSA 2. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 3***

NSA 3 is located directly east of Dimmocks Mill Rd on the west side of I-40. NSA 3 contains two sites (3.01 and 3.02) that represent single family residences. The locations of the receptors are shown in ***Figure 1***. Modeled Design year (2040) Build noise levels were shown to impact both sites within NSA 3. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 4***

NSA 4 is located directly east of Dimmocks Mill Rd on the east side of I-40. NSA 4 contains two sites (4.01 and 4.02) that represent single family residences. The locations of the receptors are shown in ***Figure 1***. Modeled Design year (2040) Build noise levels were shown to impact one site within NSA 4. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC at only one location, consideration of abatement was not warranted.

***NSA 5***

NSA 5 is located directly west of Orange Grove Rd on the west side of I-40. NSA 5 contains 48 sites (5.01 to 5.48). Forty-seven of the sites represent athletic fields and one site represents a high school. ER methodology was used to calculate impacts for the athletic field sites. The locations of the receptors are shown in ***Figures 1*** and ***2***. Modeled Design year (2040) Build noise levels were shown to impact three sites within NSA 5. Although the ER calculation only equates the three impacts combined as one unit, since multiple receptors experienced impacts noise abatement was still evaluated. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 6***

NSA 6 is located directly west of Orange Grove Rd and runs westward until ending at I-85 north. NSA 6 contains 66 sites (6.01 to 6.66) that all represent single family residences. The locations of the receptors are shown in ***Figures 2*** and ***3***. Modeled Design year (2040) Build noise levels were shown to impact 17 sites within NSA 6. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 7***

NSA 7 is located directly east of Orange Grove Rd on the west side of I-40. NSA 7 contains 12 sites (7.01 to 7.12) that all represent single family residences. The locations of the receptors are shown in ***Figures 2*** and ***4***. Modeled Design year (2040) Build noise levels were shown to impact one site within NSA 7. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC at only one site, consideration of abatement was not warranted.

***NSA 8***

NSA 8 is located directly east of Orange Grove Rd on the east side of I-40. NSA 8 contains 39 sites (8.01 to 8.39) that all represent single family residences. The locations of the receptors are shown in ***Figures 2***, ***3***, and ***4***. Modeled Design year (2040) Build noise levels were shown to impact no sites within NSA 8. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 9***

NSA 9 is located directly east of Oakdale Dr on the east side of I-40. NSA 9 contains 13 sites (9.01 to 9.13) that all represent single family residences. The locations of the receptors are shown in ***Figures 3*** and ***4***. Modeled Design year (2040) Build noise levels were shown to impact two sites within NSA 9. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 10***

NSA 10 is located along the west side of Old NC 86 and west of I-40. NSA 10 contains 5 sites (10.01 to 10.05) that all represent single family residences. The locations of the receptors are shown in ***Figures 6*** and ***7***. Modeled Design year (2040) Build noise levels were shown to impact two sites within NSA 10. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 11***

NSA 11 is located along the west side of Old NC 86 and east of I-40. NSA 11 contains one site (11.01) that represents a single-family residence. The location of the receptor is shown in ***Figure 7***. Modeled Design year (2040) Build noise levels were shown to not impact the site in NSA 11. The noise levels associated with the receptor can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 12***

NSA 12 is located along the east side of Old NC 86 and west of I-40. NSA 12 contains five sites (12.01 to 12.05) that all represent single family residences. The locations of the receptors are shown in ***Figures 5***, ***6***, ***7*** and ***8***. Modeled Design year (2040) Build noise levels were shown to impact three sites in NSA 12. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 13***

NSA 13 is located along the east side of Old NC 86 and east of I-40. NSA 13 contains 20 sites (13.01 to 13.20). These sites represent one medical center and 19 single family residences. The locations of the receptors are shown in ***Figures 6*** and ***8***. Modeled Design year (2040) Build noise levels were shown to impact nine sites in NSA 13. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 14***

NSA 14 is located between Old NC 86 and New Hope Church Rd on the east side of I-40. NSA 14 contains 15 sites (14.01 to 14.15). These sites represent 12 receptors along the trail associated with Blackwood Farm Park and three single family residences. ER methodology was used to calculate impacts for the trail receptors. Although the ER calculation only equates the two impacts combined as one unit, since multiple receptors experienced impacts noise abatement was still evaluated. The locations of the receptors are shown in ***Figures 8*** and ***9***. Modeled Design year (2040) Build noise levels were shown to impact two sites in NSA 14. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 15***

NSA 15 is located directly north of New Hope Church Rd on the west side of I-40. NSA 15 contains two sites (15.01 and 15.02) that both represent single family residences. The location of the receptors is shown in ***Figure 10***. Modeled Design year (2040) Build noise levels were shown not to impact either site in NSA 15. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 16***

NSA 16 is located directly south of New Hope Church Rd on the west side of I-40. NSA 16 contains three sites (16.01 to 16.03) that all represent single family residences. The locations of the receptors are shown in ***Figures 10*** and ***11***. Modeled Design year (2040) Build noise levels were shown to impact one site in NSA 16. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC at only one site, consideration of abatement was not warranted.

***NSA 17***

NSA 17 is located directly south of New Hope Church Rd on the east side of I-40. NSA 17 contains 28 sites (17.01 to 17.28). The sites represent 25 single family residences, one church, one playground, and one picnic area. The locations of the receptors are shown in ***Figures 10***, ***11***, ***12***, and ***13***. Modeled Design year (2040) Build noise levels were shown to impact three sites in NSA 17. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted. The noise wall evaluated for noise abatement was determined to be feasible but not reasonable and will be discussed in ***Section 9.3***.

***NSA 18***

NSA 18 is located north of Millhouse Rd on the east side of I-40. NSA 18 contains six sites (18.01 to 18.06) that all represent single family residences. The locations of the receptors are shown in ***Figures 12*** and ***13***. Modeled Design year (2040) Build noise levels were shown to impact no sites in NSA 18. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 19***

NSA 19 is located north of Millhouse Rd on the west side of I-40. NSA 19 contains one site (19.01) that represents a school. The location of the receptor is shown in ***Figures 13***. Modeled Design year (2040) Build noise levels were shown to not impact the site in NSA 19. The noise levels associated with the receptor can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 20***

NSA 20 is located south of Millhouse Rd on the east side of I-40. NSA 20 contains five sites (20.01 to 20.05) that all represent single family residences. The locations of the receptors are shown in ***Figures 13*** and ***14***. Modeled Design year (2040) Build noise levels were shown to impact four sites in NSA 20. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 21***

NSA 21 is located north of Eubanks Rd on the west side of I-40. NSA 21 contains one site (21.01) that represents a single-family residence. The location of the receptor is shown in ***Figures 15*** and ***17***. Modeled Design year (2040) Build noise levels were shown to not impact the site in NSA 21. The noise levels associated with the receptor can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 22a***

NSA 22a is located between Millhouse Rd and NC 86 on the east side of I-40. NSA 22a contains three sites (22a.01 to 22a.03) that all represent single-family residences. The locations of the receptors are shown in ***Figure 14***. Modeled Design year (2040) Build noise levels were shown to impact two sites in NSA 22a. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 22b***

NSA 22b is located north of NC 86 on the east side of I-40. NSA 22b contains 29 sites (22b.01 to 22b.29) that all represent single family residences. The locations of the receptors are shown in ***Figure 16***. Modeled Design year (2040) Build noise levels were shown to impact three sites in NSA 22b. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 23***

NSA 23 is located south of NC 86 on the east side of I-40. NSA 23 contains four sites (23.01 to 23.04) that all represent single family residences. The locations of the receptors are shown in ***Figures 16*** and ***18***. Modeled Design year (2040) Build noise levels were shown to impact no sites in NSA 23. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 24***

NSA 24 is located north of NC 86 on the west side of I-40. NSA 24 contains 41 sites (24.01 to 24.41). The sites represent 38 single family residences, a church, a cemetery, and an outdoor seating area at the church. Modeled Design year (2040) Build noise levels were shown to impact eight sites in NSA 24. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 25***

NSA 25 is located south of NC 86 on the west side of I-40. NSA 25 contains 35 sites (25.01-1 to 25.26-2). The sites represent 33 multi-family residences, one outdoor seating area, and one playground. The locations of the receptors are shown in ***Figures 17*** and ***18***. Modeled Design year (2040) Build noise levels were shown to impact one site in NSA 25. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC at only one location, consideration of abatement was not warranted.

***NSA 26***

NSA 26 is located south of Whitfield Rd on the east side of I-40. NSA 26 contains six sites (26.01 to 26.06) that all represent single family residences. The locations of the receptors are shown in ***Figures 18*** and ***19***. Modeled Design year (2040) Build noise levels were shown to impact two sites in NSA 26. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 27***

NSA 27 is located between NC86 and Sunrise Rd on the west side of I-40. NSA 27 contains six sites (27.01 to 27.06) that all represent single family residences. The locations of the receptors are shown in ***Figure 19***. Modeled Design year (2040) Build noise levels were shown to impact no sites in NSA 27. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 28***

NSA 28 is located between NC86 and Sunrise Rd on the east side of I-40. NSA 28 contains seven sites (28.01 to 28.07) that all represent single family residences. The locations of the receptors are shown in ***Figures 19*** and ***20***. Modeled Design year (2040) Build noise levels were shown to impact one site in NSA 28. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC at only one location, consideration of abatement was not warranted.

***NSA 29***

NSA 29 is located north of Sunrise Rd on the west side of I-40. NSA 29 contains 15 sites (29.01 to 29.15). These sites represent 14 single family residences and one community garden. The locations of the receptors are shown in ***Figure 19***. Modeled Design year (2040) Build noise levels were shown to impact no sites in NSA 29. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 30***

NSA 30 is located north of Sunrise Rd on the east side of I-40. NSA 30 contains three sites (30.01 to 30.03) that all represent single family residences. The locations of the receptors are shown in ***Figure 20***. Modeled Design year (2040) Build noise levels were shown to impact one site in NSA 30. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC at only one location, consideration of abatement was not warranted.

***NSA 31***

NSA 31 is located south of Sunrise Rd on the east side of I-40. NSA 31 contains one site (31.01) that represents a church. The location of the receptor is shown in ***Figure 20***. Modeled Design year (2040) Build noise levels were shown to not impact the site in NSA 31. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 32***

NSA 32 is located between Sunrise Rd and Erwin Rd on the west side of I-40. NSA 32 contains 51 sites (32.01 to 32.51) that all represent single family residences. The locations of the receptors are shown in ***Figures 20***, ***21***, and ***22***. Modeled Design year (2040) Build noise levels were shown to impact 15 sites in NSA 32. The noise levels associated with the receptors can be found in ***Appendix C***. Since noise levels exceeded the NAC, consideration of abatement was warranted.

***NSA 33***

NSA 33 is located between Sunrise Rd and Erwin Rd on the east side of I-40. NSA 33 contains two sites (33.01 to 33.03) that represent single family residences. The locations of the receptors are shown in ***Figures 21*** and ***22***. Modeled Design year (2040) Build noise levels were shown to impact no sites in NSA 33. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 34***

NSA 34 is located north of Erwin Rd on the east side of I-40. NSA 34 contains three sites (34.01 to 34.03) that represent single family residences. The locations of the receptors are shown in ***Figure***

***22***. Modeled Design year (2040) Build noise levels were shown to impact one site in NSA 34. Since noise levels exceeded the NAC at only one location, consideration of abatement was not warranted.

***NSA 35***

NSA 35 is located south of Erwin Rd on the west side of I-40. NSA 35 contains one site (35.01) that represents a single-family residence. The location of the receptor is shown in ***Figures 22*** and ***23***. Modeled Design year (2040) Build noise levels were shown to not impact the site in NSA 35. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

***NSA 36***

NSA 36 is located north of US 15/501 on the east side of I-40. NSA 36 contains one site (36.01) that represents an outdoor seating area. The location of the receptor is shown in ***Figure 24***. Modeled Design year (2040) Build noise levels were shown to not impact the site in NSA 36. Since noise levels did not exceed the NAC, consideration of abatement was not warranted.

## 8.0 Potential Traffic Noise Abatement Measures

Per NCDOT Policy, the following traffic noise abatement measures are to be considered when impacts are predicted: highway alignment selection, traffic systems management, buffer zones, noise barriers (earth berms and noise walls), and noise insulation of Activity Category D land use facilities.

### 8.1 Highway Alignment Section

Highway alignment selection for traffic noise abatement measures involves modifying the horizontal and vertical geometry of the proposed facility to minimize the impact of traffic noise on noise-sensitive receptors. The selection of alternative alignments for noise abatement purposes must consider the balance between noise impacts and other engineering and environmental parameters. For noise abatement, horizontal alignment selection is primarily a matter of locating the roadway at a sufficient distance from noise sensitive receptors. Appreciable reductions in traffic noise transmissions to sensitive receptors can be made by adjusting the vertical highway alignment and/or section geometry. For example, lowering a roadway below existing grade creates a cut section that could act like an earth berm depending upon the relative location(s) of noise-sensitive receptor(s).

### 8.2 Traffic Systems Management Measures

Traffic management measures such as prohibition of truck traffic, lowering speed limits, limiting of traffic volumes, and/or limiting time of operation were considered as possible traffic noise impact abatement measures. The purpose of the I-40 widening project is to improve connectivity and continuity in the area. Prohibition of truck traffic, reduction of the speed limit below typical controlled-access highway speed limits, or screening total traffic volumes would diminish the functional capacity of the highway facility and are not considered practicable.

### 8.3 Buffer Zones

Buffer zones are typically not practical and/or cost effective for noise mitigation due to the substantial amount of right-of-way required and would not be a feasible noise mitigation measure for this project. Furthermore, if the acquisition of a suitable buffer zone had been feasible, the costs to acquire buffer zones for impacted receptors would likely exceed maximum allowable cost. The NCDOT base dollar value for a buffer zone is $22,500 per benefited receptor plus the incremental increase of $7,500 per

dB(A) average increase between 5-10 dB(A) and $15,000 per dB(A) average increase above 10 dB(A) in the modeled exterior noise levels of the impacted receptors of the area. For this reason, this abatement measure is unreasonable.

## 8.4 Noise Barriers

Passive noise abatement measures are effective because they may absorb sound energy, extend the source-to-receptor sound transmission path, or both. Sound absorption is a function of abatement medium (e.g., earth berms absorb more sound energy than noise walls of the same height because earth berms are more massive). The source-to-receptor path is extended by placement of an obstacle, such as a wall, that sufficiently blocks the transmission of sound waves that travel from the source to the receptor.

Highway noise barriers are primarily constructed as earth berms or solid-mass walls adjacent to controlled-access freeways that are near noise-sensitive land use(s). To be effective, a noise barrier must be long enough and tall enough to shield the benefitted receptors. For this project, Gannett Fleming did not find earthen berms to be a viable abatement measure at any location because the proposed barrier locations are too narrow for efficient earthen berms. Generally, the noise wall length must be eight times the distance from the barrier to the receptor. For example, if receptors were 200 feet from the roadway, an effective barrier would be approximately 1,600 feet long – with the receptor in the horizontal center. On roadway facilities with direct access for driveways, noise barriers are typically not feasible because the openings render the barrier ineffective in impeding the transmission of traffic noise. Due to the requisite lengths for effectiveness, noise barriers are typically not economical for isolated or most low-density areas.

However, noise barriers may be economical for the benefit of as few as two predicted traffic noise impacts if the barrier can benefit enough total receptors – impacted and non-impacted combined – to meet applicable reasonableness criteria.

## 8.5 Noise Insulation

Insulating buildings can greatly reduce highway traffic noise, especially when windows are sealed, and cracks and other openings filled. Noise-absorbing material can be placed in the walls of new buildings during construction but is rarely retrofitted into existing buildings. While federal- aid highway project dollars can be used for noise insulation of public-use or non-profit institutional structures, the typical beneficiaries of this type of abatement are school facilities where no other type of abatement is possible.

There were five receptors in the study that represented the interior areas of adjacent structures (Activity Category D). None of the interior receptors were predicted to have design year 2040 noise impacts. The NCDOT Noise Manual includes building noise reduction factors to apply to the predicted noise level to estimate interior noise levels in these scenarios. The interior noise level is predicted by subtracting the applicable building noise reduction factor from the noise level predicted in TNM. ***Table 9*** shows the building noise reduction factors used for the five interior noise locations: Cedar Ridge High School, UNC Hospitals Hillsborough Campus, Sunrise Church, Chapel Hill Korean Baptist Mission, and The Point Church. A reduction of 25dB was used as the building types were all determined to be of masonry construction with single glazed windows.

**Table 9: Building Noise Reduction Factors**

| Building Type | Window Condition | Noise Reduction Due to Exterior of the Structure |
|---|---|---|
| All | Open | 10 dB |
| Light Frame | Ordinary Sash (closed) | 20 dB |
| | Storm Windows | 25 dB |
| Masonry | Single Glazed | 25 dB |
| | Double Glazed | 35 dB |
| *The windows shall be considered open unless there is firm knowledge that the windows are in fact kept closed almost every day of the year. | | |

**Sources**: *NCDOT Traffic Noise Manual, 2016, p. 56.*

## 9.0 Feasibility and Reasonableness Determination

NCDOT requires consideration of noise abatement measures to mitigate predicted build-condition traffic noise impacts. All feasibility and reasonableness criteria must be met for noise abatement to be incorporated into project plans and specifications to be eligible for federal funding. Failure to achieve any single element of feasibility or reasonableness will deem the noise abatement measure as not feasible or reasonable. Noise abatement that is determined to be feasible and reasonable must be included in the project plans and specifications.

### 9.1 Feasibility

The assessment of feasibility is a consideration of the engineering factors involved in the evaluation of a noise abatement measure. Per NCDOT's noise policy, a noise reduction of 5 dB(A) must be achieved for at least two impacted receptors. Engineering feasibility of the noise abatement measure(s) considers the adverse impacts created by or upon property access, drainage, topography, utilities, safety, and maintenance requirements. The effects of secondary traffic noise (e.g., non-project traffic noise) and non-traffic noise sources on attainable Noise Level Reduction shall be considered when developing effective noise abatement measures.

### 9.2 Reasonableness

Reasonableness is the combination of social, economic, and environmental factors considered in the evaluation ofa noise abatement measure. Reasonableness considerations apply to receptors predicted to benefit from a noise abatement measure. Any receptor that receives a noise level reduction of 5 dB or more from noise abatement shall be considered a benefited receptor.

a) Viewpoints of the property owners and residents of all benefited receptors shall be solicited. One owner ballot and one resident ballot shall be solicited for each benefited receptor. Points per ballot shall be distributed in the following weighted manner:

- 5 points/ballot for adjacent property owners who reside at property
- 4 points/ballot for adjacent property owners who rent property
- 3 points/ballot for all non-adjacent property owners who reside at property
- 2 points/ballot for all non-adjacent property owners who rent property

- 1 point/ballot for all tenants of rental property

Where an adjacent receptor is a benefited receptor that either represents a property that shares the highway right of way or has no benefited receptor between it and the highway.

b) The maximum allowable base quantity of noise walls and/or earthen berms per benefited receptor shall not exceed 1,500 $ft^2$ and 4,200 $yd^3$, respectively. Additionally, an incremental increase of 500 $ft^2$ for noise walls and 1,400 $yd^3$ for earthen berms shall be added to the base quantity per the average increase in dB(A) of 5-10 dB(A) between existing and predicted exterior noise levels of all impacted receptors within each noise sensitive area. An incremental increase of 1,000 $ft^2$ for noise walls and 2,800 $yd^3$ for earthen berms shall be added to the base quantity per the average noise increase in dB(A) of greater than 10 dB(A) between existing and predicted exterior noise levels of impacted receptors. A base dollar value of $22,500 plus an incremental increase of $7,500 for a 5-10 dB(A) increase or $15,000 for an increase exceeding 10 dB(A) (as defined earlier in Section 8.3) shall be used to determine reasonableness of buffer zones and noise insulation.

c) A noise reduction design goal of at least 7 dB(A) must be evaluated for all benefited receptors. At least one benefited receptor must achieve the noise reduction design goal of 7 dB(A) to indicate the noise abatement measure effectively reduces traffic noise.

## 9.3 Noise Barrier Recommendations

The Design Year Build 2040 condition is predicted to impact 87 noise receptors, 81 of which exceed the NAC criteria, two of which exceed the substantial increase criteria and four that exceed both the NAC criteria and the substantial increase criteria. Of the 87 sites, 74 sites were considered for noise abatement measures. Sites 1.01, 4.01, 7.01, 16.03, 24.01, 24.16, 25.17, 28.03, 30.01, and 34.03 were not considered for abatement because they were isolated sites and did not meet the NCDOT requirement that abatement has to provide a 5 dB(A) reduction for at least two impacted sites to be feasible. Sites 24.18, 24.21, and 24.41 are not feasible because the improvements to Eubanks Rd and MLK Jr. Blvd propose to leave existing property access points in place which would tie into the improvements for direct property access. As a result of multiple access points abutting both roadways, noise barriers could not be designed for these impacted receptors due to driveway/property access constraints. ***Table 10*** includes the number of impacts and the number of noise walls evaluated. Of the sixteen walls evaluated (NW3, NW5, NW6, NW9, NW10, NW12, NW13, NW14, NW17, NW20 NW22a, NW22b, NW24a, NW24b, NW26 and NW32) four walls were considered feasible and reasonable (NW6, NW13, NW22b, and NW32) and are recommend for re-evaluation during the Design phase of the project. ***Table 11*** includes the analysis outcome for the 16 barriers analyzed. Barrier specifics can be found within ***Appendix D*** and ***E***.

**Table 10: Noise Barrier Recommendations**

| Impact Classification | Count | NSA's |
|---|---|---|
| Total Impacted Receptors based on NAC Criteria | 85 | 1, 3, 4, 5, 6, 7, 9, 10, 12, 13, 14, 16, 17, 20, 22a, 22b, 24, 25, 26, 28, 30, 32, 34 |
| Total Impacted Receptors based on substantial increase criteria | 1 | 6, 24 |
| Total Noise Impacts | 86 | 1, 3, 4, 5, 6, 7, 9, 10, 12, 13, 14, 16, 17, 20, 22a, 22b, 24, 25, 26, 28, 30, 32, 34 |
| Total number qualifying for abatement assessment per NCDOT policy[1] | 78 | 3, 5, 6, 9, 10, 12, 13, 14, 16, 17, 20, 22a, 22b, 24, 26, 32 |
| Sites not meeting feasibility criteria for assessment (1.01, 4.01, 7.01, 16.03, 25.17, 28.03, 30.01, and 34.03) | 8 | 1, 4, 7, 16, 24, 25, 28, 30, 34 |
| | | |
| Noise Walls Evaluated | NW3, NW5, NW6, NW9, NW10, NW12, NW13, NW14 NW17, NW20, NW22a, NW22b, NW24a,NW24b, NW26, NW32 | 3, 5, 6, 9, 10, 12, 13, 14, 17, 20, 22a, 22b, 24, 26, 32 |
| Noise Walls Feasible and Reasonable | NW6, NW13, NW22b, NW32 | 6, 13, 22b, 32 |

**Table 11: Noise Barrier Recommendation Summary**

| NSA | Barrier ID | Noise Wall Assessment |
|---|---|---|
| NSA 3 | NW 3 | Not Feasible |
| NSA 5 | NW 5 | Not Feasible |
| NSA 6 | NW 6 | Feasible and Reasonable |
| NSA 9 | NW 9 | Feasible but not Reasonable |
| NSA 10 | NW 10 | Not Feasible |
| NSA 12 | NW 12 | Not Feasible |
| NSA 13 | NW 13 | Feasible and Reasonable |
| NSA 14 | NW 14 | Not Feasible |
| NSA 17 | NW 17 | Feasible but not Reasonable |
| NSA 20 | NW 20 | Feasible but not Reasonable |
| NSA 22a | NW 22a | Feasible but not Reasonable |
| NSA 22b | NW 22b | Feasible and Reasonable |
| NSA 24 | NW 24a | Not Feasible |
| NSA 24 | NW 24b | Feasible but not Reasonable |
| NSA 26 | NW 26 | Feasible but not Reasonable |
| NSA 32 | NW 32 | Feasible and Reasonable |

## 10.0 Traffic Noise Levels for Undeveloped Lands - No Building Permits Issued

Use of predicted design year build-condition traffic noise level contours are not a definitive means to assess traffic noise level impacts; however, they can aid in future land use planning efforts in undeveloped areas. Correlating to NCDOT's traffic noise impact threshold for NAC "B", "C", and "D" land uses, it is expected that the 66 dB(A) contour changes in distance parallel to I-40 (See ***Figures 1-24*** for predictive noise contours).

Many variations in terrain, development types and density contribute to the general distance at which these noise thresholds are likely to occur. Thus, per 23 CFR 772.9(c) and NCDOT Policy, noise contour lines shall not be used for determining highway traffic noise impacts. However, the 66 dB(A) and 71 dB(A) noise level contour information should assist local authorities in exercising land use control over the remaining undeveloped lands, to avoid development of incompatible activities adjacent to the roadways within local jurisdictions.

## 10.1 Information for Local Officials

The North Carolina Department of Transportation (NCDOT) strongly advocates the planning, design, and construction of noise-compatible development and encourages its practice among planners, building officials, developers, and others. Consideration for noise-compatible development is a shared responsibility among local, state, and federal agencies. NCDOT plans its highway construction in consideration of traffic noise impacts it may cause to noise-sensitive land uses. Likewise, local governments ideally plan their noise-sensitive land uses in consideration of existing sources of traffic noise.

As part of that shared responsibility, NCDOT provides information to local officials with responsibility for planning decisions with an estimate of future noise levels on undeveloped lands that lie within project boundaries. This information may be used to help guide land use planning decisions to help avoid future traffic noise impacts.

Although regulation of land use is not within the purview of NCDOT, some widely accepted techniques for noise-sensitive land use planning near existing and proposed highway facilities include:

- Locating commercial retail, industrial, manufacturing, warehousing and other noise-compatible land-uses adjacent to highways
- Incorporating effective traffic noise mitigating features, such as earth berms and solid-mass noise walls, as part of residential developments
- Utilization of noise-sensitive architectural design and site planning, such as the orientation of quiet spaces away from roadways
- Required use of sound insulating building materials and construction methods

As indicated in the October 2016 NCDOT Traffic Noise Policy, local jurisdictions with zoning control should use the information contained in this report to develop policies and/or ordinances to limit the growth of noise-sensitive land uses located adjacent to roadways. Furthermore, NCDOT encourages the dissemination of this information to all people who may be affected by, or who might influence others affected by, traffic noise.

The table below provides information to local officials about the best estimate of future noise levels on undeveloped lands as required in 23CFR772.17. The distances shown represent a conservative estimate based on the results of the traffic noise analysis.

**Table 12: Estimate of Future Noise Levels on Undeveloped Lands**

| Section of I-40 | Land Use | Noise Level | Distance in feet (measured from Edge of Pavement) |
|---|---|---|---|
| I-85 Interchange to Old NC86 | Residential & Other sensitive outdoor areas such as parks, schools and places of worship (Categories B & C) | 66 dB(A) | **200** |
| | Noise sensitive outdoor commercial activities such as cafes, drive-in theaters, etc. (Category E) | 71 dB(A) | **85** |
| Old NC 86 to New Hope Church Rd. | Residential & Other sensitive outdoor areas such as parks, schools and places of worship (Categories B & C) | 66 dB(A) | **280** |
| | Noise sensitive outdoor commercial activities such as cafes, drive-in theaters, etc. (Category E) | 71 dB(A) | **100** |
| New Hope Church Rd. to NC 86 | Residential & Other sensitive outdoor areas such as parks, schools and places of worship (Categories B & C) | 66 dB(A) | **190** |
| | Noise sensitive outdoor commercial activities such as cafes, drive-in theaters, etc. (Category E) | 71 dB(A) | **70** |
| NC 86 to US15/501 | Residential & Other sensitive outdoor areas such as parks, schools and places of worship (Categories B & C) | 66 dB(A) | **190** |
| | Noise sensitive outdoor commercial activities such as cafes, drive-in theaters, etc. (Category E) | 71 dB(A) | **100** |

## 11.0 Construction Noise

The predominant construction activities associated with this project are expected to be Earth removal, hauling, grading, and paving. These activities may result in temporary and localized construction noise impacts. During daytime hours, the predicted effects of these impacts will be temporary speech interference for individuals living or working near the project. During evening and nighttime hours, steady-state construction noise emissions such as from paving operations will be audible and may result in sleep disturbance. Sporadic evening and nighttime construction equipment noise emissions

such as from backup alarms, lift gate closures ("slamming" of dump truck gates), etc., may be perceived as distinctly louder than the steady-state acoustic environment, and may cause impacts to users of noise-sensitive areas.

Loud construction noise activities such as usage of impact-hammers (jackhammer, hoe- ram) may provide sporadic and temporary construction noise impacts in the near vicinity of those activities (refer to Table 13).

Low-cost and easily implemented construction noise control measures should be incorporated into the project plans and specifications to the extent possible. These measures include, but are not limited to, work-hour limits, equipment exhaust muffler requirements, haul- road locations, elimination of "tail gate banging", ambient-sensitive backup alarms, construction noise complaint mechanisms, and consistent and transparent community communication.

While discrete construction noise level prediction is difficult for a receptor or group of receptors, it can be assessed in a general capacity with respect to distance from known or likely project activities. For this project, earth removal, grading, hauling, and paving is anticipated to occur in the near vicinity of numerous noise-sensitive receptors. Although construction noise impact mitigation should not place an undue burden upon the financial cost of the project or the project construction schedule, pursuant to the requirements of 23 CFR 772.19, it is the recommendation of this traffic noise analysis that:

- Earth removal, grading, hauling, and paving activities near residences should be limited to weekday daytime hours.

  If meeting the project schedule requires that earth removal, grading, hauling and / or paving must occur during evening, nighttime and / or weekend hours near residences neighborhoods, the Contractor shall notify NCDOT as soon as possible. In such instance(s), all reasonable attempts shall be made to notify and to make appropriate arrangements for the mitigation of the predicted construction noise impacts upon the affected property owners and / or residents.

- If construction noise activities must occur during context-sensitive hours near noise-sensitive areas, discrete construction noise abatement measures including, but not limited to portable noise barriers and / or other equipment-quieting devices shall be considered.

- Some construction activities may create extreme noise impacts for nearby noise-sensitive land uses. It is the recommendation of this Traffic Noise Report that considerations be made for any nearby residences for all potentially affected time periods throughout which extremely loud construction activities might occur.

**Table 13: Construction Equipment Typical Noise Level Emissions[1]**

| Equipment | Noise Level Emissions (dB(A)) at 50 Feet From Equipment[2] 70 80 90 100 |
|---|---|
| Pile Driver[3] | |
| Jack Hammer | |
| Tractor | |
| Road Grader | |
| Backhoe | |
| Truck | |
| Paver | |
| Pneumatic Wrench | |
| Crane | |
| Concrete Mixer | |
| Compressor | |
| Front-End Loader | |
| Generator | |
| Saws | |
| Roller (Compactor) | |

1 *Adapted from "Noise Construction Equipment and Operations, Building Equipment, and Home Appliances". U.S. Environmental Protection Agency. Washington D.C. 1971.*

2 *Cited noise level ranges are typical for the equipment cited. Noise energy dissipates as a function of distance between the source and the receptor. For example, if the noise level from a pile driver at a distance of 50 feet = 100 decibels (dB(A)), then at 400 feet, it might be 82 decibels (dB(A)) or less.*

3 *Due to project safety and potential construction noise concerns, pile-driving activities are typically limited to daytime hours.*

For additional information on construction noise, please refer to the FHWA Construction Noise Handbook (FHWA-HEP-06-015) and the Roadway Construction Noise Model (RCNM), available online at: http://www.fhwa.dot.gov/environment/noise/cnstr_ns.htm.

## 13.0 Conclusion

Traffic noise and construction noise can be a consequence of transportation projects, especially in areas near high-volume, existing steady-state traffic noise sources. This Traffic Noise Report for NCDOT STIP I-3306A utilized computer models created using TNM 2.5, validated to -collected noise monitoring data, to predict future noise levels and identify impacted receptors along the proposed project.

Under the Design Year (2040) Build conditions there are 87 predicted traffic noise impacts. Of these receptors, 81 will approach or exceed NCDOT's and FHWA's noise abatement criteria, two will be impacted due to a substantial increase in predicted noise levels over existing and four receptors will exceed both the NAC criteria and the substantial increase criteria. These impacted receptors are all residential except for three receptors in an athletic field, one cemetery seating area, one playground, two trail receptors, and one outdoor seating area. Noise abatement was considered for 74 of the impacted receptors. Of the sixteen walls evaluated, four walls were considered feasible and reasonable (NW6, NW13, NW22B, and NW32) and are recommend for re-evaluation during the Design phase of the project. Barrier specifics can be found within ***Appendix D*** and ***E***. ***Reference Table 9.***

## 14.0 References


Bowlby, W.; *Fundamentals of Noise and FHWA Traffic Noise Model (TNM) 2.5 Training Course*. Bowlby & Associates, Inc., Franklin, TN. February 1-5, 2010.

Federal Highway Administration. *Analysis of Highway Construction Noise*. 1984.

Federal Highway Administration. CFR 23 Part 772 – Procedures for Abatement of Highway Traffic Noise and Construction Noise. [75 FR 39820-39838, July 13, 2010].

Federal Highway Administration. *Highway Traffic Noise Analysis and Abatement Policy and Guidance*. Original June 2010 and revised December 2010.

Federal Highway Administration. *Highway Traffic Noise Analysis: Reasonableness and Feasibility of Abatement*. U.S. Department of Transportation. Washington, D.C. 1992.

North Carolina Department of Transportation. *Traffic Noise Policy*. October 2016.

North Carolina Department of Transportation. *Traffic Noise Manual*. 2016.

North Carolina Department of Transportation. *Feasibility Study: I-40 Express Lanes from I-85 to Wade Avenue*. June 2016.

U.S. Environmental Protection Agency. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. Washington, D.C. 1971.

# APPENDIX A

AMBIENT NOISE LEVEL MONITORING
(DATA FORMS & SOUND METER CALIBRATION CERTIFICATES)

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.38744

| | | | |
|---|---|---|---|
| *Instrument:* | **Acoustical Calibrator** | *Date Calibrated:* **6/19/2017** | *Cal Due:* **6/19/2018** |
| *Model:* | **NC-74** | *Status:* | **Received** / **Sent** |
| *Manufacturer:* | **Rion** | *In tolerance:* | X / X |
| *Serial number:* | **01200033** | *Out of tolerance:* | |
| *Class (IEC 60942):* | **1** | *See comments:* | |
| *Barometer type:* | | *Contains non-accredited tests:* | __Yes _X_ No |
| *Barometer s/n:* | | | |
| *ID number:* | **80289.000** | | |
| *Customer:* | **Environmental Acoustics** | *Address:* | **207 Senate Avenue** |
| *Tel/Fax:* | **717-763-7212 x2480 / 717-763-8150** | | **Camp Hill, PA 17011** |

**Tested in accordance with the following procedures and standards:**
Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

**Instrumentation used for calibration:** Nor-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 27, 2016 | Scantek, Inc./ NVLAP | Jul 27, 2017 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2017 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Nov 1, 2016 | ACR Env./ A2LA | Nov 1, 2017 |
| 140-Norsonic | Real Time Analyzer | 1403978 | Mar 22, 2017 | Scantek, Inc. / NVLAP | Mar 22, 2018 |
| PC Program 1018 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 4192-Brüel&Kjær | Microphone | 2854675 | Nov 11, 2016 | Scantek, Inc. / NVLAP | Nov 11, 2017 |
| 1203-Norsonic | Preamplifier | 92268 | Oct 17, 2016 | Scantek, Inc./ NVLAP | Oct 17, 2017 |

**Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)**

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 6/19/17 | Date | 6/19/2017 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.38749

| | |
|---|---|
| *Instrument:* | **Sound Level Meter** |
| *Model:* | **831** |
| *Manufacturer:* | **Larson Davis** |
| *Serial number:* | **0004228** |
| *Tested with:* | **Microphone 377C20 s/n 163246**<br>**Preamplifier PRM831 s/n 046381** |
| *Type (class):* | **1** |
| *Customer:* | **Environmental Acoustics** |
| *Tel/Fax:* | **717-763-7212 x2480 / 717-763-8150** |

*Date Calibrated:* **6/19/2017** *Cal Due:* **6/19/2018**

| *Status:* | Received | Sent |
|---|---|---|
| *In tolerance:* | X | X |
| *Out of tolerance:* | | |
| *See comments:* | | |

*Contains non-accredited tests:* __Yes _X_ No
*Calibration service:* __ Basic _X_ Standard
*Address:* **207 Senate Avenue**
**Camp Hill, PA 17011**

**Tested in accordance with the following procedures and standards:**
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015
SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

**Instrumentation used for calibration:** Nor-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 27, 2016 | Scantek, Inc./ NVLAP | Jul 27, 2017 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2017 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Nov 1, 2016 | ACR Env./ A2LA | Nov 1, 2017 |
| PC Program 1019 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1251-Norsonic | Calibrator | 30878 | Nov 10, 2016 | Scantek, Inc./ NVLAP | Nov 10, 2017 |

**Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).**

**Environmental conditions:**

| Temperature (°C) | Barometric pressure (kPa) | Relative Humidity (%) |
|---|---|---|
| 22.4 | 99.40 | 53.5 |

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 6/19/17 | Date | 6/19/2017 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.38750

| | | | |
|---|---|---|---|
| *Instrument:* | **Microphone** | *Date Calibrated:* | **6/19/2017** *Cal Due:* **6/19/2018** |
| *Model:* | **377C20** | *Status:* | **Received** / **Sent** |
| *Manufacturer:* | **PCB Piezotronics** | *In tolerance:* | X / X |
| *Serial number:* | **163246** | *Out of tolerance:* | |
| *Composed of:* | | *See comments:* | |

*Contains non-accredited tests:* __Yes _X_ No

| | | | |
|---|---|---|---|
| *Customer:* | **Environmental Acoustics** | *Address:* | **207 Senate Avenue** |
| *Tel/Fax:* | **717-763-7212 x2480/717-763-8150** | | **Camp Hill, PA 17011** |

**Tested in accordance with the following procedures and standards:**
Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

**Instrumentation used for calibration:** N-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 27, 2016 | Scantek, Inc./ NVLAP | Jul 27, 2017 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2017 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Nov 1, 2016 | ACR Env./ A2LA | Nov 1, 2017 |
| PC Program 1017 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1253-Norsonic | Calibrator | 28326 | Nov 10, 2016 | Scantek, Inc./ NVLAP | Nov 10, 2017 |
| 1203-Norsonic | Preamplifier | 92268 | Oct 17, 2016 | Scantek, Inc./ NVLAP | Oct 17, 2017 |
| 4180-Brüel&Kjær | Microphone | 2246115 | Oct 26, 2015 | NPL-UK / UKAS | Oct 26, 2017 |

**Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)**

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 6/19/17 | Date | 6/19/2017 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.38751

## LIMITED USE

| | | | | | |
|---|---|---|---|---|---|
| *Instrument:* | **Sound Level Meter** | *Date Calibrated:* **6/19/2017** | *Cal Due:* **6/19/2018** | | |
| *Model:* | **831** | *Status:* | **Received** | **Sent** | |
| *Manufacturer:* | **Larson Davis** | *In tolerance:* | | | |
| *Serial number:* | **0004229** | *Out of tolerance:* | X | X | |
| *Tested with:* | **Microphone 377C20 s/n 163243** | *See comments:* | X | | |
| | **Preamplifier PRM831 s/n 046380** | *Contains non-accredited tests:* __Yes X No | | | |
| *Type (class):* | **1** | *Calibration service:* __ Basic X Standard | | | |
| *Customer:* | **Environmental Acoustics** | *Address:* | **207 Senate Avenue** | | |
| *Tel/Fax:* | **717-763-7212 x2480 / 717-763-8150** | | **Camp Hill, PA 17011** | | |

**Tested in accordance with the following procedures and standards:**
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015
SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

**Instrumentation used for calibration:** Nor-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 27, 2016 | Scantek, Inc./ NVLAP | Jul 27, 2017 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2017 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Nov 1, 2016 | ACR Env./ A2LA | Nov 1, 2017 |
| PC Program 1019 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1251-Norsonic | Calibrator | 30878 | Nov 10, 2016 | Scantek, Inc./ NVLAP | Nov 10, 2017 |

**Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).**

**Environmental conditions:**

| Temperature (°C) | Barometric pressure (kPa) | Relative Humidity (%) |
|---|---|---|
| 22.7 | 99.54 | 55.4 |

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 6/19/17 | Date | 6/19/2017 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.38752

| | | | |
|---|---|---|---|
| *Instrument:* | **Microphone** | *Date Calibrated:* | **6/19/2017** *Cal Due:* **6/19/2018** |
| *Model:* | **377C20** | *Status:* | **Received** / **Sent** |
| *Manufacturer:* | **PCB Piezotronics** | *In tolerance:* | X / X |
| *Serial number:* | **163243** | *Out of tolerance:* | |
| *Composed of:* | | *See comments:* | |

*Contains non-accredited tests:* __Yes _X_ No

| | | | |
|---|---|---|---|
| *Customer:* | **Environmental Acoustics** | *Address:* | **207 Senate Avenue** |
| *Tel/Fax:* | **717-763-7212 x2480/717-763-8150** | | **Camp Hill, PA 17011** |

**Tested in accordance with the following procedures and standards:**
Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

**Instrumentation used for calibration:** N-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 27, 2016 | Scantek, Inc./ NVLAP | Jul 27, 2017 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2017 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Nov 1, 2016 | ACR Env./ A2LA | Nov 1, 2017 |
| PC Program 1017 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1253-Norsonic | Calibrator | 28326 | Nov 10, 2016 | Scantek, Inc./ NVLAP | Nov 10, 2017 |
| 1203-Norsonic | Preamplifier | 92268 | Oct 17, 2016 | Scantek, Inc./ NVLAP | Oct 17, 2017 |
| 4180-Brüel&Kjær | Microphone | 2246115 | Oct 26, 2015 | NPL-UK / UKAS | Oct 26, 2017 |

**Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)**

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 6/19/17 | Date | 6/19/2017 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.38747

| | | | |
|---|---|---|---|
| *Instrument:* | **Sound Level Meter** | *Date Calibrated:* **6/19/2017** | *Cal Due:* **6/19/2018** |
| *Model:* | **NA28** | *Status:* | **Received** / **Sent** |
| *Manufacturer:* | **Rion** | *In tolerance:* | X / X |
| *Serial number:* | **00870496** | *Out of tolerance:* | |
| *Tested with:* | **Microphone UC-59 s/n 04607** | *See comments:* | |
| | **Preamplifier NH23 s/n 70511** | *Contains non-accredited tests:* | __Yes X No |
| *Type (class):* | **1** | *Calibration service:* | __ Basic X Standard |
| *ID number:* | **80430.000** | | |
| *Customer:* | **Environmental Acoustics** | *Address:* | **207 Senate Avenue** |
| | | | **Camp Hill, PA 17011** |
| *Tel/Fax:* | **717-763-7212 x2480 / 717-763-8150** | | |

**Tested in accordance with the following procedures and standards:**
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015
SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

**Instrumentation used for calibration:** Nor-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31052 | Oct 26, 2016 | Scantek, Inc./ NVLAP | Oct 26, 2017 |
| DS-360-SRS | Function Generator | 33584 | Oct 20, 2015 | ACR Env./ A2LA | Oct 20, 2017 |
| 34401A-Agilent Technologies | Digital Voltmeter | US36120731 | Oct 12, 2016 | ACR Env. / A2LA | Oct 12, 2017 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Nov 1, 2016 | ACR Env./ A2LA | Nov 1, 2017 |
| PC Program 1019 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1251-Norsonic | Calibrator | 30878 | Nov 10, 2016 | Scantek, Inc./ NVLAP | Nov 10, 2017 |

**Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).**

**Environmental conditions:**

| Temperature (°C) | Barometric pressure (kPa) | Relative Humidity (%) |
|---|---|---|
| 22.9 | 99.55 | 54.9 |

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | Jeremy Gotwalt | Signature | Steven E Marshall |
| Date | 6/19/17 | Date | 6/19/2017 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.38745

*Instrument:* **Sound Level Meter**
*Model:* **NA28**
*Manufacturer:* **Rion**
*Serial number:* **01170630**
*Tested with:* **Microphone UC-59 s/n 04608**
**Preamplifier NH23 s/n 70648**
*Type (class):* **1**
*ID number:* **80427.000**
*Customer:* **Environmental Acoustics**
*Tel/Fax:* **717-763-7212 x2480 / 717-763-8150**

*Date Calibrated:* **6/19/2017** *Cal Due:* **6/19/2018**

| *Status:* | Received | Sent |
|---|---|---|
| *In tolerance:* | X | X |
| *Out of tolerance:* | | |
| *See comments:* | | |

*Contains non-accredited tests:* __Yes _X_ No
*Calibration service:* __ Basic _X_ Standard

*Address:* **207 Senate Avenue**
**Camp Hill, PA 17011**

**Tested in accordance with the following procedures and standards:**
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015
SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

**Instrumentation used for calibration:** Nor-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 27, 2016 | Scantek, Inc./ NVLAP | Jul 27, 2017 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2017 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Nov 1, 2016 | ACR Env./ A2LA | Nov 1, 2017 |
| PC Program 1019 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1251-Norsonic | Calibrator | 30878 | Nov 10, 2016 | Scantek, Inc./ NVLAP | Nov 10, 2017 |

**Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).**

**Environmental conditions:**

| Temperature (°C) | Barometric pressure (kPa) | Relative Humidity (%) |
|---|---|---|
| 21.9 | 99.46 | 50.9 |

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 6/19/17 | Date | 6/19/2017 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.38746

| | | | |
|---|---|---|---|
| *Instrument:* | **Microphone** | *Date Calibrated:* | **6/19/2017** *Cal Due:* **6/19/2018/** |
| *Model:* | **UC-59** | *Status:* | **Received** / **Sent** |
| *Manufacturer:* | **Rion** | *In tolerance:* | **X** / **X** |
| *Serial number:* | **04608** | *Out of tolerance:* | |
| *Composed of:* | | *See comments:* | |
| | | *Contains non-accredited tests:* | **__Yes _X_ No** |

| | | | |
|---|---|---|---|
| *Customer:* | **Environmental Acoustics** | *Address:* | **207 Senate Avenue** |
| *Tel/Fax:* | **717-763-7212 x2480/717-763-8150** | | **Camp Hill, PA 17011** |

**Tested in accordance with the following procedures and standards:**
Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

**Instrumentation used for calibration:** N-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 27, 2016 | Scantek, Inc./ NVLAP | Jul 27, 2017 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2017 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Nov 1, 2016 | ACR Env./ A2LA | Nov 1, 2017 |
| PC Program 1017 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1253-Norsonic | Calibrator | 28326 | Nov 10, 2016 | Scantek, Inc./ NVLAP | Nov 10, 2017 |
| 1203-Norsonic | Preamplifier | 92268 | Oct 17, 2016 | Scantek, Inc./ NVLAP | Oct 17, 2017 |
| 4180-Brüel&Kjær | Microphone | 2246115 | Oct 26, 2015 | NPL-UK / UKAS | Oct 26, 2017 |

**Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)**

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 6/19/17 | Date | 6/19/2017 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.38748

| | | | |
|---|---|---|---|
| *Instrument:* | **Microphone** | *Date Calibrated:* | **6/19/2017** *Cal Due:* **6/19/2018** |
| *Model:* | **UC-59** | *Status:* | **Received** / **Sent** |
| *Manufacturer:* | **Rion** | *In tolerance:* | **X** / **X** |
| *Serial number:* | **04607** | *Out of tolerance:* | |
| *Composed of:* | | *See comments:* | |

*Contains non-accredited tests:* ___Yes _X_ No

| | | | |
|---|---|---|---|
| *Customer:* | **Environmental Acoustics** | *Address:* | **207 Senate Avenue** |
| *Tel/Fax:* | **717-763-7212 x2480/717-763-8150** | | **Camp Hill, PA 17011** |

**Tested in accordance with the following procedures and standards:**
Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

**Instrumentation used for calibration:** N-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 27, 2016 | Scantek, Inc./ NVLAP | Jul 27, 2017 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2017 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Nov 1, 2016 | ACR Env./ A2LA | Nov 1, 2017 |
| PC Program 1017 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1253-Norsonic | Calibrator | 28326 | Nov 10, 2016 | Scantek, Inc./ NVLAP | Nov 10, 2017 |
| 1203-Norsonic | Preamplifier | 92268 | Oct 17, 2016 | Scantek, Inc./ NVLAP | Oct 17, 2017 |
| 4180-Brüel&Kjær | Microphone | 2246115 | Oct 26, 2015 | NPL-UK / UKAS | Oct 26, 2017 |

**Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)**

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 6/19/17 | Date | 6/19/2017 |

**Scantek, Inc.**
CALIBRATION LABORATORY
ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.39974

| | |
|---|---|
| *Instrument:* | **Noise Dosimeter/SLM** |
| *Model:* | **Spark 706** |
| *Manufacturer:* | **Larson Davis** |
| *Serial number:* | **01595** |
| *Tested with:* | **Microphone MPR002 s/n B0565** |
| *ID number:* | **80389.000** |
| *Type (class):* | **2** |
| *Customer:* | **Environmental Acoustics** |
| *Tel/Fax:* | **717-763-7212 x2480 / 717-763-8150** |

*Date Calibrated:* **1/18/2018** *Cal Due:* **1/18/2019**

| *Status:* | **Received** | **Sent** |
|---|---|---|
| *In tolerance:* | X | X |
| *Out of tolerance:* | | |
| *See comments:* | | |

*Contains non-accredited tests:* __ **Yes** _X_ **No**
*Calibration service:* __ **Basic** _X_ **Standard**
*Address:* **207 Senate Avenue**
**Camp Hill, PA 17011**

**Tested in accordance with the following procedures and standards:**
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015
SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

**Instrumentation used for calibration:** Nor-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 28, 2017 | Scantek, Inc./ NVLAP | Jul 28, 2018 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 20, 2017 | ACR Env./ A2LA | Sep 20, 2018 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Oct 25, 2017 | ACR Env./ A2LA | Oct 25, 2018 |
| PC Program 1019 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1251-Norsonic | Calibrator | 30878 | Nov 10, 2017 | Scantek, Inc./ NVLAP | Nov 10, 2018 |
| 4226-Brüel&Kjær | Multifunction calibrator | 2305103 | Sep 5, 2017 | Brüel&Kjær/ A2LA | Sep 5, 2018 |

**Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).**

**Environmental conditions:**

| Temperature (°C) | Barometric pressure (kPa) | Relative Humidity (%) |
|---|---|---|
| 23.5 | 100.42 | 35.3 |

| **Calibrated by:** | Jeremy Gotwalt | **Authorized signatory:** | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 1/19/18 | Date | 1/24/2018 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.39973

| | |
|---|---|
| *Instrument:* | **Noise Dosimeter/SLM** |
| *Model:* | **Spark 706** |
| *Manufacturer:* | **Larson Davis** |
| *Serial number:* | **01596** |
| *Tested with:* | **Microphone MPR002 s/n B0404** |
| *ID number:* | **80390.000** |
| *Type (class):* | **2** |
| *Customer:* | **Environmental Acoustics** |
| *Tel/Fax:* | **717-763-7212 x2480 / 717-763-8150** |

*Date Calibrated:* **1/19/2018** *Cal Due:* **1/19/2019**

| *Status:* | Received | Sent |
|---|---|---|
| *In tolerance:* | X | X |
| *Out of tolerance:* | | |
| *See comments:* | | |

*Contains non-accredited tests:* __Yes _X_ No
*Calibration service:* __ Basic _X_ Standard
*Address:* **207 Senate Avenue**
**Camp Hill, PA 17011**

**Tested in accordance with the following procedures and standards:**
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015
SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

**Instrumentation used for calibration:** Nor-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 28, 2017 | Scantek, Inc./ NVLAP | Jul 28, 2018 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 20, 2017 | ACR Env./ A2LA | Sep 20, 2018 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Oct 25, 2017 | ACR Env./ A2LA | Oct 25, 2018 |
| PC Program 1019 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 1251-Norsonic | Calibrator | 30878 | Nov 10, 2017 | Scantek, Inc./ NVLAP | Nov 10, 2018 |
| 4226-Brüel&Kjær | Multifunction calibrator | 2305103 | Sep 5, 2017 | Brüel&Kjær/ A2LA | Sep 5, 2018 |

**Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).**

**Environmental conditions:**

| Temperature (°C) | Barometric pressure (kPa) | Relative Humidity (%) |
|---|---|---|
| 23.8 | 100.34 | 34.9 |

| **Calibrated by:** | Jeremy Gotwalt | **Authorized signatory:** | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 1/19/18 | Date | 1/24/2018 |

**Scantek, Inc.**
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

# Calibration Certificate No.39972

| | | | |
|---|---|---|---|
| *Instrument:* | **Acoustical Calibrator** | *Date Calibrated:* **1/18/2018** | *Cal Due:* **1/18/2019** |
| *Model:* | **Cal150** | *Status:* | **Received** / **Sent** |
| *Manufacturer:* | **Larson Davis** | *In tolerance:* | X / X |
| *Serial number:* | **3047** | *Out of tolerance:* | |
| *Class (IEC 60942):* | **2** | *See comments:* | |
| *Barometer type:* | | *Contains non-accredited tests:* | **__Yes _X_ No** |
| *Barometer s/n:* | | | |
| *Customer:* | **Environmental Acoustics** | *Address:* | **207 Senate Avenue** |
| *Tel/Fax:* | **717-763-7212 x2480 / 717-763-8150** | | **Camp Hill, PA 17011** |

**Tested in accordance with the following procedures and standards:**
Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

**Instrumentation used for calibration:** Nor-1504 Norsonic Test System:

| Instrument - Manufacturer | Description | S/N | Cal. Date | Traceability evidence Cal. Lab / Accreditation | Cal. Due |
|---|---|---|---|---|---|
| 483B-Norsonic | SME Cal Unit | 31061 | Jul 28, 2017 | Scantek, Inc./ NVLAP | Jul 28, 2018 |
| DS-360-SRS | Function Generator | 88077 | Sep 15, 2016 | ACR Env./ A2LA | Sep 15, 2018 |
| 34401A-Agilent Technologies | Digital Voltmeter | MY47011118 | Sep 20, 2017 | ACR Env./ A2LA | Sep 20, 2018 |
| HM30-Thommen | Meteo Station | 1040170/39633 | Oct 25, 2017 | ACR Env./ A2LA | Oct 25, 2018 |
| 140-Norsonic | Real Time Analyzer | 1403978 | Mar 22, 2017 | Scantek, Inc. / NVLAP | Mar 22, 2018 |
| PC Program 1018 Norsonic | Calibration software | v.6.1T | Validated Nov 2014 | Scantek, Inc. | - |
| 4192-Brüel&Kjær | Microphone | 2854675 | Nov 11, 2017 | Scantek, Inc. / NVLAP | Nov 11, 2018 |
| 1203-Norsonic | Preamplifier | 92268 | Oct 18, 2017 | Scantek, Inc./ NVLAP | Oct 18, 2018 |

**Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)**

| Calibrated by: | Jeremy Gotwalt | Authorized signatory: | Steven E. Marshall |
|---|---|---|---|
| Signature | | Signature | |
| Date | 1/18/18 | Date | 1/24/2018 |

# *I-40 Widening VALIDATION MODEL SUMMARY*

| SITE | ADDRESS | MONITORED AVG $Le_q$ | MODELED $Le_q$ | DIFFERENCE +/- 3 dB(A) | VALIDATED Y/N |
|---|---|---|---|---|---|
| *M1* | *1229 DIMMOCKS MILL RD* | *64.4* | *66.6* | *2.2* | *Y* |
| *M2* | *1225 DIMMOCKS MILL RD* | *60.3* | *59.6* | *-0.7* | *Y* |
| *M3* | *1225 DIMMOCKS MILL RD* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M4* | *1402 DIMMOCKS MILL RD* | *57.2* | *57.7* | *0.5* | *Y* |
| *M5* | *1414 DIMMOCKS MILL RD* | *55.1* | *56.7* | *1.6* | *Y* |
| *M6* | *1125 NEW GRADY BROWN SCHOOL RD* | *58.5* | *57* | *-1.5* | *Y* |
| *M7* | *#9 PRICE ST* | *62.1* | *63.5* | *1.4* | *Y* |
| *M8* | *#10 PRICE ST* | *56.2* | *57.8* | *1.6* | *Y* |
| *M9* | *#11 PRICE ST* | *56.1* | *57.3* | *1.2* | *Y* |
| *M10* | *2405 TIMBER OAK DR* | *57.2* | *57.2* | *0* | *Y* |
| *M11* | *2411 TIMBER OAK DR* | *52.3* | *52.6* | *0.3* | *Y* |
| *M12* | *2411 TIMBER OAK DR* | *51.1* | *53.6* | *2.5* | *Y* |
| *M13* | *2335 BLAIR DR* | *66.6* | *69.4* | *2.8* | *Y* |
| *M14* | *2334 BLAIR DR* | *58.2* | *57.1* | *-1.1* | *Y* |
| *M15* | *2331 BLAIR DR* | *58.5* | *56.1* | *-2.4* | *Y* |
| *M16* | *2338 BLAIR DR* | *62.9* | *62.6* | *-0.3* | *Y* |
| *M17* | *3209 OLD CH HILLSBOROUGH RD* | *62.2* | *63.4* | *1.2* | *Y* |
| *M18* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M19* | *3220 OLD NC 86* | *METER MALFUNCTION* | *N/A* | *N/A* | *N/A* |
| *M20* | *3220 OLD NC 86* | *61.2* | *61.8* | *0.6* | *y* |
| *M21* | *3300 OLD NC 86* | *57.5* | *59.3* | *1.8* | *y* |
| *M22* | *430 WATERSTONE DR* | *24 HOUR METER* | *N/A* | *N/A* | *N/A* |
| *M23* | *648 ALICE LOOP* | *62.4* | *60.5* | *-1.9* | *Y* |
| *M24* | *649 ALICE LOOP* | *58.1* | *58.6* | *0.5* | *Y* |
| *M25* | *1605 CHEYENNE DR* | *61.2* | *59.5* | *-1.7* | *Y* |
| *M26* | *1606 CHEYENNE DR* | *56.5* | *54.5* | *-2* | *Y* |
| *M27* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M28* | *4334 VALLIE HIGH LN* | *52.3* | *54.9* | *2.6* | *Y* |
| *M29* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M30* | *1201 NEW HOPE CHURCH RD* | *56.8* | *57.8* | *1* | *Y* |
| *M31* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M32* | *1315 NEW HOPE TRACE* | *57.7* | *57.1* | *-0.6* | *Y* |
| *M33* | *6114 MEADOWSWEET LN* | *59.9* | *57* | *-2.9* | *Y* |
| *M34* | *6114 MEADOWSWEET LN* | *53.8* | *51* | *-2.8* | *Y* |
| *M35* | *6027 MEADOW GREER RD* | *63.5* | *62.1* | *-1.4* | *Y* |
| *M36* | *6025 MEADOW GREER RD* | *57* | *58.3* | *1.3* | *Y* |
| *M37* | *6019 MEADOW GREER RD* | *54.3* | *56.7* | *2.4* | *Y* |
| *M38* | *6211 JERICHO RD* | *62.9* | *61.3* | *-1.6* | *Y* |
| *M39* | *5705 STONEYWOOD RD* | *58.7* | *59.5* | *0.8* | *Y* |
| *M40* | *5704 HIDEAWAY DR* | *55.8* | *58.3* | *2.5* | *Y* |
| *M41* | *5911 HIDEWAY DR* | *60.9* | *61.4* | *0.5* | *Y* |

# *I-40 Widening VALIDATION MODEL SUMMARY*

| SITE | ADDRESS | MONITORED AVG $Le_q$ | MODELED $Le_q$ | DIFFERENCE +/- 3 dB(A) | VALIDATED Y/N |
|---|---|---|---|---|---|
| *M42* | *6023 NC 86* | *56.2* | *54.4* | *-1.8* | *Y* |
| *M43* | *6021 NC 86, Trailer 18* | *60.6* | *59.1* | *-1.5* | *Y* |
| *M44* | *2107 CLYDE RD* | *65.2* | *62.9* | *-2.3* | *Y* |
| *M45* | *2107 CLYDE RD* | *59.6* | *58* | *-1.6* | *Y* |
| *M46* | *2113 CLYDE RD* | *58.8* | *56.2* | *-2.6* | *Y* |
| *M47* | *104 GROOMSBRIDGE CT* | *56.9* | *54* | *-2.9* | *Y* |
| *M48* | *104 GROOMSBRIDGE CT* | *54.2* | *52.8* | *-1.4* | *Y* |
| *M49* | *7707 NC 86* | *59.9* | *62.3* | *2.4* | *Y* |
| *M50A* | *7106 DUMFRIES LN* | *60.8* | *62.7* | *1.9* | *Y* |
| *M50B* | *7106 DUMFRIES LN* | *56.7* | *57.8* | *1.1* | *Y* |
| *M51* | *7120 DUMFIRES LN* | *55.5* | *53.3* | *-2.2* | *Y* |
| *M52* | *200 PERKINS DRIVE* | *64.5* | *63* | *-1.5* | *Y* |
| *M53* | *155 SCHULTZ ST.* | *56.5* | *54.3* | *-2.2* | *Y* |
| *M54* | *149 SCHULTZ ST.* | *53.7* | *52.3* | *-1.4* | *Y* |
| *M55* | *133 SCHULTZ ST.* | *51.4* | *51.6* | *0.2* | *Y* |
| *M56* | *870 WEAVER DAIRY RD* | *54.7* | *56.2* | *1.5* | *Y* |
| *M57* | *750 WEAVER DAIRY RD* | *64.6* | *62.9* | *-1.7* | *Y* |
| *M58* | *111 FOXRIDGE RD* | *64.2* | *65* | *0.8* | *Y* |
| *M59* | *112 FOXRIDGE RD* | *60.2* | *58.7* | *-1.5* | *Y* |
| *M60* | *#N/A* | *DROPPED* | *N/A* | *N/A* | *N/A* |
| *M61* | *1023 NORTHRIDGE LN* | *61.4* | *61.8* | *0.4* | *Y* |
| *M62* | *1023 NORTHRIDGE LN* | *60.5* | *61.9* | *1.4* | *Y* |
| *M63* | *1024 NORTHRIDGE LN* | *60.8* | *62.2* | *1.4* | *Y* |
| *M64* | *420 WATERSTONE DR* | *24 HOUR METER* | *N/A* | *N/A* | *N/A* |
| *M65* | *4002 SWEETEN CREEK RD* | *61.1* | *59* | *-2.1* | *y* |
| *M66* | *101 LANDING DR* | *52.9* | *51.1* | *-1.8* | *y* |
| *M67* | *103 LANDING DR* | *49.6* | *46.8* | *-2.8* | *y* |
| *M68A* | *7300 MAYSE DR* | *58.5* | *59.9* | *1.4* | *y* |
| *M68B* | *7304 DELBERTS POND RD* | *52.3* | *52.8* | *0.5* | *y* |
| *M70* | *4629 DRY CREEK RD* | *58.6* | *60.9* | *2.3* | *y* |
| *M71* | *390 ERWIN RD* | *62.8* | *65* | *2.2* | *y* |
| *M72* | *3600 MT. MORIAH RD* | *63.2* | *63.4* | *0.2* | *Y* |
| *M73* | *3600 MT. MORIAH RD* | *58.2* | *58.9* | *0.7* | *Y* |
| *M74* | *3600 MT. MORIAH RD* | *57.4* | *56.2* | *-1.2* | *Y* |

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M1

Gannett Fleming, Inc.

**Address:**
1229 Dimmocks Mill Rd.
Hillsborough, NC 27278

Meter Storage #: M1

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 81F ***Wind Speed:*** 0 mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 9:18 |
| ***Stop:*** | 9:38 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 64.4 |

**Traffic Data**

| | ***Roadway #1: Dimmocks Mill*** | | ***Roadway #2: I85/I40*** | |
|---|---|---|---|---|
| ***Direction:*** | ***All*** | | ***NB/EB*** | ***SB/WB*** |
| ***Auto:*** | 14 | | 1054 | 763 |
| ***Medium Truck:*** | 0 | | 45 | 29 |
| ***Heavy Truck:*** | 0 | | 92 | 82 |
| ***Bus:*** | 0 | | 6 | 4 |
| ***Motorcycle:*** | 0 | | 0 | 4 |

| | ***Roadway #3:*** | | ***Roadway #4:*** | | ***Roadway #5*** | |
|---|---|---|---|---|---|---|
| ***Direction:*** | | | | | | |
| ***Auto:*** | | | | | | |
| ***Medium Truck:*** | | | | | | |
| ***Heavy Truck:*** | | | | | | |
| ***Bus:*** | | | | | | |
| ***Motorcycle:*** | | | | | | |

***Notes:*** Roadway #1: One lane per direction, avg. width = 12ft and avg. speed observed 45mph; Roadway #2: 4 lanes in NB/EB and 5 lanes in SB/WB, avg. width = 12ft and avg. speed observed and posted speed for NB/EB was 55 mph and SB/WB 65 mph; width applies to all lanes in a road segment.

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M2

Gannett Fleming, Inc.

**Address:**
1225 Dimmocks Mill Rd.
Hillsborough, NC 27278

Meter Storage #: M2

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 3* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 81F ***Wind Speed:*** 0.5 mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 9:18 |
| ***Stop:*** | 9:38 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 60.3 |

**Traffic Data**

| | ***Roadway #1: Dimmocks Mill*** | | ***Roadway #2: I85/I40*** | |
|---|---|---|---|---|
| ***Direction:*** | ***All*** | | ***NB/EB*** | ***SB/WB*** |
| ***Auto:*** | 14 | | 1054 | 763 |
| ***Medium Truck:*** | 0 | | 45 | 29 |
| ***Heavy Truck:*** | 0 | | 92 | 82 |
| ***Bus:*** | 0 | | 6 | 4 |
| ***Motorcycle:*** | 0 | | 0 | 4 |

| | ***Roadway #3: I40 ramp to I85*** | | ***Roadway #4:*** | | ***Roadway #5*** | |
|---|---|---|---|---|---|---|
| ***Direction:*** | ***All*** | | | | | |
| ***Auto:*** | 413 | | | | | |
| ***Medium Truck:*** | 15 | | | | | |
| ***Heavy Truck:*** | 34 | | | | | |
| ***Bus:*** | 2 | | | | | |
| ***Motorcycle:*** | 0 | | | | | |

***Notes:*** Roadway #1: One lane per direction, avg. width = 12ft and avg. speed observed 45mph; Roadway #2: 4 lanes in NB/EB and 5 lanes in SB/WB, avg. width = 12ft and avg. speed observed and posted speed for NB/EB was 55 mph and SB/WB 65 mph; width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M4 (30 minutes)

Gannett Fleming, Inc.

**Address:**
1402 Dimmocks Mill Rd.
Hillsborough, NC 27278

Meter Storage #: M4

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other*

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After***

**Weather:** ***Temperature:*** 78°F ***Wind Speed:*** 0 mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 30 mins |
| ***Start:*** | 9:18 |
| ***Stop:*** | 9:48 |
| ***Duration:*** | 30 mins |
| ***Average LEQ*** | 57.2 |

**Traffic Data**

| | ***Roadway #1: Dimmocks Mill*** | ***Roadway #2: I85/I40*** | |
|---|---|---|---|
| ***Direction:*** | ***All*** | ***NB/EB*** | ***SB/WB*** |
| ***Auto:*** | 21 | 1581 | 1145 |
| ***Medium Truck:*** | 0 | 68 | 44 |
| ***Heavy Truck:*** | 0 | 138 | 123 |
| ***Bus:*** | 0 | 9 | 6 |
| ***Motorcycle:*** | 0 | 0 | 6 |

| | ***Roadway #3:*** | ***Roadway #4:*** | ***Roadway #5*** |
|---|---|---|---|
| ***Direction:*** | | | |
| ***Auto:*** | | | |
| ***Medium Truck:*** | | | |
| ***Heavy Truck:*** | | | |
| ***Bus:*** | | | |
| ***Motorcycle:*** | | | |

***Notes:*** Insect noise constant from trees south of the residence. Did 30 minute measurement instead of site M5. The 30 minute measurement time was due to resident coming out to discuss the reason for the measurement causing the measurement period to exceed 30 minutes. Since we had the data we decided to use it. Roadway #1: 1 lane in each direction, width = 12ft, avg./posted speed = 45mph; Roadyway #2: 4 lanes in NB/EB and 5 lanes in SB/WB, width = 12ft, avg. speed = 65mph in NB/EB, avg. speed = 55mph SB/WB; width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M5

Gannett Fleming, Inc.

**Address:**
1414 Dimmocks Mill Rd.
Hillsborough, NC 27278

Meter Storage #: M5

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other*

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After***

**Weather:** ***Temperature:*** 84F ***Wind Speed:*** 0 mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 10:03 |
| ***Stop:*** | 10:23 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 55.1 |

**Traffic Data**

| ***Roadway #1: Dimmocks Mill*** | | | |
|---|---|---|---|
| ***Direction:*** | ***All*** | | |
| ***Auto:*** | 12 | | |
| ***Medium Truck:*** | 2 | | |
| ***Heavy Truck:*** | 1 | | |
| ***Bus:*** | 0 | | |
| ***Motorcycle:*** | 0 | | |

| ***Roadway #2: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 560 | 562 |
| ***Medium Truck:*** | 27 | 21 |
| ***Heavy Truck:*** | 69 | 61 |
| ***Bus:*** | 0 | 5 |
| ***Motorcycle:*** | 1 | 0 |

| ***Roadway #3: I85*** | | |
|---|---|---|
| ***Direction:*** | ***SB*** | ***NB*** |
| ***Auto:*** | 414 | 388 |
| ***Medium Truck:*** | 11 | 22 |
| ***Heavy Truck:*** | 59 | 53 |
| ***Bus:*** | 4 | 2 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: I85 ramp to I40*** | | | |
|---|---|---|---|
| ***Direction:*** | ***All*** | | |
| ***Auto:*** | 560 | | |
| ***Medium Truck:*** | 32 | | |
| ***Heavy Truck:*** | 65 | | |
| ***Bus:*** | 0 | | |
| ***Motorcycle:*** | 1 | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Lots of insects and bird noises during measurement. However, the primary noise source was from the roadway.
Roadway #1: 1 lane in each direction, width = 12ft, avg. speed = 43mph, posted = 45mph; Roadway #2: 3 lanes in each direction, width = 12ft,
avg. speed EB = 65mph, posted speed EB = 65mph, avg. speed WB = 57mph, posted speed WB = 55mph; Roadway #3 - #4: 1 lane in each direction, width = 12ft,
avg. speed = 60mph, posted speed EB = 65mph and posted speed WB = 55mph, posted speed ramp = 65mph , width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M6

Gannett Fleming, Inc.

**Address:**
1125 New Grady Brown School Rd.
Hillsborough, NC 27278

Meter Storage #: M6

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 84F ***Wind Speed:*** 0 mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 10:37 |
| ***Stop:*** | 10:57 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 58.5 |

**Traffic Data**

| | ***Roadway #1: I40*** | | | ***Roadway #2: Binford Rd.*** | | |
|---|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | | ***WB*** | ***Direction:*** | ***All*** | |
| ***Auto:*** | 563 | | 573 | ***Auto:*** | 2 | |
| ***Medium Truck:*** | 27 | | 20 | ***Medium Truck:*** | 0 | |
| ***Heavy Truck:*** | 73 | | 70 | ***Heavy Truck:*** | 0 | |
| ***Bus:*** | 2 | | 2 | ***Bus:*** | 0 | |
| ***Motorcycle:*** | 0 | | 1 | ***Motorcycle:*** | 0 | |

| | ***Roadway #3:*** | | | ***Roadway #4:*** | | | ***Roadway #5*** | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Direction:*** | | | | ***Direction:*** | | | ***Direction:*** | | |
| ***Auto:*** | | | | ***Auto:*** | | | ***Auto:*** | | |
| ***Medium Truck:*** | | | | ***Medium Truck:*** | | | ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | | | ***Heavy Truck:*** | | | ***Heavy Truck:*** | | |
| ***Bus:*** | | | | ***Bus:*** | | | ***Bus:*** | | |
| ***Motorcycle:*** | | | | ***Motorcycle:*** | | | ***Motorcycle:*** | | |

***Notes:*** 1038am - 1040am helicopter flyover and landing, riding lawnmower went by meter around 10:40am. Lots of insect noise from the trees but noise from the roadway was primary.; Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 60mph, avg. speed WB = 55mph, posted speed EB = 65mph, posted WB = 55mph;
Roadway #2: 2 lanes in each direction, width = 12ft, avg. speed = 40mph; width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M7

Gannett Fleming, Inc.

**Address:**
2405 Timber Oak Dr.
Hillsborough, NC 27278

Meter Storage #: M7

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other*

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After***

**Weather:** ***Temperature:*** 84F ***Wind Speed:*** 0 mph - average ***Cloud Cover:*** Cloudy (100%)

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 10:37 |
| ***Stop:*** | 10:57 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 62.1 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 563 | 573 |
| ***Medium Truck:*** | 27 | 20 |
| ***Heavy Truck:*** | 73 | 70 |
| ***Bus:*** | 2 | 2 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #2: I40 to I85*** | | |
|---|---|---|
| ***Direction:*** | ***NB*** | ***SB*** |
| ***Auto:*** | 6 | 567 |
| ***Medium Truck:*** | 5 | 15 |
| ***Heavy Truck:*** | 1 | 69 |
| ***Bus:*** | 0 | 2 |
| ***Motorcycle:*** | 0 | 1 |

**Traffic Data**

| ***Roadway #3: Binford Rd.*** | |
|---|---|
| ***Direction:*** | ***All*** |
| ***Auto:*** | 2 |
| ***Medium Truck:*** | 0 |
| ***Heavy Truck:*** | 0 |
| ***Bus:*** | 0 |
| ***Motorcycle:*** | 0 |

| ***Roadway #4:*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

| ***Roadway #5*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

***Notes:*** 1038am - 1040am helicopter flyover and landing, riding lawnmower went by meter around 10:40am. Lots of insect noise from the trees but noise from the roadway was primary.; Roadway #1-2: 2 lanes in each direction, width = 12ft, avg. speed EB = 60mph, avg. speed WB = 55mph, posted speed EB = 65mph, posted WB = 55mph;
Roadway #3: 2 lanes in each direction, width = 12ft, avg. speed = 40mph; width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M8

Gannett Fleming, Inc.

**Address:**
Price St.
Hillsborough, NC 27278

Meter Storage #: M8

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other*

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After***

**Weather:** ***Temperature:*** 86°F ***Wind Speed:*** 1 mph - average ***Cloud Cover:*** Partly Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 10:37 |
| ***Stop:*** | 10:57 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 56.2 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 563 | 573 |
| ***Medium Truck:*** | 27 | 20 |
| ***Heavy Truck:*** | 73 | 70 |
| ***Bus:*** | 2 | 2 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #2: I40 to I85*** | | |
|---|---|---|
| ***Direction:*** | ***NB*** | **SB** |
| ***Auto:*** | 6 | 567 |
| ***Medium Truck:*** | 5 | 15 |
| ***Heavy Truck:*** | 1 | 69 |
| ***Bus:*** | 0 | 2 |
| ***Motorcycle:*** | 0 | 1 |

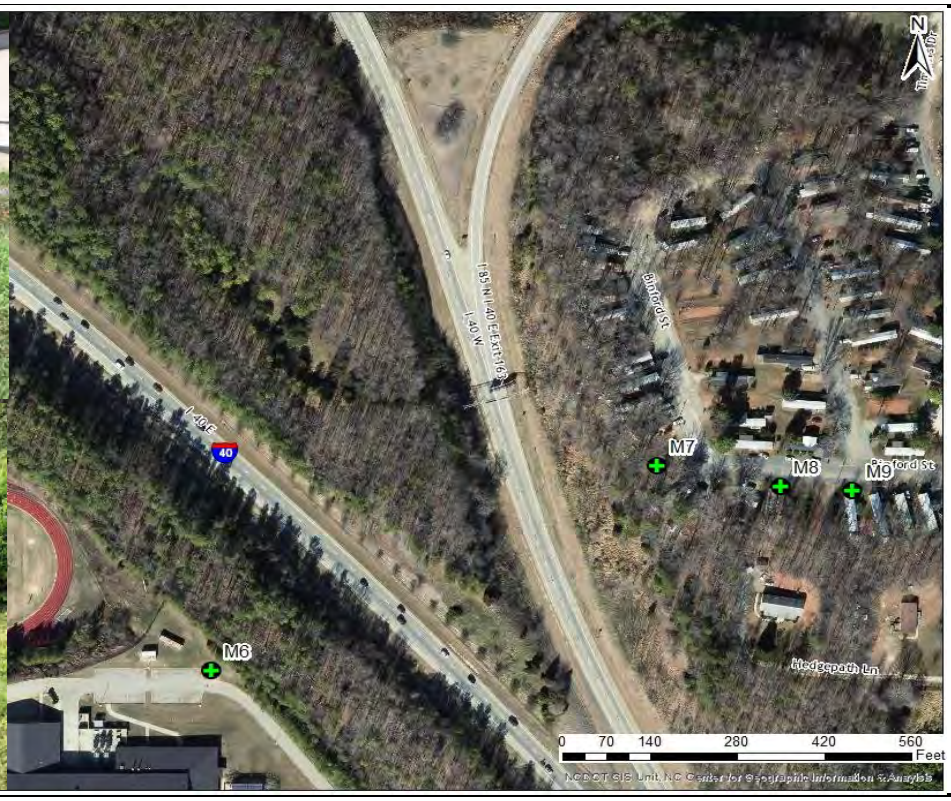
| ***Roadway #3: Binford Rd.*** | | |
|---|---|---|
| ***Direction:*** | ***All*** | |
| ***Auto:*** | 2 | |
| ***Medium Truck:*** | 0 | |
| ***Heavy Truck:*** | 0 | |
| ***Bus:*** | 0 | |
| ***Motorcycle:*** | 0 | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** 1038am - 1040am helicopter flyover and landing, riding lawnmower went by meter around 10:40am. Lots of insect noise from the trees but noise from the roadway was primary.; Roadway #1-2: 2 lanes in each direction, width = 12ft, avg. speed EB = 60mph, avg. speed WB = 55mph, posted speed EB = 65mph, posted WB = 55mph;
Roadway #3: 2 lanes in each direction, width = 12ft, avg. speed = 40mph; width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M9

Gannett Fleming, Inc.

**Address:**
Price St.
Hillsborough, NC 27278

Meter Storage #: M9

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other*

***Meter Number:*** *Rion #3* ***Meter Calibration:*** ***Before*** ✓ ***After***

**Weather:** ***Temperature:*** 86°F ***Wind Speed:*** 1 mph - average ***Cloud Cover:*** Partly Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 10:37 |
| ***Stop:*** | 10:57 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 56.1 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 563 | 573 |
| ***Medium Truck:*** | 27 | 20 |
| ***Heavy Truck:*** | 73 | 70 |
| ***Bus:*** | 2 | 2 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #2: I40 to I85*** | | |
|---|---|---|
| ***Direction:*** | ***NB*** | **SB** |
| ***Auto:*** | 6 | 567 |
| ***Medium Truck:*** | 5 | 15 |
| ***Heavy Truck:*** | 1 | 69 |
| ***Bus:*** | 0 | 2 |
| ***Motorcycle:*** | 0 | 1 |

**Traffic Data**

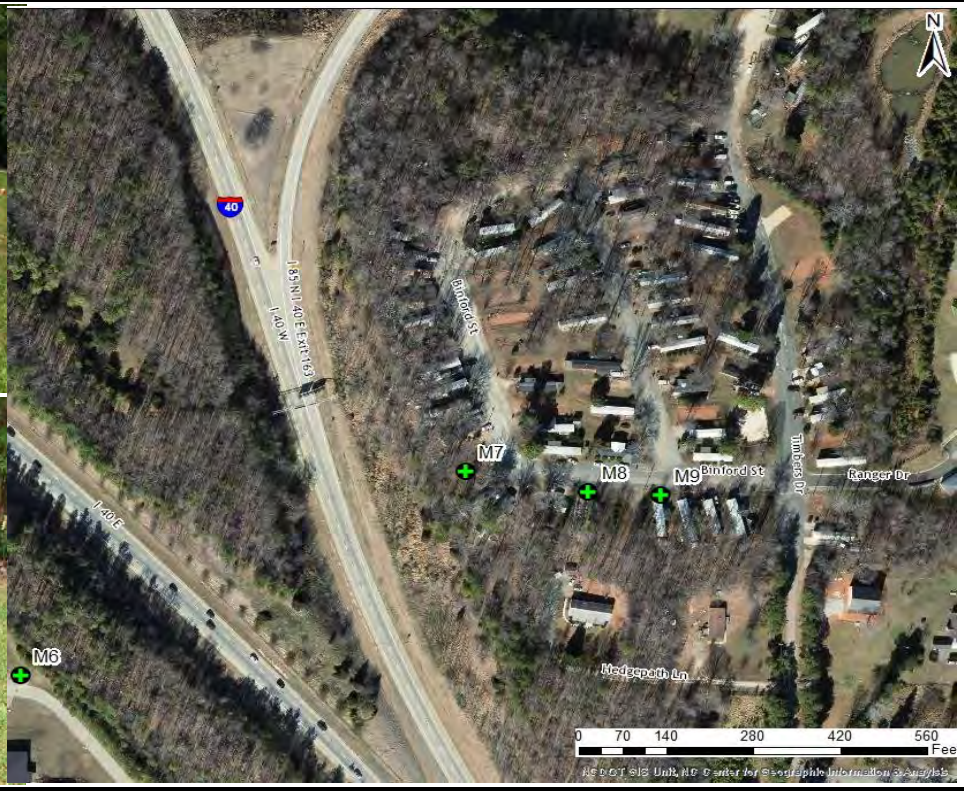
| ***Roadway #3: Binford Rd.*** | | |
|---|---|---|
| ***Direction:*** | ***All*** | |
| ***Auto:*** | 2 | |
| ***Medium Truck:*** | 0 | |
| ***Heavy Truck:*** | 0 | |
| ***Bus:*** | 0 | |
| ***Motorcycle:*** | 0 | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** 1038am - 1040am helicopter flyover and landing, riding lawnmower went by meter around 10:40am. Lots of insect noise from the trees but noise from the roadway was primary.; Roadway #1-2: 2 lanes in each direction, width = 12ft, avg. speed EB = 60mph, avg. speed WB = 55mph, posted speed EB = 65mph, posted WB = 55mph;
Roadway #3: 2 lanes in each direction, width = 12ft, avg. speed = 40mph; width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M10

Gannett Fleming, Inc.

**Address:**
2405 Timber Oak Dr.
Hillsborough, NC 27278

Meter Storage #: M10

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other*

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After***

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 3mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 13:20 |
| ***Stop:*** | 13:40 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 57.2 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 542 | 582 |
| ***Medium Truck:*** | 17 | 20 |
| ***Heavy Truck:*** | 54 | 72 |
| ***Bus:*** | 1 | 1 |
| ***Motorcycle:*** | 1 | 1 |

| ***Roadway #2: Orange Grove Rd*** | |
|---|---|
| ***Direction:*** | ***All*** |
| ***Auto:*** | 0 |
| ***Medium Truck:*** | 0 |
| ***Heavy Truck:*** | 0 |
| ***Bus:*** | 0 |
| ***Motorcycle:*** | 0 |

**Traffic Data**

| ***Roadway #3:*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

| ***Roadway #4:*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

| ***Roadway #5*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

***Notes:*** No traffic observed on Orange Grove Rd.; Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 64, posted speed = 65, avg. speed WB = 53mph, posted speed = 55mph; width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M11

Gannett Fleming, Inc.

**Address:**
2411 Timber Oak Dr.
Hillsborough, NC 27278

Meter Storage #: M11

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 3mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 13:20 |
| ***Stop:*** | 13:40 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 52.3 |

**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2: Orange Grove Rd*** | | |
|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | ***All*** | |
| ***Auto:*** | 542 | 582 | ***Auto:*** | 0 | |
| ***Medium Truck:*** | 17 | 20 | ***Medium Truck:*** | 0 | |
| ***Heavy Truck:*** | 54 | 72 | ***Heavy Truck:*** | 0 | |
| ***Bus:*** | 1 | 1 | ***Bus:*** | 0 | |
| ***Motorcycle:*** | 1 | 1 | ***Motorcycle:*** | 0 | |

| | ***Roadway #3:*** | | ***Roadway #4:*** | | ***Roadway #5*** | |
|---|---|---|---|---|---|---|
| ***Direction:*** | | | ***Direction:*** | | ***Direction:*** | |
| ***Auto:*** | | | ***Auto:*** | | ***Auto:*** | |
| ***Medium Truck:*** | | | ***Medium Truck:*** | | ***Medium Truck:*** | |
| ***Heavy Truck:*** | | | ***Heavy Truck:*** | | ***Heavy Truck:*** | |
| ***Bus:*** | | | ***Bus:*** | | ***Bus:*** | |
| ***Motorcycle:*** | | | ***Motorcycle:*** | | ***Motorcycle:*** | |

***Notes:*** No traffic observed on Orange Grove Rd.; Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 64, posted speed = 65, avg. speed WB = 53mph, posted speed = 55mph; width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M12

Gannett Fleming, Inc.

**Address:**
2411 Timber Oak Dr.
Hillsborough, NC 27278

Meter Storage #: M12

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 93F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 13:20 |
| ***Stop:*** | 13:40 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 51.1 |

**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2: Orange Grove Rd*** | |
|---|---|---|---|---|
| ***Direction:*** | ***EB*** | **WB** | ***Direction:*** | ***All*** |
| ***Auto:*** | 542 | 582 | ***Auto:*** | 0 |
| ***Medium Truck:*** | 17 | 20 | ***Medium Truck:*** | 0 |
| ***Heavy Truck:*** | 54 | 72 | ***Heavy Truck:*** | 0 |
| ***Bus:*** | 1 | 1 | ***Bus:*** | 0 |
| ***Motorcycle:*** | 1 | 1 | ***Motorcycle:*** | 0 |

| | ***Roadway #3:*** | ***Roadway #4:*** | ***Roadway #5*** |
|---|---|---|---|
| ***Direction:*** | | | |
| ***Auto:*** | | | |
| ***Medium Truck:*** | | | |
| ***Heavy Truck:*** | | | |
| ***Bus:*** | | | |
| ***Motorcycle:*** | | | |

***Notes:*** No traffic observed on Orange Grove Rd.; Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 64, posted speed = 65, avg. speed WB = 53mph, posted speed = 55mph; width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M13

Gannett Fleming, Inc.

**Address:**
2335 Blair Dr.
Hillsborough, NC 27278

Meter Storage #: M13

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 86F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 12:37 |
| ***Stop:*** | 12:57 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 66.6 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 541 | 582 |
| ***Medium Truck:*** | 11 | 14 |
| ***Heavy Truck:*** | 54 | 90 |
| ***Bus:*** | 1 | 6 |
| ***Motorcycle:*** | 3 | 1 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 61mph, posted speed = 65mph, avg./posted speed WB = 55mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M14

Gannett Fleming, Inc.

**Address:**
2334 Blair Dr.
Hillsborough, NC 27278

Meter Storage #: M14

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 86F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 12:37 |
| ***Stop:*** | 12:57 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 58.2 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 541 | 582 |
| ***Medium Truck:*** | 11 | 14 |
| ***Heavy Truck:*** | 54 | 90 |
| ***Bus:*** | 1 | 6 |
| ***Motorcycle:*** | 3 | 1 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 61mph, posted speed = 65mph, avg./posted speed WB = 55mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M15

Gannett Fleming, Inc.

**Address:**
2331 Blair Dr.
Hillsborough, NC 27278

Meter Storage #: M15

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 3* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 86F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 12:37 |
| ***Stop:*** | 12:57 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 58.5 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 541 | 582 |
| ***Medium Truck:*** | 11 | 14 |
| ***Heavy Truck:*** | 54 | 90 |
| ***Bus:*** | 1 | 6 |
| ***Motorcycle:*** | 3 | 1 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 61mph, posted speed = 65mph, avg./posted speed WB = 55mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M16

Gannett Fleming, Inc.

**Address:**
2338 Blair Dr.
Hillsborough, NC 27278

Meter Storage #: M16

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 86F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 12:37 |
| ***Stop:*** | 12:57 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 62.9 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 541 | 582 |
| ***Medium Truck:*** | 11 | 14 |
| ***Heavy Truck:*** | 54 | 90 |
| ***Bus:*** | 1 | 6 |
| ***Motorcycle:*** | 3 | 1 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 61mph, posted speed = 65mph, avg./posted speed WB = 55mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M17

Gannett Fleming, Inc.

**Address:**
3209 Old NC 86
Hillsborough, NC 27278

Meter Storage #: M17

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 85F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 15:10 |
| ***Stop:*** | 15:30 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 62.2 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 558 | 593 |
| ***Medium Truck:*** | 16 | 18 |
| ***Heavy Truck:*** | 29 | 81 |
| ***Bus:*** | 1 | 0 |
| ***Motorcycle:*** | 1 | 1 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 26 | 103 |
| ***Medium Truck:*** | 1 | 1 |
| ***Heavy Truck:*** | 0 | 1 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 84 | 26 |
| ***Medium Truck:*** | 1 | 1 |
| ***Heavy Truck:*** | 2 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: NC 86*** | | |
|---|---|---|
| ***Direction:*** | ***NB*** | ***SB*** |
| ***Auto:*** | 56 | 60 |
| ***Medium Truck:*** | 1 | 2 |
| ***Heavy Truck:*** | 0 | 1 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 60mph, avg. speed WB = 67mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 40mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M19

Gannett Fleming, Inc.

**Address:**
3210 Old NC 86
Hillsborough, NC 27278

Meter Storage #: M19

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 3* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 14:22 |
| ***Stop:*** | 14:42 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | NA |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 607 | 602 |
| ***Medium Truck:*** | 12 | 18 |
| ***Heavy Truck:*** | 40 | 46 |
| ***Bus:*** | 0 | 1 |
| ***Motorcycle:*** | 2 | 1 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 25 | 106 |
| ***Medium Truck:*** | 1 | 3 |
| ***Heavy Truck:*** | 3 | 1 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 105 | 26 |
| ***Medium Truck:*** | 1 | 3 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: NC 86*** | | |
|---|---|---|
| ***Direction:*** | ***NB*** | ***SB*** |
| ***Auto:*** | 74 | 62 |
| ***Medium Truck:*** | 3 | 2 |
| ***Heavy Truck:*** | 1 | 2 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Meter malfunction; Roadway #1: 2 lanes in each direction; Roadway #2: 1 lane in each direction
direction, width = 12ft, avg. speed both directions = 40mph; Meter malfunction
width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M20

Gannett Fleming, Inc.

**Address:**
3220 Old NC 86
Hillsborough, NC 27278

Meter Storage #: M20

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 14:22 |
| ***Stop:*** | 14:42 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 61.2 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 582 | 602 |
| ***Medium Truck:*** | 11 | 18 |
| ***Heavy Truck:*** | 37 | 46 |
| ***Bus:*** | 0 | 1 |
| ***Motorcycle:*** | 2 | 1 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 25 | 106 |
| ***Medium Truck:*** | 1 | 3 |
| ***Heavy Truck:*** | 3 | 1 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 105 | 26 |
| ***Medium Truck:*** | 1 | 3 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: NC 86*** | | |
|---|---|---|
| ***Direction:*** | ***NB*** | ***SB*** |
| ***Auto:*** | 74 | 62 |
| ***Medium Truck:*** | 3 | 2 |
| ***Heavy Truck:*** | 1 | 2 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 60mph, avg. speed WB = 67mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 40mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M21

Gannett Fleming, Inc.

**Address:**
3300 Old NC 86
Hillsborough, NC 27278

Meter Storage #: M21

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4229 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 14:22 |
| ***Stop:*** | 14:42 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 57.5 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 582 | 602 |
| ***Medium Truck:*** | 11 | 18 |
| ***Heavy Truck:*** | 37 | 46 |
| ***Bus:*** | 0 | 1 |
| ***Motorcycle:*** | 2 | 1 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 25 | 106 |
| ***Medium Truck:*** | 1 | 3 |
| ***Heavy Truck:*** | 3 | 1 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 105 | 26 |
| ***Medium Truck:*** | 1 | 3 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: NC 86*** | | |
|---|---|---|
| ***Direction:*** | ***NB*** | **SB** |
| ***Auto:*** | 74 | 62 |
| ***Medium Truck:*** | 3 | 2 |
| ***Heavy Truck:*** | 1 | 2 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 60mph, avg. speed WB = 67mph; Roadway #2 - #3: 1 lane in each direction, width = 12ft, avg. speed both directions = 40mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M23

Gannett Fleming, Inc.

**Address:**
648 Alice Loop
Hillsborough, NC 27278

Meter Storage #: M23

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 3* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 91F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 15:10 |
| ***Stop:*** | 15:30 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 62.4 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 558 | 593 |
| ***Medium Truck:*** | 16 | 18 |
| ***Heavy Truck:*** | 29 | 81 |
| ***Bus:*** | 1 | 0 |
| ***Motorcycle:*** | 1 | 1 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 58mph, avg. speed WB = 65
width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M24

Gannett Fleming, Inc.

**Address:**
649 Alice Loop
Hillsborough, NC 27278

Meter Storage #: M24

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 85F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 15:10 |
| ***Stop:*** | 15:30 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 58.1 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 558 | 593 |
| ***Medium Truck:*** | 16 | 18 |
| ***Heavy Truck:*** | 29 | 81 |
| ***Bus:*** | 1 | 0 |
| ***Motorcycle:*** | 1 | 1 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

**Traffic Data**

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 58mph, avg. speed WB = 65
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M25

Gannett Fleming, Inc.

**Address:**
1605 Cheyenne Dr.
Hillsborough, NC 27278

Meter Storage #: M25

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 94F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Sunny

**Run Time:** 20 mins
***Start:*** 16:25
***Stop:*** 16:45
***Duration:*** 20 mins
***Average LEQ*** 61.2

**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2:*** |
|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** |
| ***Auto:*** | 610 | 923 | ***Auto:*** |
| ***Medium Truck:*** | 12 | 10 | ***Medium Truck:*** |
| ***Heavy Truck:*** | 30 | 56 | ***Heavy Truck:*** |
| ***Bus:*** | 1 | 1 | ***Bus:*** |
| ***Motorcycle:*** | 0 | 2 | ***Motorcycle:*** |

| | ***Roadway #3:*** | ***Roadway #4:*** | ***Roadway #5*** |
|---|---|---|---|
| ***Direction:*** | | | ***Direction:*** |
| ***Auto:*** | | | ***Auto:*** |
| ***Medium Truck:*** | | | ***Medium Truck:*** |
| ***Heavy Truck:*** | | | ***Heavy Truck:*** |
| ***Bus:*** | | | ***Bus:*** |
| ***Motorcycle:*** | | | ***Motorcycle:*** |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 58mph, avg. speed WB = 65
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M26

Gannett Fleming, Inc.

**Address:**
1605 Cheyenne Dr.
Hillsborough, NC 27278

Meter Storage #: M26

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 3* ***Meter Calibration:*** *Before* ✓ *After* _____

**Weather:** ***Temperature:*** 94F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 16:25 |
| ***Stop:*** | 16:45 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 56.5 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 610 | 923 |
| ***Medium Truck:*** | 12 | 10 |
| ***Heavy Truck:*** | 30 | 56 |
| ***Bus:*** | 1 | 1 |
| ***Motorcycle:*** | 0 | 2 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 58mph, avg. speed WB = 65
width applies to all lanes in a road segment; at 4:33 pm resident was loading their car; and at 4:38pm slammed trunk of car

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M28

Gannett Fleming, Inc.

**Address:**
4334 Vallie High Ln.
Chapel Hill, NC 27516

Meter Storage #: M28

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4228 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 95F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 16:25 |
| ***Stop:*** | 16:45 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 52.3 |

**Traffic Data**

***Roadway #1: I40***

| ***Direction:*** | ***EB*** | ***WB*** |
|---|---|---|
| ***Auto:*** | 610 | 923 |
| ***Medium Truck:*** | 12 | 10 |
| ***Heavy Truck:*** | 30 | 56 |
| ***Bus:*** | 1 | 1 |
| ***Motorcycle:*** | 0 | 2 |

***Roadway #2: I40 Exit Ramp***

| ***Direction:*** | ***EB*** | ***WB*** |
|---|---|---|
| ***Auto:*** | 4 | 70 |
| ***Medium Truck:*** | 0 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

***Roadway #3: I40 Entrance Ramp***

| ***Direction:*** | ***EB*** | ***WB*** |
|---|---|---|
| ***Auto:*** | 37 | 9 |
| ***Medium Truck:*** | 1 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

***Roadway #4: New Hope Church***

| ***Direction:*** | ***EB*** | ***WB*** |
|---|---|---|
| ***Auto:*** | 39 | 74 |
| ***Medium Truck:*** | 1 | 3 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

***Roadway #5***

| ***Direction:*** | | |
|---|---|---|
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2 - #4: 1 lane in each direction, width = 12ft, avg. speed both lanes = 41mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M30

Gannett Fleming, Inc.

**Address:**
1201 New Hope Church Rd.
Chapel Hill, NC 27516

Meter Storage #: M30

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4229 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 95F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 16:25 |
| ***Stop:*** | 16:45 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 56.8 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 610 | 923 |
| ***Medium Truck:*** | 12 | 10 |
| ***Heavy Truck:*** | 30 | 56 |
| ***Bus:*** | 1 | 1 |
| ***Motorcycle:*** | 0 | 2 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 4 | 70 |
| ***Medium Truck:*** | 0 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 37 | 9 |
| ***Medium Truck:*** | 1 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: New Hope Church*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 39 | 74 |
| ***Medium Truck:*** | 1 | 3 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2 - #4: 1 lane in each direction, width = 12ft, avg. speed both lanes = 41mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M32

Gannett Fleming, Inc.

**Address:**
1315 New Hope Trc
Chapel Hill, NC 27516

Meter Storage #: M32

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4229 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 95F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 17:50 |
| ***Stop:*** | 18:10 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 57.7 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 656 | 791 |
| ***Medium Truck:*** | 11 | 17 |
| ***Heavy Truck:*** | 27 | 40 |
| ***Bus:*** | 0 | 3 |
| ***Motorcycle:*** | 1 | 2 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 7 | 54 |
| ***Medium Truck:*** | 0 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 38 | 7 |
| ***Medium Truck:*** | 1 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 1 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: New Hope Church*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 54 | 69 |
| ***Medium Truck:*** | 0 | 2 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 1 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2 - #4: 1 lane in each direction, width = 12ft, avg. speed both lanes = 41mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M33

Gannett Fleming, Inc.

**Address:**
6114 Meadowsweet Ln.
Chapel Hill, NC 27516

Meter Storage #: M33

**Type:** ☐ *Residential* ☐ *Commercial* ☑ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4229 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 95F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 17:50 |
| ***Stop:*** | 18:10 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 59.9 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 656 | 791 |
| ***Medium Truck:*** | 11 | 17 |
| ***Heavy Truck:*** | 27 | 40 |
| ***Bus:*** | 0 | 3 |
| ***Motorcycle:*** | 1 | 2 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 7 | 54 |
| ***Medium Truck:*** | 0 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 38 | 7 |
| ***Medium Truck:*** | 1 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 1 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: New Hope Church*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 54 | 69 |
| ***Medium Truck:*** | 0 | 2 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 1 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2 - #4: 1 lane in each direction, width = 12ft, avg. speed both lanes = 41mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/16/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M34

Gannett Fleming, Inc.

**Address:**
6114 Meadowsweet Ln.
Chapel Hill, NC 27516

Meter Storage #: M34

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 3* ***Meter Calibration:*** *Before* ✓ *After* _____

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 17:50 |
| ***Stop:*** | 18:10 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 53.8 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 656 | 791 |
| ***Medium Truck:*** | 11 | 17 |
| ***Heavy Truck:*** | 27 | 40 |
| ***Bus:*** | 0 | 3 |
| ***Motorcycle:*** | 1 | 2 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 7 | 54 |
| ***Medium Truck:*** | 0 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 38 | 7 |
| ***Medium Truck:*** | 1 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 1 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: New Hope Church*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 54 | 69 |
| ***Medium Truck:*** | 0 | 2 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 1 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2 - #4: 1 lane in each direction, width = 12ft, avg. speed both lanes = 41mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/17/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **Site ID:** | **M35** |

Gannett Fleming, Inc.

**Address:**
6027 Meadow Greer Rd.
Chapel Hill, NC 27516

Meter Storage #: M35

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***Rion 4*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 74F ***Wind Speed:*** 0mph - average ***Cloud Cover:*** Mostly Sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 8:00 |
| ***Stop:*** | 8:20 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 63.5 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | **EB** | **WB** |
| ***Auto:*** | 1107 | 553 |
| ***Medium Truck:*** | 20 | 20 |
| ***Heavy Truck:*** | 71 | 26 |
| ***Bus:*** | 2 | 1 |
| ***Motorcycle:*** | 1 | 0 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 65mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M36

Gannett Fleming, Inc.

**Address:**
6025 Meadow Greer Rd.
Chapel Hill, NC 27516

Meter Storage #: M36

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 74F ***Wind Speed:*** 0mph - average ***Cloud Cover:*** Mostly Sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 8:00 |
| ***Stop:*** | 8:20 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 57 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 1107 | 553 |
| ***Medium Truck:*** | 20 | 20 |
| ***Heavy Truck:*** | 71 | 26 |
| ***Bus:*** | 2 | 1 |
| ***Motorcycle:*** | 1 | 0 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

**Traffic Data**

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 65mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M37

Gannett Fleming, Inc.

**Address:**
6019 Meadow Greer Rd.
Chapel Hill, NC 27516

Meter Storage #: 7

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 74F ***Wind Speed:*** 0mph - average ***Cloud Cover:*** Mostly Sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 8:00 |
| ***Stop:*** | 8:20 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 54.3 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 1107 | 553 |
| ***Medium Truck:*** | 20 | 20 |
| ***Heavy Truck:*** | 71 | 26 |
| ***Bus:*** | 2 | 1 |
| ***Motorcycle:*** | 1 | 0 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

**Traffic Data**

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 65mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/17/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **Site ID:** | **M38** |

Gannett Fleming, Inc.

**Address:**
6211 New Jericho Rd.
Chapel Hill, NC 27516

Meter Storage #: M38

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***4229*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 76F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly Cloudy

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 9:14 |
| ***Stop:*** | 9:34 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 62.9 |

**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2:*** | | ***Roadway #3:*** | | ***Roadway #4:*** | | ***Roadway #5*** | |
|---|---|---|---|---|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | | ***Direction:*** | | ***Direction:*** | | ***Direction:*** | |
| ***Auto:*** | 707 | 610 | ***Auto:*** | | ***Auto:*** | | ***Auto:*** | | ***Auto:*** | |
| ***Medium Truck:*** | 23 | 17 | ***Medium Truck:*** | | ***Medium Truck:*** | | ***Medium Truck:*** | | ***Medium Truck:*** | |
| ***Heavy Truck:*** | 49 | 74 | ***Heavy Truck:*** | | ***Heavy Truck:*** | | ***Heavy Truck:*** | | ***Heavy Truck:*** | |
| ***Bus:*** | 1 | 7 | ***Bus:*** | | ***Bus:*** | | ***Bus:*** | | ***Bus:*** | |
| ***Motorcycle:*** | 0 | 1 | ***Motorcycle:*** | | ***Motorcycle:*** | | ***Motorcycle:*** | | ***Motorcycle:*** | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 65mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/17/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **Site ID:** | **M39** |

Gannett Fleming, Inc.

**Address:**
5705 Stoneywood Rd.
Chapel Hill, NC 27516

Meter Storage #: M39

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***4228*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 84F ***Wind Speed:*** 0mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 8:38 |
| ***Stop:*** | 8:58 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 58.7 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 974 | 564 |
| ***Medium Truck:*** | 34 | 22 |
| ***Heavy Truck:*** | 66 | 48 |
| ***Bus:*** | 2 | 0 |
| ***Motorcycle:*** | 3 | 0 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 65mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M40

Gannett Fleming, Inc.

**Address:**
5704 Hideaway Dr.
Chapel Hill, NC 27516

Meter Storage #: M40

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 84F ***Wind Speed:*** 0mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 8:38 |
| ***Stop:*** | 8:58 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 55.8 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 974 | 564 |
| ***Medium Truck:*** | 34 | 22 |
| ***Heavy Truck:*** | 66 | 48 |
| ***Bus:*** | 2 | 0 |
| ***Motorcycle:*** | 3 | 0 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 65mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/17/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **Site ID:** | **M41** |

Gannett Fleming, Inc.

**Address:**
5911 Hideaway Dr.
Chapel Hill, NC 27516

Meter Storage #: 9

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***4229*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 74F ***Wind Speed:*** 2mph - average ***Cloud Cover:*** Mostly sunny

| | |
|---|---|
| **Run Time:** | 20 mins |
| ***Start:*** | 8:38 |
| ***Stop:*** | 8:58 |
| ***Duration:*** | 20 mins |
| ***Average LEQ*** | 60.9 |

**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2:*** | |
|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | |
| ***Auto:*** | 974 | 564 | ***Auto:*** | |
| ***Medium Truck:*** | 34 | 22 | ***Medium Truck:*** | |
| ***Heavy Truck:*** | 66 | 48 | ***Heavy Truck:*** | |
| ***Bus:*** | 2 | 0 | ***Bus:*** | |
| ***Motorcycle:*** | 3 | 0 | ***Motorcycle:*** | |

| | ***Roadway #3:*** | ***Roadway #4:*** | ***Roadway #5*** |
|---|---|---|---|
| ***Direction:*** | | | |
| ***Auto:*** | | | |
| ***Medium Truck:*** | | | |
| ***Heavy Truck:*** | | | |
| ***Bus:*** | | | |
| ***Motorcycle:*** | | | |

***Notes:*** Vehicles visible through vegitation. Insect and bird noises throughout the measurement period. Roadway noise was primary noise source. ; Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 63mph width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/17/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **Site ID:** | **M42** |

Gannett Fleming, Inc.

**Address:**
6023 NC 86
Old Farm Mobile Home Park
Chapel Hill, NC 27514
Meter Storage #: M42

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 82F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 30 min. |
| ***Start:*** | 9:14 |
| ***Stop:*** | 9:44 |
| ***Duration:*** | 30 min. |
| ***Average LEQ*** | 56.2 |

**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2:*** | | |
|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | | ***WB*** | ***Direction:*** | |
| ***Auto:*** | 1066 | | 938 | ***Auto:*** | |
| ***Medium Truck:*** | 30 | | 32 | ***Medium Truck:*** | |
| ***Heavy Truck:*** | 78 | | 118 | ***Heavy Truck:*** | |
| ***Bus:*** | 1 | | 6 | ***Bus:*** | |
| ***Motorcycle:*** | 0 | | 1 | ***Motorcycle:*** | |

| | ***Roadway #3:*** | | ***Roadway #4:*** | | ***Roadway #5*** | |
|---|---|---|---|---|---|---|
| ***Direction:*** | | | ***Direction:*** | | ***Direction:*** | |
| ***Auto:*** | | | ***Auto:*** | | ***Auto:*** | |
| ***Medium Truck:*** | | | ***Medium Truck:*** | | ***Medium Truck:*** | |
| ***Heavy Truck:*** | | | ***Heavy Truck:*** | | ***Heavy Truck:*** | |
| ***Bus:*** | | | ***Bus:*** | | ***Bus:*** | |
| ***Motorcycle:*** | | | ***Motorcycle:*** | | ***Motorcycle:*** | |

***Notes:*** Vehicles visible through vegitation. Insect and bird noises throughout the measurement period. Roadway noise was primary noise source. ; Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 63mph width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/17/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **Site ID:** | **M43** |

Gannett Fleming, Inc.

**Address:**
6121 NC 86, Trailer 18
Old Farm Mobile Home Park
Chapel Hill, NC 27514
Meter Storage #: M43

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 82F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 9:14 |
| ***Stop:*** | 9:34 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 60.6 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | **WB** |
| ***Auto:*** | 707 | 610 |
| ***Medium Truck:*** | 23 | 17 |
| ***Heavy Truck:*** | 49 | 74 |
| ***Bus:*** | 1 | 7 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Vehicles visible through vegitation. Insect and bird noises throughout the measurement period. Roadway noise was primary noise source. ; Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 63mph width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/17/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **Site ID:** | **M44** |

Gannett Fleming, Inc.

**Address:**
2015 Clyde Rd.
Chapel Hill, NC 27514

Meter Storage #: M44

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***Rion 4*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 82F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 10:42 |
| ***Stop:*** | 11:02 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 65.2 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 636 | 605 |
| ***Medium Truck:*** | 15 | 29 |
| ***Heavy Truck:*** | 52 | 74 |
| ***Bus:*** | 2 | 3 |
| ***Motorcycle:*** | 0 | 3 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

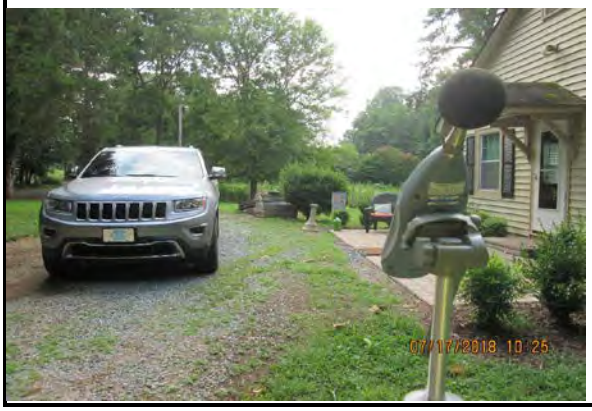
| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Vehicles visible through vegitation. Insect and bird noises throughout the measurement period. Roadway noise was primary noise source. ; Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 63mph width applies to all lanes in a road segment

**Site Sketch:**


# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M45

Gannett Fleming, Inc.

**Address:**
2017 Clyde Rd.
Chapel Hill, NC 27514

Meter Storage #: M45

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4229 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 82F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 10:42 |
| ***Stop:*** | 11:02 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 59.6 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 636 | 605 |
| ***Medium Truck:*** | 15 | 29 |
| ***Heavy Truck:*** | 52 | 74 |
| ***Bus:*** | 2 | 3 |
| ***Motorcycle:*** | 0 | 3 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

**Traffic Data**

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Vehicles visible through vegitation. Insect and bird noises throughout the measurement period. Roadway noise was primary noise source. ; Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 63mph width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M46

Gannett Fleming, Inc.

**Address:**
2113 Clyde Rd.
Chapel Hill, NC 27514

Meter Storage #: M46

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 82F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 10:42 |
| ***Stop:*** | 11:02 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 58.8 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 636 | 605 |
| ***Medium Truck:*** | 15 | 29 |
| ***Heavy Truck:*** | 52 | 74 |
| ***Bus:*** | 2 | 3 |
| ***Motorcycle:*** | 0 | 3 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

**Traffic Data**

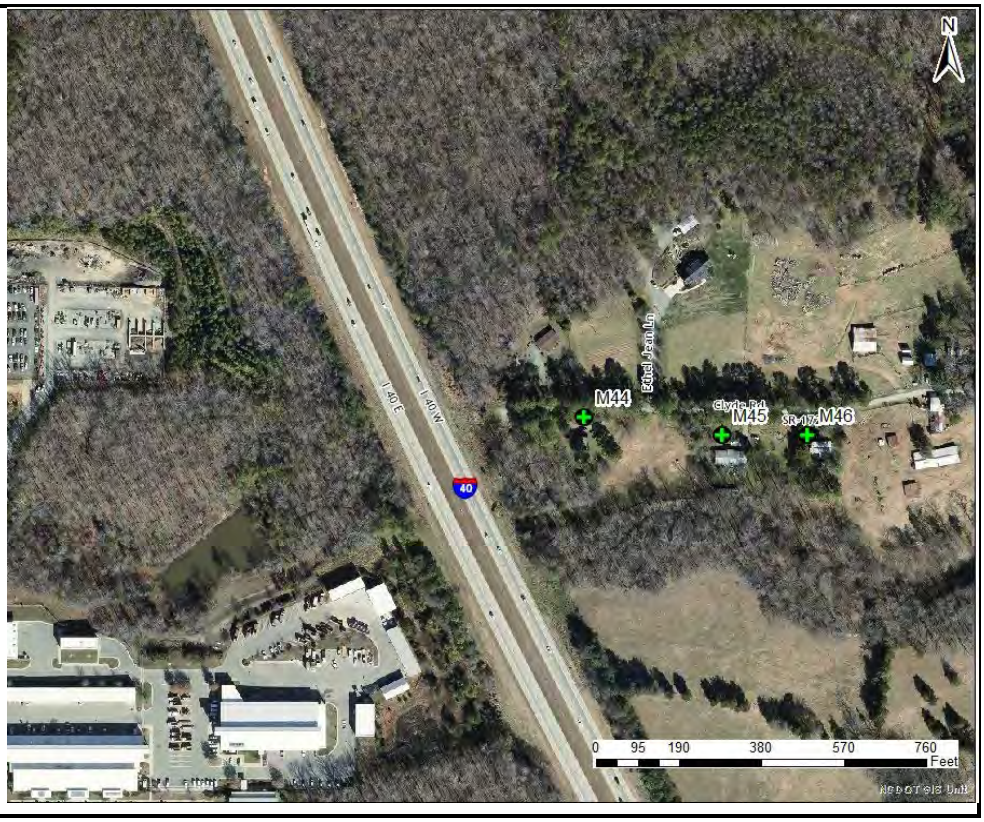
| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 65mph
width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M47

Gannett Fleming, Inc.

**Address:**
104 Groomsbridge Ct.
Chapel Hill, NC 27516

Meter Storage #: M47

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** *Before* ✓ *After* _____

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 3mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 12:12 |
| ***Stop:*** | 12:32 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 56.9 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 460 | 565 |
| ***Medium Truck:*** | 9 | 18 |
| ***Heavy Truck:*** | 50 | 77 |
| ***Bus:*** | 1 | 3 |
| ***Motorcycle:*** | 0 | 2 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 77 | 128 |
| ***Medium Truck:*** | 3 | 4 |
| ***Heavy Truck:*** | 0 | 6 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 139 | 78 |
| ***Medium Truck:*** | 4 | 3 |
| ***Heavy Truck:*** | 6 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: NC86*** | | |
|---|---|---|
| ***Direction:*** | ***SB*** | ***NB*** |
| ***Auto:*** | 261 | 280 |
| ***Medium Truck:*** | 7 | 9 |
| ***Heavy Truck:*** | 3 | 3 |
| ***Bus:*** | 1 | 2 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2 - #3: 1 main lane in each direction, width = 12ft, avg. speed all directions = 40mph; Roadway #4: 2 lanes in each direction, width = 12ft, avg. speed both directions = 44

width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M48

Gannett Fleming, Inc.

**Address:**
105 Groomsbridge Ct.
Chapel Hill, NC 27516

Meter Storage #: M48

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 3* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 3mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 12:12 |
| ***Stop:*** | 12:32 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 54.2 |

**Traffic Data**

| ***Roadway #1: I40*** | | | ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 460 | 565 | ***Auto:*** | 77 | 128 |
| ***Medium Truck:*** | 9 | 18 | ***Medium Truck:*** | 3 | 4 |
| ***Heavy Truck:*** | 50 | 77 | ***Heavy Truck:*** | 0 | 6 |
| ***Bus:*** | 1 | 3 | ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 2 | ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | | ***Roadway #4: NC86*** | | | ***Roadway #5*** | | |
|---|---|---|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | ***SB*** | ***NB*** | ***Direction:*** | | |
| ***Auto:*** | 139 | 78 | ***Auto:*** | 261 | 280 | ***Auto:*** | | |
| ***Medium Truck:*** | 4 | 3 | ***Medium Truck:*** | 7 | 9 | ***Medium Truck:*** | | |
| ***Heavy Truck:*** | 6 | 0 | ***Heavy Truck:*** | 3 | 3 | ***Heavy Truck:*** | | |
| ***Bus:*** | 0 | 0 | ***Bus:*** | 1 | 2 | ***Bus:*** | | |
| ***Motorcycle:*** | 0 | 0 | ***Motorcycle:*** | 0 | 0 | ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2 - #3: 1 main lane in each direction, width = 12ft, avg. speed all directions = 40mph; Roadway #4: 2 lanes in each direction, width = 12ft, avg. speed both directions = 44

width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M49

Gannett Fleming, Inc.

**Address:**
North Chapel Hill Baptist Church
7707 NC-86
Chapel Hill, NC 27614
Meter Storage #: M49

**Type:** ☑ *Residential* ☐ *Commercial* ☑ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 84F ***Wind Speed:*** 0.5mph - average ***Cloud Cover:*** Partly Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 12:12 |
| ***Stop:*** | 12:32 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 59.9 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 460 | 565 |
| ***Medium Truck:*** | 9 | 18 |
| ***Heavy Truck:*** | 50 | 77 |
| ***Bus:*** | 1 | 3 |
| ***Motorcycle:*** | 0 | 2 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 77 | 128 |
| ***Medium Truck:*** | 3 | 4 |
| ***Heavy Truck:*** | 0 | 6 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 139 | 78 |
| ***Medium Truck:*** | 4 | 3 |
| ***Heavy Truck:*** | 6 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: NC86*** | | |
|---|---|---|
| ***Direction:*** | ***SB*** | ***NB*** |
| ***Auto:*** | 261 | 280 |
| ***Medium Truck:*** | 7 | 9 |
| ***Heavy Truck:*** | 3 | 3 |
| ***Bus:*** | 1 | 2 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2 - #3: 1 main lane in each direction, width = 12ft, avg. speed all directions = 40mph; Roadway #4: 2 lanes in each direction, width = 12ft, avg. speed both directions = 44
width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M50B

Gannett Fleming, Inc.

**Address:**
1112 Dumfries Lane
Chapel Hill, NC 27514

Meter Storage #: 1011

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 82F ***Wind Speed:*** 0.5mph - average ***Cloud Cover:*** Mostly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 11:26 |
| ***Stop:*** | 11:46 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 56.7 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 506 | 530 |
| ***Medium Truck:*** | 11 | 9 |
| ***Heavy Truck:*** | 66 | 85 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 86 | 98 |
| ***Medium Truck:*** | 0 | 2 |
| ***Heavy Truck:*** | 0 | 8 |
| ***Bus:*** | 0 | 1 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 142 | 82 |
| ***Medium Truck:*** | 4 | 2 |
| ***Heavy Truck:*** | 4 | 3 |
| ***Bus:*** | 0 | 1 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: Whitfield Rd.*** | | |
|---|---|---|
| ***Direction:*** | ***All*** | |
| ***Auto:*** | 76 | |
| ***Medium Truck:*** | 3 | |
| ***Heavy Truck:*** | 1 | |
| ***Bus:*** | 0 | |
| ***Motorcycle:*** | 0 | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 63mph; Roadway #2 - #3: 1 main lane in each direction, width = 12ft, avg. speed all directions = 42mph; Roadway #4: 1 lane in each direction, width = 12ft, avg. speed in each direction = 42mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M50A

Gannett Fleming, Inc.

**Address:**
1112 Dumfries Lane
Chapel Hill, NC 27514

Meter Storage #: M50A

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4228 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 82F ***Wind Speed:*** 0.5mph - average ***Cloud Cover:*** Mostly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 11:26 |
| ***Stop:*** | 11:46 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 60.8 |

**Traffic Data**

***Roadway #1: I40***

| *Direction:* | *EB* | *WB* |
|---|---|---|
| *Auto:* | 506 | 530 |
| *Medium Truck:* | 11 | 9 |
| *Heavy Truck:* | 66 | 85 |
| *Bus:* | 0 | 0 |
| *Motorcycle:* | 0 | 0 |

***Roadway #2: I40 Exit Ramp***

| *Direction:* | *EB* | *WB* |
|---|---|---|
| *Auto:* | 86 | 98 |
| *Medium Truck:* | 0 | 2 |
| *Heavy Truck:* | 0 | 8 |
| *Bus:* | 0 | 1 |
| *Motorcycle:* | 0 | 1 |

***Roadway #3: I40 Entrance Ramp***

| *Direction:* | *EB* | *WB* |
|---|---|---|
| *Auto:* | 142 | 82 |
| *Medium Truck:* | 4 | 2 |
| *Heavy Truck:* | 4 | 3 |
| *Bus:* | 0 | 1 |
| *Motorcycle:* | 0 | 0 |

***Roadway #4: Whitfield Rd.***

| *Direction:* | *All* | |
|---|---|---|
| *Auto:* | 76 | |
| *Medium Truck:* | 3 | |
| *Heavy Truck:* | 1 | |
| *Bus:* | 0 | |
| *Motorcycle:* | 0 | |

***Roadway #5***

| *Direction:* | | |
|---|---|---|
| *Auto:* | | |
| *Medium Truck:* | | |
| *Heavy Truck:* | | |
| *Bus:* | | |
| *Motorcycle:* | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 63mph; Roadway #2 - #3: 1 main lane in each direction, width = 12ft, avg. speed all directions = 42mph; Roadway #4: 1 lane in each direction, width = 12ft, avg. speed in each direction = 42mph; house built after aerial photo taken, was present during measurement width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M51

Gannett Fleming, Inc.

**Address:**
7120 Dumfries Lane
Chapel Hill, NC 27514

Meter Storage #: M51

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4229 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 82F ***Wind Speed:*** 0.5mph - average ***Cloud Cover:*** Mostly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 11:26 |
| ***Stop:*** | 11:46 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 55.5 |

**Traffic Data**

| ***Roadway #1: I40*** | | | ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 506 | 530 | ***Auto:*** | 86 | 98 |
| ***Medium Truck:*** | 11 | 9 | ***Medium Truck:*** | 0 | 2 |
| ***Heavy Truck:*** | 66 | 85 | ***Heavy Truck:*** | 0 | 8 |
| ***Bus:*** | 0 | 0 | ***Bus:*** | 0 | 1 |
| ***Motorcycle:*** | 0 | 0 | ***Motorcycle:*** | 0 | 1 |

| ***Roadway #3: I40 Entrance Ramp*** | | | ***Roadway #4: Whitfield Rd.*** | | | ***Roadway #5*** | | |
|---|---|---|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | ***All*** | | ***Direction:*** | | |
| ***Auto:*** | 142 | 82 | ***Auto:*** | 76 | | ***Auto:*** | | |
| ***Medium Truck:*** | 4 | 2 | ***Medium Truck:*** | 3 | | ***Medium Truck:*** | | |
| ***Heavy Truck:*** | 4 | 3 | ***Heavy Truck:*** | 1 | | ***Heavy Truck:*** | | |
| ***Bus:*** | 0 | 1 | ***Bus:*** | 0 | | ***Bus:*** | | |
| ***Motorcycle:*** | 0 | 0 | ***Motorcycle:*** | 0 | | ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 63mph; Roadway #2 - #3: 1 main lane in each direction, width = 12ft, avg. speed all directions = 42mph; Roadway #4: 1 lane in each direction, width = 12ft, avg. speed in each direction = 42mph; intermettient insect noise occasionally masks highway, highway is the primary noise source for the majority of the measurement; width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M52

Gannett Fleming, Inc.

**Address:**
200 Perkins Drive
Chapel Hill, NC 27514

Meter Storage #: M52

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 84F ***Wind Speed:*** 3mph - average ***Cloud Cover:*** Mostly Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 12:12 |
| ***Stop:*** | 12:32 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 64.5 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 460 | 565 |
| ***Medium Truck:*** | 9 | 18 |
| ***Heavy Truck:*** | 50 | 77 |
| ***Bus:*** | 1 | 3 |
| ***Motorcycle:*** | 0 | 2 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 77 | 128 |
| ***Medium Truck:*** | 3 | 4 |
| ***Heavy Truck:*** | 0 | 6 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 139 | 78 |
| ***Medium Truck:*** | 4 | 3 |
| ***Heavy Truck:*** | 6 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: NC86*** | | |
|---|---|---|
| ***Direction:*** | ***SB*** | ***NB*** |
| ***Auto:*** | 261 | 280 |
| ***Medium Truck:*** | 7 | 9 |
| ***Heavy Truck:*** | 3 | 3 |
| ***Bus:*** | 1 | 2 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Bird sounds. Moved site from Harris Teeter to adjacent apartment development. Intermittent insect noise at new site.
Vehicles on the interstate are easily visible through the trees and primary noise source was the highway.
Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB=63mph; Roadway #2 - #3: 1 main lane in each direction, width = 12ft, avg. speed = 42mph each direction; Roadway #4: 1 lane in each direction, width = 12ft, avg. speed each direction = 44mph

**Site Sketch:** width applies to all lanes in a road segment

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**Site ID:** M53

Gannett Fleming, Inc.

**Address:**
155 Schultz St.
Chapel Hill, NC 27514

Meter Storage #: M53

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Mostly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 12:12 |
| ***Stop:*** | 12:32 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 56.5 |

**Traffic Data**

| ***Roadway #1: I40*** | ***EB*** | ***WB*** |
|---|---|---|
| ***Auto:*** | 800 | 850 |
| ***Medium Truck:*** | 26 | 25 |
| ***Heavy Truck:*** | 43 | 72 |
| ***Bus:*** | 2 | 0 |
| ***Motorcycle:*** | 0 | 2 |

| ***Roadway #2: Erwin*** | ***EB*** | ***WB*** |
|---|---|---|
| ***Auto:*** | 20 | 23 |
| ***Medium Truck:*** | 0 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 64mph; Roadway #2: 1 lane each direction, width = 12ft, avg. speed both directions = 45mph; Roadway #3: 1 main lane each direction, width = 12ft, avg. speed both directions 40mph

width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**M54**

Gannett Fleming, Inc.

**Address:**
149 Schultz St.
Chapel Hill, NC 27514

Meter Storage #: M54

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Mostly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 12:12 |
| ***Stop:*** | 12:32 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 53.7 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 800 | 850 |
| ***Medium Truck:*** | 26 | 25 |
| ***Heavy Truck:*** | 43 | 72 |
| ***Bus:*** | 2 | 0 |
| ***Motorcycle:*** | 0 | 2 |

| ***Roadway #2: Erwin*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 20 | 23 |
| ***Medium Truck:*** | 0 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

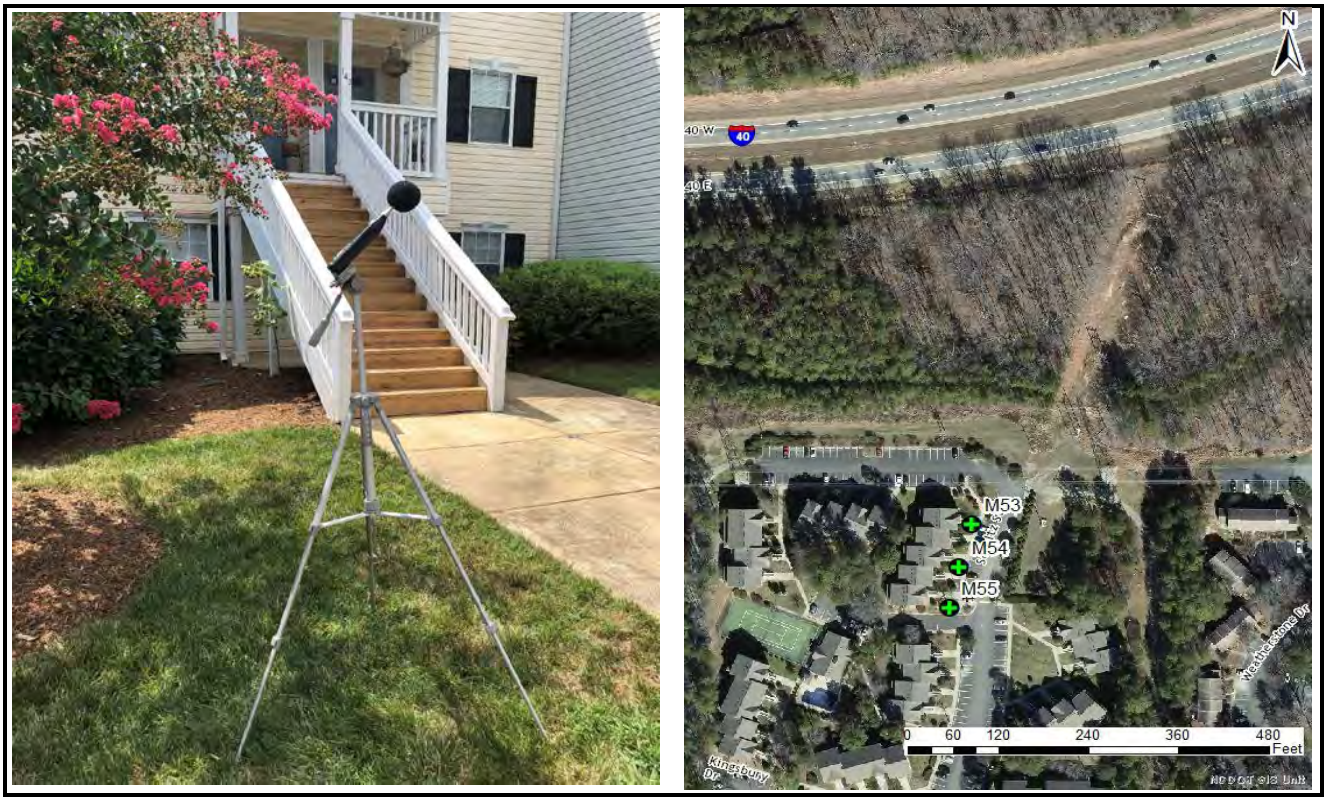
| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 64mph; Roadway #2: 1 lane each direction, width = 12ft, avg. speed both directions = 45mph; Roadway #3: 1 main lane each direction, width = 12ft, avg. speed both directions 40mph

width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**M55**

Gannett Fleming, Inc.

**Address:**
133 Schultz St.
Chapel Hill, NC 27514

Meter Storage #: M55

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other*

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After***

**Weather:** ***Temperature:*** 90F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Mostly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 12:12 |
| ***Stop:*** | 12:32 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 51.4 |

**Traffic Data**

| | *Roadway #1: I40* | | *Roadway #2: Erwin* | |
|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 800 | 850 | ***Auto:*** | 20 | 23 |
| ***Medium Truck:*** | 26 | 25 | ***Medium Truck:*** | 0 | 0 |
| ***Heavy Truck:*** | 43 | 72 | ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 2 | 0 | ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 2 | ***Motorcycle:*** | 0 | 0 |

| | *Roadway #3: I40 Entrance Ramp* | | *Roadway #4:* | | *Roadway #5* | |
|---|---|---|---|---|---|---|
| ***Direction:*** | | | ***Direction:*** | | ***Direction:*** | |
| ***Auto:*** | | | ***Auto:*** | | ***Auto:*** | |
| ***Medium Truck:*** | | | ***Medium Truck:*** | | ***Medium Truck:*** | |
| ***Heavy Truck:*** | | | ***Heavy Truck:*** | | ***Heavy Truck:*** | |
| ***Bus:*** | | | ***Bus:*** | | ***Bus:*** | |
| ***Motorcycle:*** | | | ***Motorcycle:*** | | ***Motorcycle:*** | |

***Notes:*** Roadway #1: 2 lanes each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 64mph; Roadway #2: 1 lane each direction, width = 12ft, avg. speed both directions = 45mph; Roadway #3: 1 main lane each direction, width = 12ft, avg. speed both directions 40mph

width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**M56**

Gannett Fleming, Inc.

**Address:**
870 Weaver Dairy Rd.
Chapel Hill, NC 27514

Meter Storage #: M56

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other*

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After***

**Weather:** ***Temperature:*** 93F ***Wind Speed:*** 3mph - average ***Cloud Cover:*** Partly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 15:09 |
| ***Stop:*** | 15:29 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 54.7 |

**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2: Erwin*** | |
|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***EB*** | ***WB*** |
| ***Auto:*** | 800 | 850 | 20 | 23 |
| ***Medium Truck:*** | 26 | 25 | 0 | 0 |
| ***Heavy Truck:*** | 43 | 72 | 0 | 0 |
| ***Bus:*** | 2 | 0 | 0 | 0 |
| ***Motorcycle:*** | 0 | 2 | 0 | 0 |

| | ***Roadway #3: I40 Entrance Ramp*** | ***Roadway #4:*** | ***Roadway #5*** |
|---|---|---|---|
| ***Direction:*** | | | |
| ***Auto:*** | | | |
| ***Medium Truck:*** | | | |
| ***Heavy Truck:*** | | | |
| ***Bus:*** | | | |
| ***Motorcycle:*** | | | |

***Notes:*** Roadway #1: 2 lanes each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 64mph; Roadway #2: 1 lane each direction, width = 12ft, avg. speed both directions = 45mph; Roadway #3: 1 main lane each direction, width = 12ft, avg. speed both directions 40mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/18/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **M57** | |

Gannett Fleming, Inc.

**Address:**
Carol Woods Retirement Comm.
750 Weaver Dairy Rd.
Chapel Hill, NC 27514
Meter Storage #: M57

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***4229*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 72F ***Wind Speed:*** 2mph - average ***Cloud Cover:*** Partly Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 7:51 |
| ***Stop:*** | 8:11 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 64.6 |

| | ***Roadway #1: I40*** | | ***Roadway #2: Sunrise Rd*** | |
|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | ***All*** |
| ***Auto:*** | 1177 | 634 | ***Auto:*** | 96 |
| ***Medium Truck:*** | 29 | 18 | ***Medium Truck:*** | 0 |
| ***Heavy Truck:*** | 84 | 45 | ***Heavy Truck:*** | 0 |
| ***Bus:*** | 2 | 2 | ***Bus:*** | 0 |
| ***Motorcycle:*** | 1 | 1 | ***Motorcycle:*** | 0 |

**Traffic Data**

| | ***Roadway #3:*** | ***Roadway #4:*** | ***Roadway #5*** |
|---|---|---|---|
| ***Direction:*** | | | |
| ***Auto:*** | | | |
| ***Medium Truck:*** | | | |
| ***Heavy Truck:*** | | | |
| ***Bus:*** | | | |
| ***Motorcycle:*** | | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 64mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 45mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**M58**

Gannett Fleming, Inc.

**Address:**
111 Foxridge Rd.
Chapel Hill, NC 27514

Meter Storage #: M58

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 88F ***Wind Speed:*** 3mph - average ***Cloud Cover:*** Partly sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 13:06 |
| ***Stop:*** | 13:26 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 64.2 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 699 | 531 |
| ***Medium Truck:*** | 22 | 19 |
| ***Heavy Truck:*** | 55 | 49 |
| ***Bus:*** | 8 | 1 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

**Traffic Data**

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/17/2018
**Project:** I-40
**Job Number:** I-3306A
**M59**

Gannett Fleming, Inc.

**Address:**
112 Foxridge Rd.
Chapel Hill, NC 27514

Meter Storage #: M59

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other*

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After***

**Weather:** ***Temperature:*** 88F ***Wind Speed:*** 3mph - average ***Cloud Cover:*** Partly sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 13:06 |
| ***Stop:*** | 13:26 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 60.2 |

**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2:*** | | ***Roadway #3: I40 Entrance Ramp*** | | ***Roadway #4:*** | | ***Roadway #5*** | |
|---|---|---|---|---|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | | ***Direction:*** | | ***Direction:*** | | ***Direction:*** | |
| ***Auto:*** | 699 | 531 | ***Auto:*** | | ***Auto:*** | | ***Auto:*** | | ***Auto:*** | |
| ***Medium Truck:*** | 22 | 19 | ***Medium Truck:*** | | ***Medium Truck:*** | | ***Medium Truck:*** | | ***Medium Truck:*** | |
| ***Heavy Truck:*** | 55 | 49 | ***Heavy Truck:*** | | ***Heavy Truck:*** | | ***Heavy Truck:*** | | ***Heavy Truck:*** | |
| ***Bus:*** | 8 | 1 | ***Bus:*** | | ***Bus:*** | | ***Bus:*** | | ***Bus:*** | |
| ***Motorcycle:*** | 0 | 0 | ***Motorcycle:*** | | ***Motorcycle:*** | | ***Motorcycle:*** | | ***Motorcycle:*** | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | 07/18/2018 |
| **Project:** | I-40 |
| **Job Number:** | I-3306A |
| **M61** | |

Gannett Fleming, Inc.

**Address:**
1023 Northridge Ln.
Chapel Hill, NC 27514

Meter Storage #: M61

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 3* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 75F ***Wind Speed:*** 0mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 7:51 |
| ***Stop:*** | 8:11 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 61.4 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 1177 | 634 |
| ***Medium Truck:*** | 29 | 18 |
| ***Heavy Truck:*** | 84 | 45 |
| ***Bus:*** | 2 | 2 |
| ***Motorcycle:*** | 1 | 1 |

| ***Roadway #2: Sunrise Rd*** | |
|---|---|
| ***Direction:*** | ***All*** |
| ***Auto:*** | 96 |
| ***Medium Truck:*** | 0 |
| ***Heavy Truck:*** | 0 |
| ***Bus:*** | 0 |
| ***Motorcycle:*** | 0 |

**Traffic Data**

| ***Roadway #3:*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

| ***Roadway #4:*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

| ***Roadway #5*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 53mph, avg. speed WB = 64mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 45mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/18/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **M62** | |

Gannett Fleming, Inc.

**Address:**
1023 Northridge Ln.
Chapel Hill, NC 27514

Meter Storage #: M62

**Type:** ☑ **Residential** ☐ **Commercial** ☐ **Religion** ☐ **Educational** ☐ **Other** _____

**Meter Number:** **Rion 3** **Meter Calibration:** **Before** ✓ **After** _____

**Weather:** ***Temperature:*** 75F ***Wind Speed:*** 0mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| **Start:** | 7:51 |
| **Stop:** | 8:11 |
| **Duration:** | 20 min. |
| **Average LEQ** | 60.5 |

| **Roadway #1: I40** | | |
|---|---|---|
| **Direction:** | **EB** | **WB** |
| **Auto:** | 1177 | 634 |
| **Medium Truck:** | 29 | 18 |
| **Heavy Truck:** | 84 | 45 |
| **Bus:** | 2 | 2 |
| **Motorcycle:** | 1 | 1 |

| **Roadway #2: Sunrise Rd** | |
|---|---|
| **Direction:** | **All** |
| **Auto:** | 96 |
| **Medium Truck:** | 0 |
| **Heavy Truck:** | 0 |
| **Bus:** | 0 |
| **Motorcycle:** | 0 |

**Traffic Data**

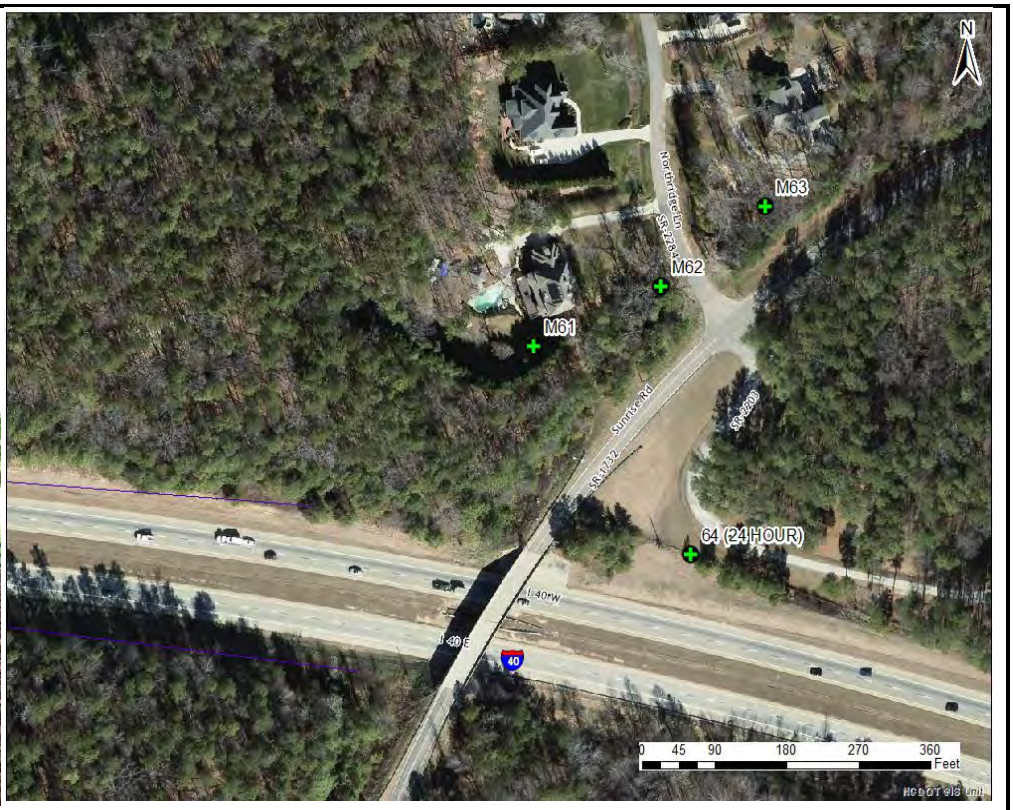
| **Roadway #3:** | |
|---|---|
| **Direction:** | |
| **Auto:** | |
| **Medium Truck:** | |
| **Heavy Truck:** | |
| **Bus:** | |
| **Motorcycle:** | |

| **Roadway #4:** | |
|---|---|
| **Direction:** | |
| **Auto:** | |
| **Medium Truck:** | |
| **Heavy Truck:** | |
| **Bus:** | |
| **Motorcycle:** | |

| **Roadway #5** | |
|---|---|
| **Direction:** | |
| **Auto:** | |
| **Medium Truck:** | |
| **Heavy Truck:** | |
| **Bus:** | |
| **Motorcycle:** | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 53mph, avg. speed WB = 64mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 45mph
width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/18/2018
**Project:** I-40
**Job Number:** I-3306A
**M63**

Gannett Fleming, Inc.

**Address:**
1024 Northridge Ln.
Chapel Hill, NC 27514

Meter Storage #: M63

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 75F ***Wind Speed:*** 0mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 7:51 |
| ***Stop:*** | 8:11 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 60.8 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 1177 | 634 |
| ***Medium Truck:*** | 29 | 18 |
| ***Heavy Truck:*** | 84 | 45 |
| ***Bus:*** | 2 | 2 |
| ***Motorcycle:*** | 1 | 1 |

| ***Roadway #2: Sunrise Rd*** | |
|---|---|
| ***Direction:*** | ***All*** |
| ***Auto:*** | 96 |
| ***Medium Truck:*** | 0 |
| ***Heavy Truck:*** | 0 |
| ***Bus:*** | 0 |
| ***Motorcycle:*** | 0 |

**Traffic Data**

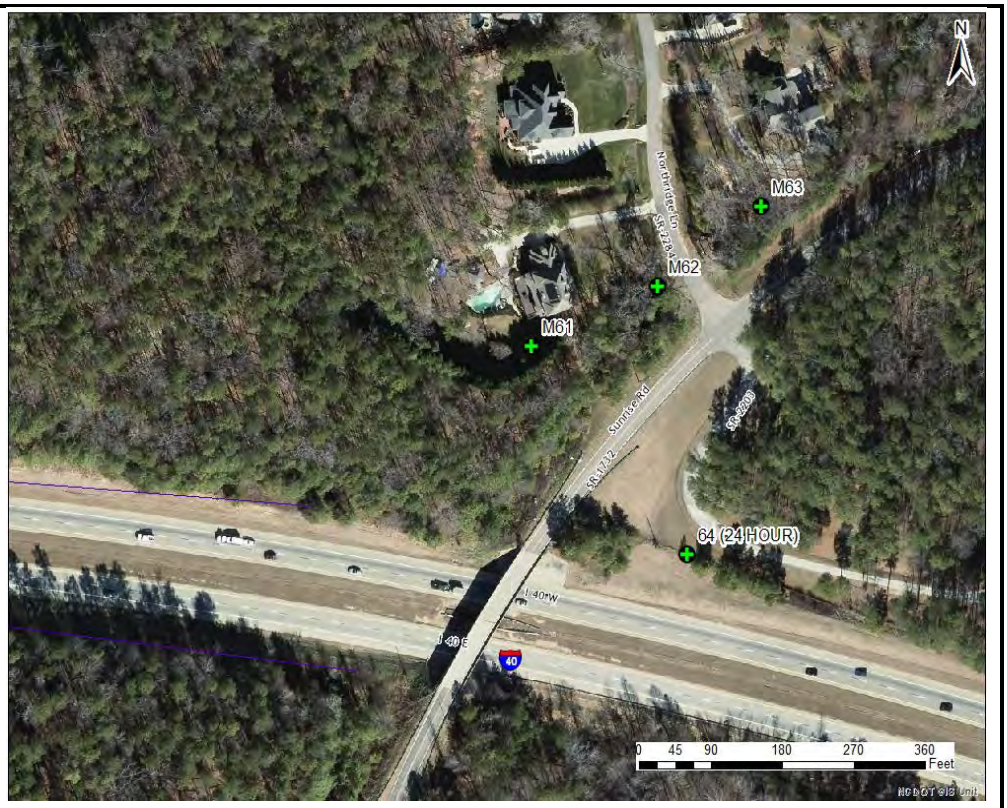
| ***Roadway #3:*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

| ***Roadway #4:*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

| ***Roadway #5*** | |
|---|---|
| ***Direction:*** | |
| ***Auto:*** | |
| ***Medium Truck:*** | |
| ***Heavy Truck:*** | |
| ***Bus:*** | |
| ***Motorcycle:*** | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 53mph, avg. speed WB = 64mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 45mph
width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/18/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **M65** | |

Gannett Fleming, Inc.

**Address:**
4002 Sweeten Creek Rd.
Chapel Hill, NC 27514

Meter Storage #: M65

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***Rion 3*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 79F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 9:46 |
| ***Stop:*** | 10:06 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 61.1 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 721 | 727 |
| ***Medium Truck:*** | 20 | 28 |
| ***Heavy Truck:*** | 97 | 84 |
| ***Bus:*** | 0 | 5 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

**Traffic Data**

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 53mph, avg. speed WB = 64mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 45mph
width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/18/2018
**Project:** I-40
**Job Number:** I-3306A
**M66**

Gannett Fleming, Inc.

**Address:**
101 Landing Dr.
Chapel Hill, NC 27514

Meter Storage #: M66

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 79F ***Wind Speed:*** 1mph -average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 9:46 |
| ***Stop:*** | 10:06 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 52.9 |

**Traffic Data**

| ***Roadway #1: I40*** | ***EB*** | ***WB*** |
|---|---|---|
| ***Auto:*** | 721 | 727 |
| ***Medium Truck:*** | 20 | 28 |
| ***Heavy Truck:*** | 97 | 84 |
| ***Bus:*** | 0 | 5 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #2:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 65mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/18/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **M67** | |

Gannett Fleming, Inc.

**Address:**
103 Landing Dr.
Chapel Hill, NC 27514

Meter Storage #: M67

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***Rion 4*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 79F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 9:46 |
| ***Stop:*** | 10:06 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 49.6 |

**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2:*** | | ***Roadway #3:*** | | ***Roadway #4:*** | | ***Roadway #5*** | |
|---|---|---|---|---|---|---|---|---|---|---|
| ***Direction:*** | **EB** | **WB** | ***Direction:*** | | ***Direction:*** | | ***Direction:*** | | ***Direction:*** | |
| ***Auto:*** | 721 | 727 | ***Auto:*** | | ***Auto:*** | | ***Auto:*** | | ***Auto:*** | |
| ***Medium Truck:*** | 20 | 28 | ***Medium Truck:*** | | ***Medium Truck:*** | | ***Medium Truck:*** | | ***Medium Truck:*** | |
| ***Heavy Truck:*** | 97 | 84 | ***Heavy Truck:*** | | ***Heavy Truck:*** | | ***Heavy Truck:*** | | ***Heavy Truck:*** | |
| ***Bus:*** | 0 | 5 | ***Bus:*** | | ***Bus:*** | | ***Bus:*** | | ***Bus:*** | |
| ***Motorcycle:*** | 0 | 1 | ***Motorcycle:*** | | ***Motorcycle:*** | | ***Motorcycle:*** | | ***Motorcycle:*** | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 55mph, avg. speed WB = 65mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/18/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **M68A** | |

Gannett Fleming, Inc.

**Address:**
7300 Mayse Dr.
Chapel Hill, NC 27514

Meter Storage #: M68A

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***Rion 3*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 78F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 8:40 |
| ***Stop:*** | 9:00 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 58.5 |

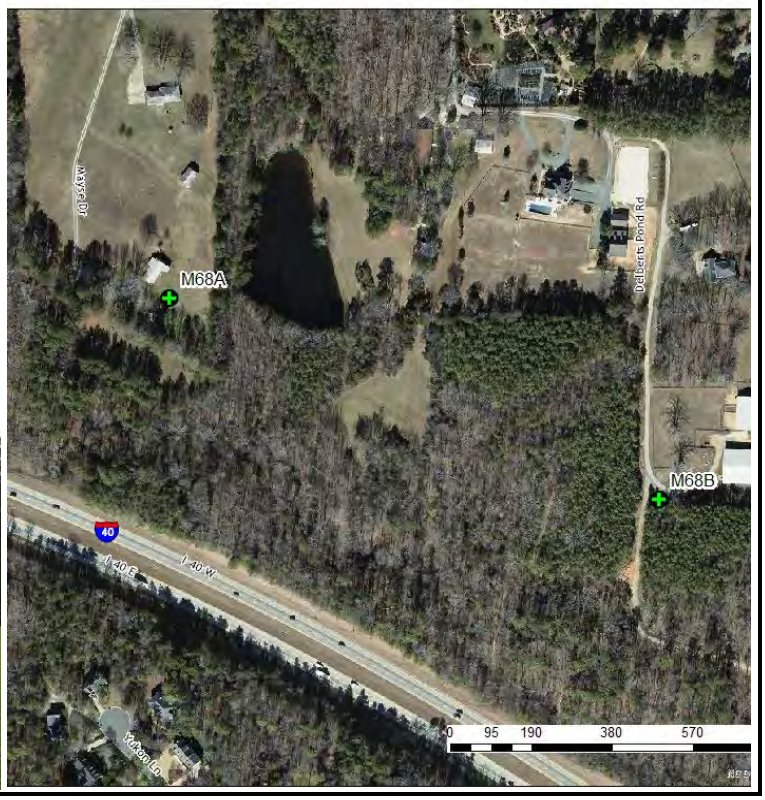
**Traffic Data**

| | ***Roadway #1: I40*** | | ***Roadway #2: Erwin Rd.*** | |
|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***EB*** | ***WB*** |
| ***Auto:*** | 969 | 704 | 98 | 93 |
| ***Medium Truck:*** | 34 | 29 | 1 | 0 |
| ***Heavy Truck:*** | 52 | 54 | 0 | 0 |
| ***Bus:*** | 1 | 0 | 0 | 0 |
| ***Motorcycle:*** | 1 | 1 | 0 | 0 |

| | ***Roadway #3:*** | ***Roadway #4:*** | ***Roadway #5*** |
|---|---|---|---|
| ***Direction:*** | | | |
| ***Auto:*** | | | |
| ***Medium Truck:*** | | | |
| ***Heavy Truck:*** | | | |
| ***Bus:*** | | | |
| ***Motorcycle:*** | | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 63mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 45mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/18/2018
**Project:** I-40
**Job Number:** I-3306A
**M68B**

Gannett Fleming, Inc.

**Address:**
7304 Delberts Pond Rd.
Chapel Hill, NC 27516

Meter Storage #: M68B

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4228* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 78F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Partly cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 8:40 |
| ***Stop:*** | 9:00 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 52.3 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 969 | 704 |
| ***Medium Truck:*** | 34 | 29 |
| ***Heavy Truck:*** | 52 | 54 |
| ***Bus:*** | 1 | 0 |
| ***Motorcycle:*** | 1 | 1 |

| ***Roadway #2: Erwin Rd.*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 98 | 93 |
| ***Medium Truck:*** | 1 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

**Traffic Data**

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 54mph, avg. speed WB = 63mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 45mph; 2 golf carts and one car drove by during measurements

width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/18/2018
**Project:** I-40
**Job Number:** I-3306A
**M70**

Gannett Fleming, Inc.

**Address:**
4629 Dry Creek Rd.
Durham, NC 27707

Meter Storage #: M70

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *4229* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 76F ***Wind Speed:*** 1mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 30 min. |
| ***Start:*** | 8:35 |
| ***Stop:*** | 9:05 |
| ***Duration:*** | 30 min. |
| ***Average LEQ*** | 58.6 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 969 | 704 |
| ***Medium Truck:*** | 34 | 29 |
| ***Heavy Truck:*** | 52 | 54 |
| ***Bus:*** | 1 | 0 |
| ***Motorcycle:*** | 1 | 1 |

| ***Roadway #2: Erwin Rd.*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 98 | 93 |
| ***Medium Truck:*** | 1 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

**Traffic Data**

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** At 8:39am there was an engine compression brake. At 8:45am small dogs were barking at a trailer.
Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2: 1 lane in each direction,
width = 12ft, avg. speed both directions = 44mph
width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

| | |
|---|---|
| **Date:** | **07/18/2018** |
| **Project:** | **I-40** |
| **Job Number:** | **I-3306A** |
| **M71** | |

Gannett Fleming, Inc.

**Address:**
390 Erwin Rd.
Chapel Hill, NC 27514

Meter Storage #: M71

**Type:** ☑ ***Residential*** ☐ ***Commercial*** ☐ ***Religion*** ☐ ***Educational*** ☐ ***Other*** _____

***Meter Number:*** ***4229*** ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 77F ***Wind Speed:*** 3mph - average ***Cloud Cover:*** Cloudy

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 9:46 |
| ***Stop:*** | 10:06 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 62.8 |

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 721 | 727 |
| ***Medium Truck:*** | 20 | 28 |
| ***Heavy Truck:*** | 97 | 84 |
| ***Bus:*** | 0 | 5 |
| ***Motorcycle:*** | 0 | 1 |

| ***Roadway #2: Erwin Rd.*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 59 | 59 |
| ***Medium Truck:*** | 2 | 0 |
| ***Heavy Truck:*** | 0 | 0 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

**Traffic Data**

| ***Roadway #3:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #4:*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:***

Roadway #1: 2 lanes in each direction, width = 12ft, avg. speed EB = 56mph, avg. speed WB = 64mph; Roadway #2: 1 lane in each direction, width = 12ft, avg. speed both directions = 44mph; I40 incut and cannot see most of the traffic, at 9:50am jet flyover

width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/18/2018
**Project:** I-40
**Job Number:** I-3306A
**M72**

Gannett Fleming, Inc.

**Address:**
Homewood Suites
3600 Mt. Moriah Rd.
Durham, NC 27707
Meter Storage #: M72

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 4* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 80F ***Wind Speed:*** 2mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 10:47 |
| ***Stop:*** | 11:07 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 63.2 |

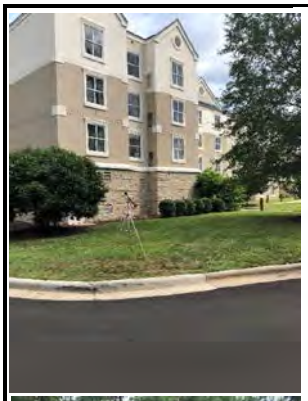
**Traffic Data**

| ***Roadway #1: I40*** | | | ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 534 | 555 | ***Auto:*** | 113 | 306 |
| ***Medium Truck:*** | 28 | 18 | ***Medium Truck:*** | 2 | 7 |
| ***Heavy Truck:*** | 70 | 104 | ***Heavy Truck:*** | 2 | 4 |
| ***Bus:*** | 4 | 2 | ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 1 | 0 | ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | | ***Roadway #4: US15/501*** | | | ***Roadway #5*** | | |
|---|---|---|---|---|---|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | ***EB*** | ***WB*** | ***Direction:*** | | |
| ***Auto:*** | 258 | 96 | ***Auto:*** | 562 | 524 | ***Auto:*** | | |
| ***Medium Truck:*** | 12 | 6 | ***Medium Truck:*** | 11 | 14 | ***Medium Truck:*** | | |
| ***Heavy Truck:*** | 5 | 7 | ***Heavy Truck:*** | 7 | 15 | ***Heavy Truck:*** | | |
| ***Bus:*** | 0 | 0 | ***Bus:*** | 1 | 1 | ***Bus:*** | | |
| ***Motorcycle:*** | 0 | 0 | ***Motorcycle:*** | 0 | 0 | ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 3 lanes in each direction, width = 12ft, avg. speed both directions 50mph; Roadway #2 - #3: 1 main line lane in 35mph each direction, width = 12ft, avg. speed all directions = 40mph; Roadway #4: 3 lanes in each direction, width = 12ft, avg. speed both directions width applies to all lanes in a road segment

**Site Sketch:**



# Highway Noise Monitoring Sheet

**Date:** 07/18/2018
**Project:** I-40
**Job Number:** I-3306A
**M73**

Gannett Fleming, Inc.

**Address:**
Homewood Suites
3600 Mt. Moriah Rd.
Durham, NC 27707
Meter Storage #: M73

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** *Rion 3* ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 80F ***Wind Speed:*** 2mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 10:47 |
| ***Stop:*** | 11:07 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 58.2 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 534 | 555 |
| ***Medium Truck:*** | 28 | 18 |
| ***Heavy Truck:*** | 70 | 104 |
| ***Bus:*** | 4 | 2 |
| ***Motorcycle:*** | 1 | 0 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 113 | 306 |
| ***Medium Truck:*** | 2 | 7 |
| ***Heavy Truck:*** | 2 | 4 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 258 | 96 |
| ***Medium Truck:*** | 12 | 6 |
| ***Heavy Truck:*** | 5 | 7 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #4: US15/501*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 562 | 524 |
| ***Medium Truck:*** | 11 | 14 |
| ***Heavy Truck:*** | 7 | 15 |
| ***Bus:*** | 1 | 1 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 3 lanes in each direction, width = 12ft, avg. speed both directions 50mph; Roadway #2 - #3: 1 main line lane in 35mph each direction, width = 12ft, avg. speed all directions = 40mph; Roadway #4: 3 lanes in each direction, width = 12ft, avg. speed both directions width applies to all lanes in a road segment

**Site Sketch:**

# Highway Noise Monitoring Sheet

**Date:** 07/18/2018
**Project:** I-40
**Job Number:** I-3306A
**M74**

Gannett Fleming, Inc.

**Address:**
Homewood Suites
3600 Mt. Moriah Rd.
Durham, NC 27707
Meter Storage #: M74

**Type:** ☑ *Residential* ☐ *Commercial* ☐ *Religion* ☐ *Educational* ☐ *Other* _____

***Meter Number:*** 4228 ***Meter Calibration:*** ***Before*** ✓ ***After*** _____

**Weather:** ***Temperature:*** 80F ***Wind Speed:*** 2mph - average ***Cloud Cover:*** Sunny

| | |
|---|---|
| **Run Time:** | 20 min. |
| ***Start:*** | 10:47 |
| ***Stop:*** | 11:07 |
| ***Duration:*** | 20 min. |
| ***Average LEQ*** | 57.4 |

**Traffic Data**

| ***Roadway #1: I40*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 534 | 555 |
| ***Medium Truck:*** | 28 | 18 |
| ***Heavy Truck:*** | 70 | 104 |
| ***Bus:*** | 4 | 2 |
| ***Motorcycle:*** | 1 | 0 |

| ***Roadway #2: I40 Exit Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 113 | 306 |
| ***Medium Truck:*** | 2 | 7 |
| ***Heavy Truck:*** | 2 | 4 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

| ***Roadway #3: I40 Entrance Ramp*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 258 | 96 |
| ***Medium Truck:*** | 12 | 6 |
| ***Heavy Truck:*** | 5 | 7 |
| ***Bus:*** | 0 | 0 |
| ***Motorcycle:*** | 0 | 0 |

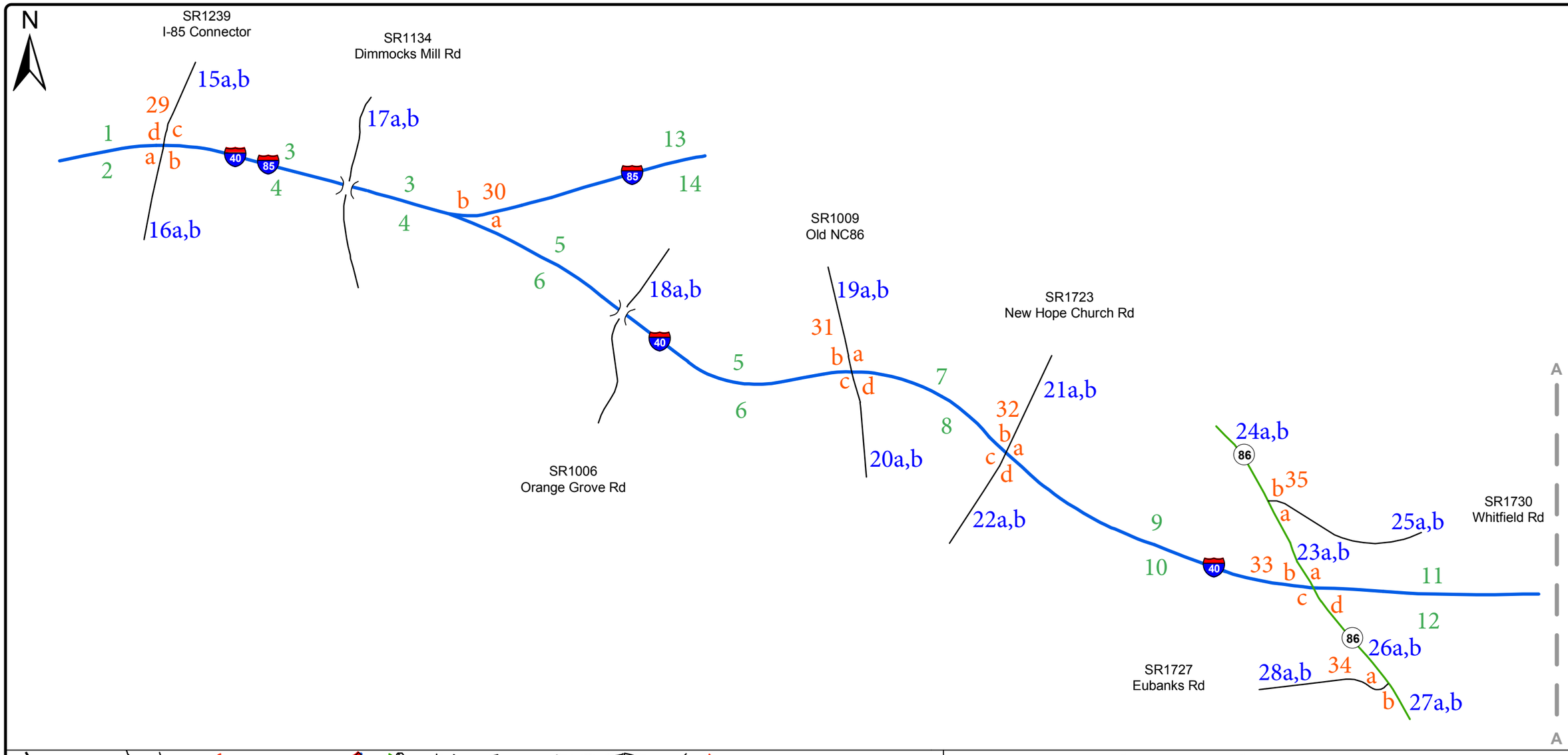
| ***Roadway #4: US15/501*** | | |
|---|---|---|
| ***Direction:*** | ***EB*** | ***WB*** |
| ***Auto:*** | 562 | 524 |
| ***Medium Truck:*** | 11 | 14 |
| ***Heavy Truck:*** | 7 | 15 |
| ***Bus:*** | 1 | 1 |
| ***Motorcycle:*** | 0 | 0 |

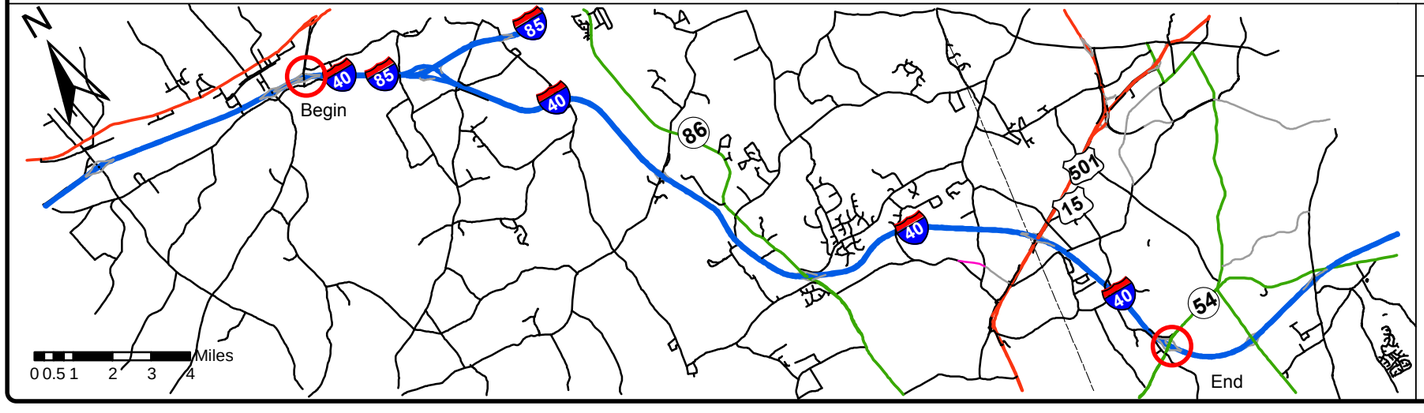
| ***Roadway #5*** | | |
|---|---|---|
| ***Direction:*** | | |
| ***Auto:*** | | |
| ***Medium Truck:*** | | |
| ***Heavy Truck:*** | | |
| ***Bus:*** | | |
| ***Motorcycle:*** | | |

***Notes:*** Roadway #1: 3 lanes in each direction, width = 12ft, avg. speed both directions 50mph; Roadway #2 - #3: 1 main line lane in 35mph each direction, width = 12ft, avg. speed all directions = 40mph; Roadway #4: 3 lanes in each direction, width = 12ft, avg. speed both directions width applies to all lanes in a road segment

**Site Sketch:**

# APPENDIX B
TRAFFIC DATA SUMMARY




# Numbering Scheme

**SHEET 1 OF** 2

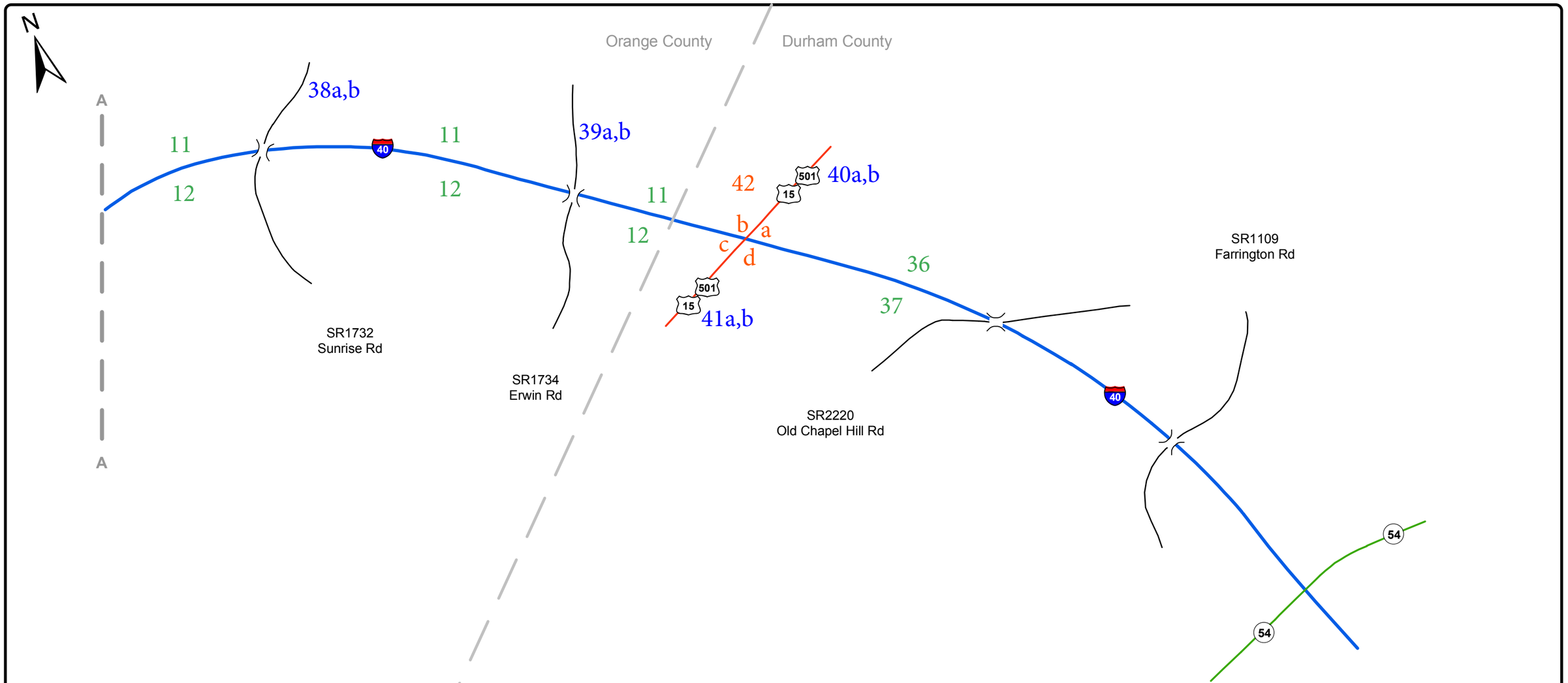
**L E G E N D**

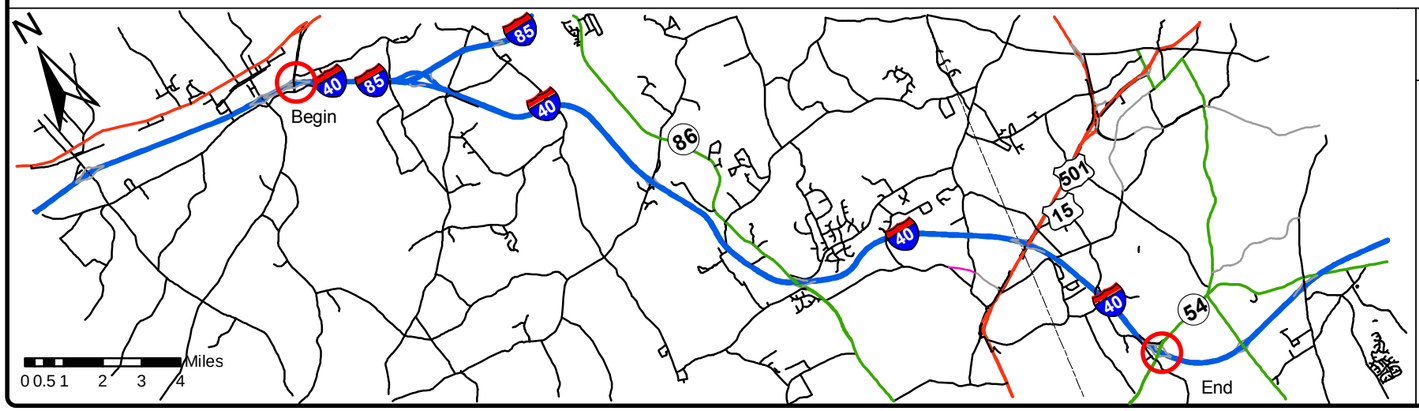
Interstates

Secondary Roads

On/Off Ramps & Turning

| | |
|---|---|
| **TIP:** I-3306A | **WBS:** 34178.1.3 |
| **COUNTY:** Orange | **DIVISION:** 7 |
| **DATE:** 10-15-13 | |
| **PREPARED BY:** Jamie Moore | |
| **LOCATION:** I-40 | |
| **PROJECT:** Widening of I-40 from I-85 to the Durham County Line | |




# Numbering Scheme



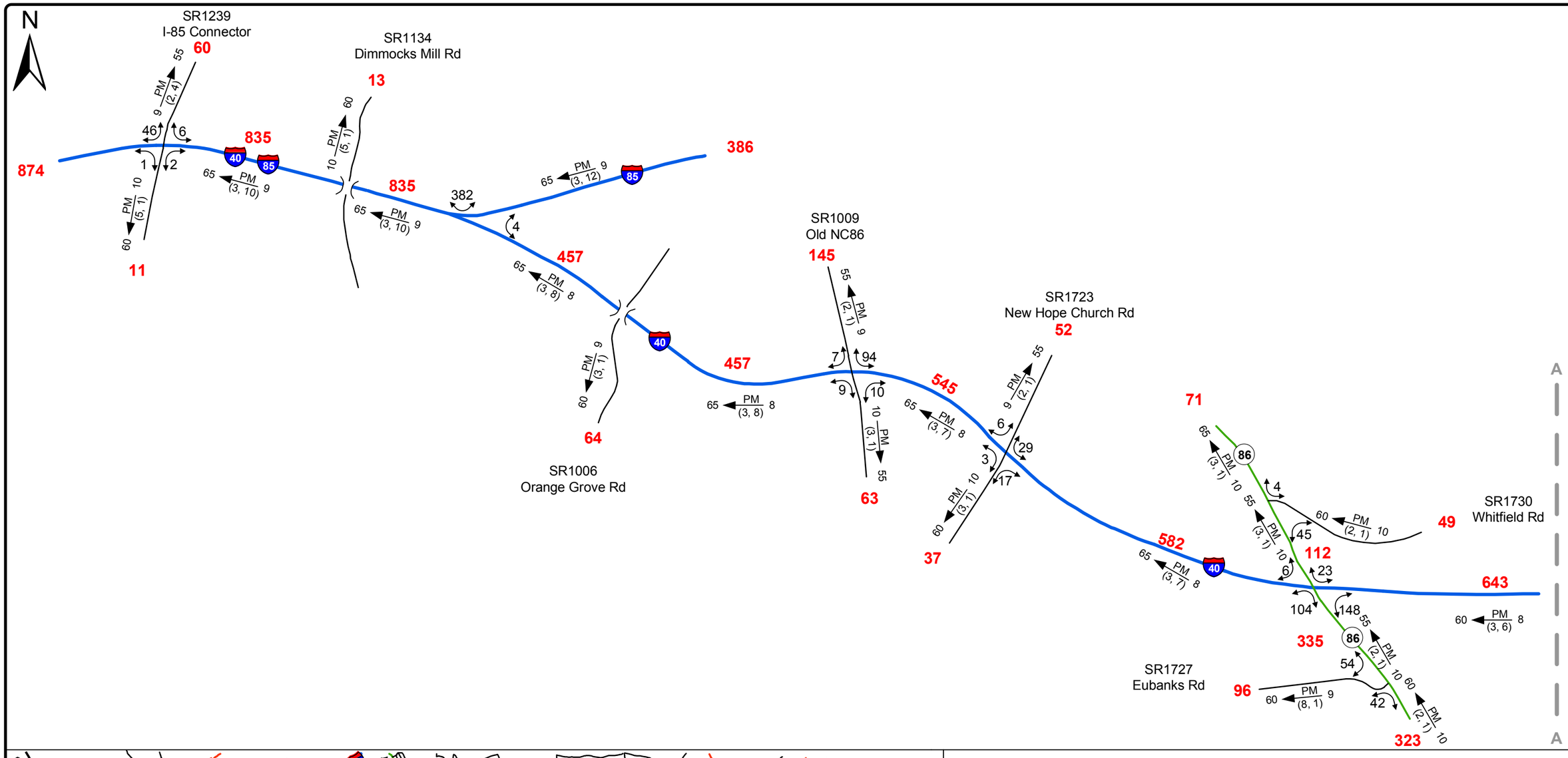
**L E G E N D**

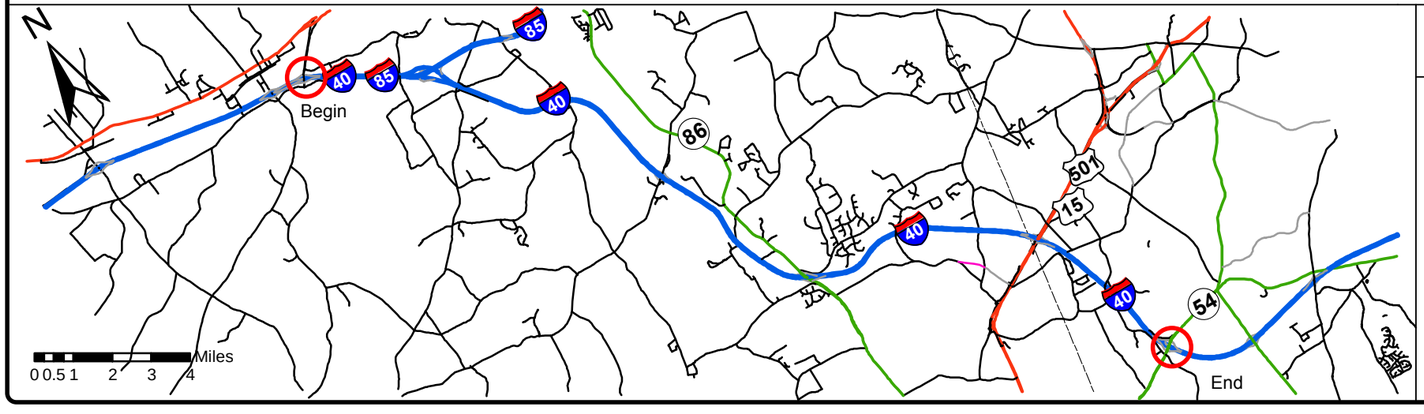
Interstates

Secondary Roads

On/Off Ramps & Turning

| | |
|---|---|
| **TIP:** I-3306A | **WBS:** 34178.1.3 |
| **COUNTY:** Orange | **DIVISION:** 7 |
| **DATE:** 10-15-13 | |
| **PREPARED BY:** Jamie Moore | |
| **LOCATION:** I-40 | |
| **PROJECT:** Widening of I-40 from I-85 to the Durham County Line | |




**2013** AVERAGE ANNUAL DAILY TRAFFIC

**NO BUILD**

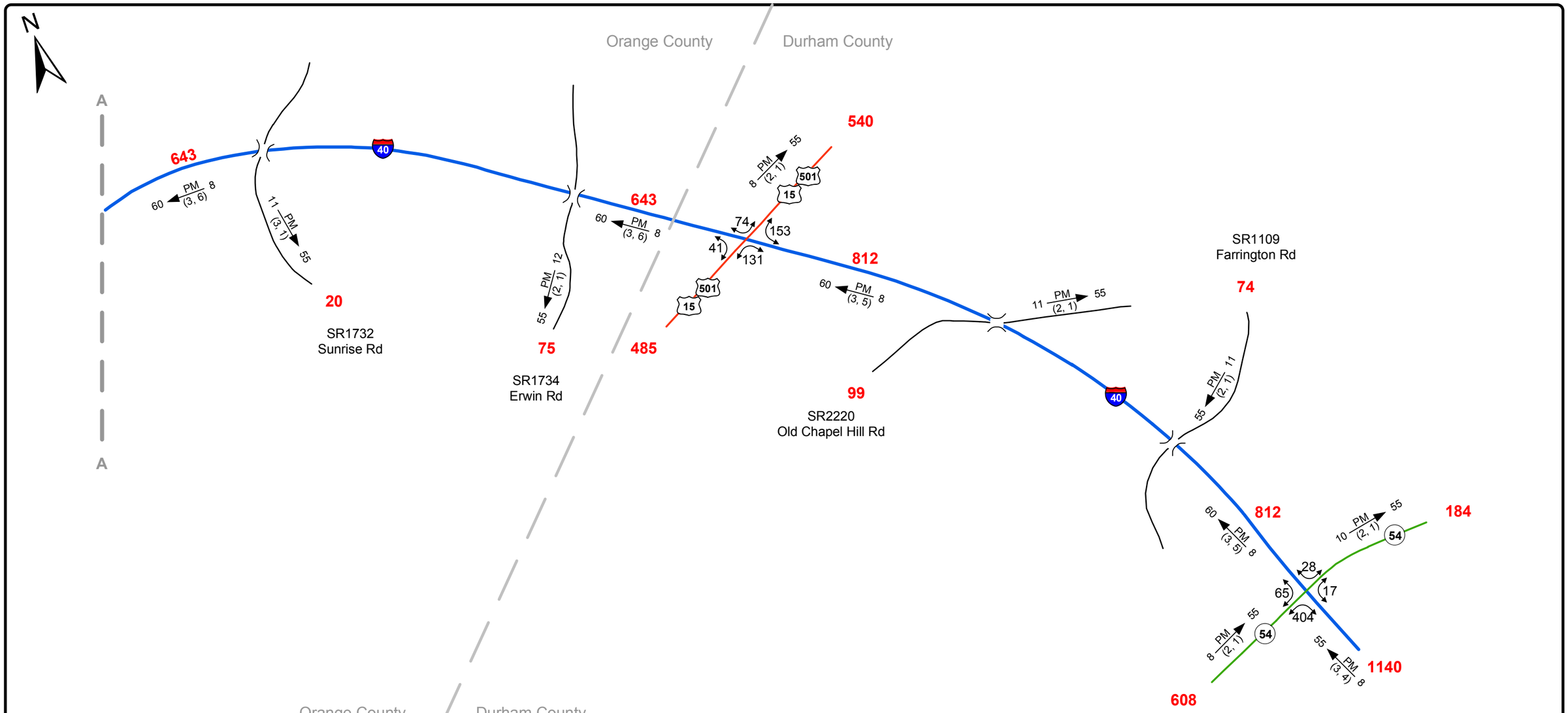
**SHEET 1 OF 8**

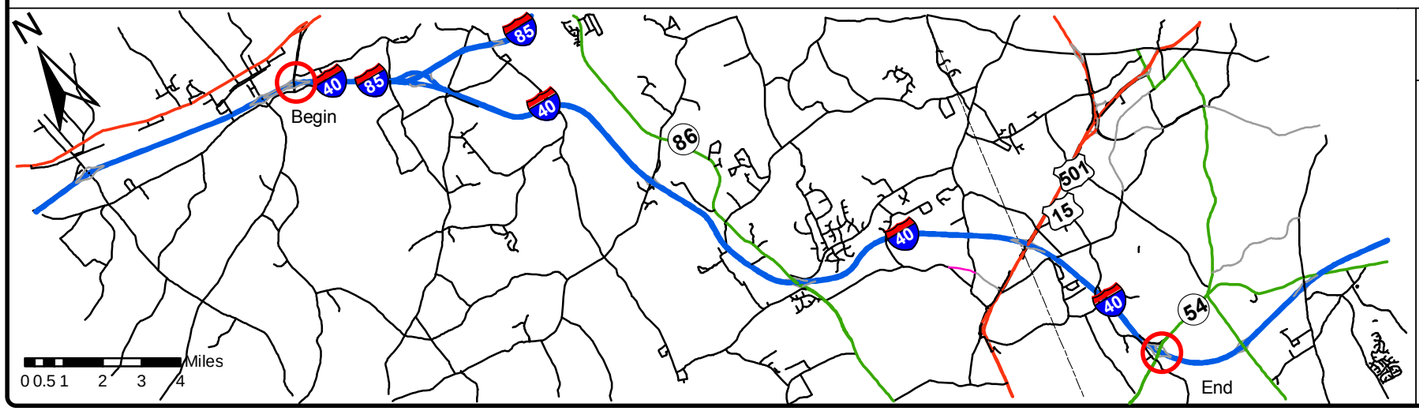
## L E G E N D

K PM (d, t) D

| | | | |
|---|---|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s | K | Design Hour Factor (%) |
| 1- | Less than 50 VPD | PM | PM Peak Period |
| x | Movement Prohibited | D | Peak Hour Directional Split |
| ..... | Proposed Roadway | → | Indicates Direction of D |
| | | (d, t) | Duals, TT-STs (%) |

| | |
|---|---|
| **TIP:** I-3306A | **WBS:** 34178.1.3 |
| **COUNTY:** Orange | **DIVISION:** 7 |
| **DATE:** 10-15-13 | |
| **PREPARED BY:** Jamie Moore | |
| **LOCATION:** I-40 | |
| **PROJECT:** Widening of I-40 from I-85 to the Durham County Line | |




**2013** AVERAGE ANNUAL DAILY TRAFFIC

**NO BUILD**



## L E G E N D

K PM (d, t) D

| | | | |
|---|---|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s | **K** | Design Hour Factor (%) |
| 1- | Less than 50 VPD | **PM** | PM Peak Period |
| X | Movement Prohibited | **D** | Peak Hour Directional Split |
| ..... | Proposed Roadway | → | Indicates Direction of D |
| | | **( d, t )** | Duals, TT-STs (%) |

**TIP:** I-3306A | **WBS:** 34178.1.3

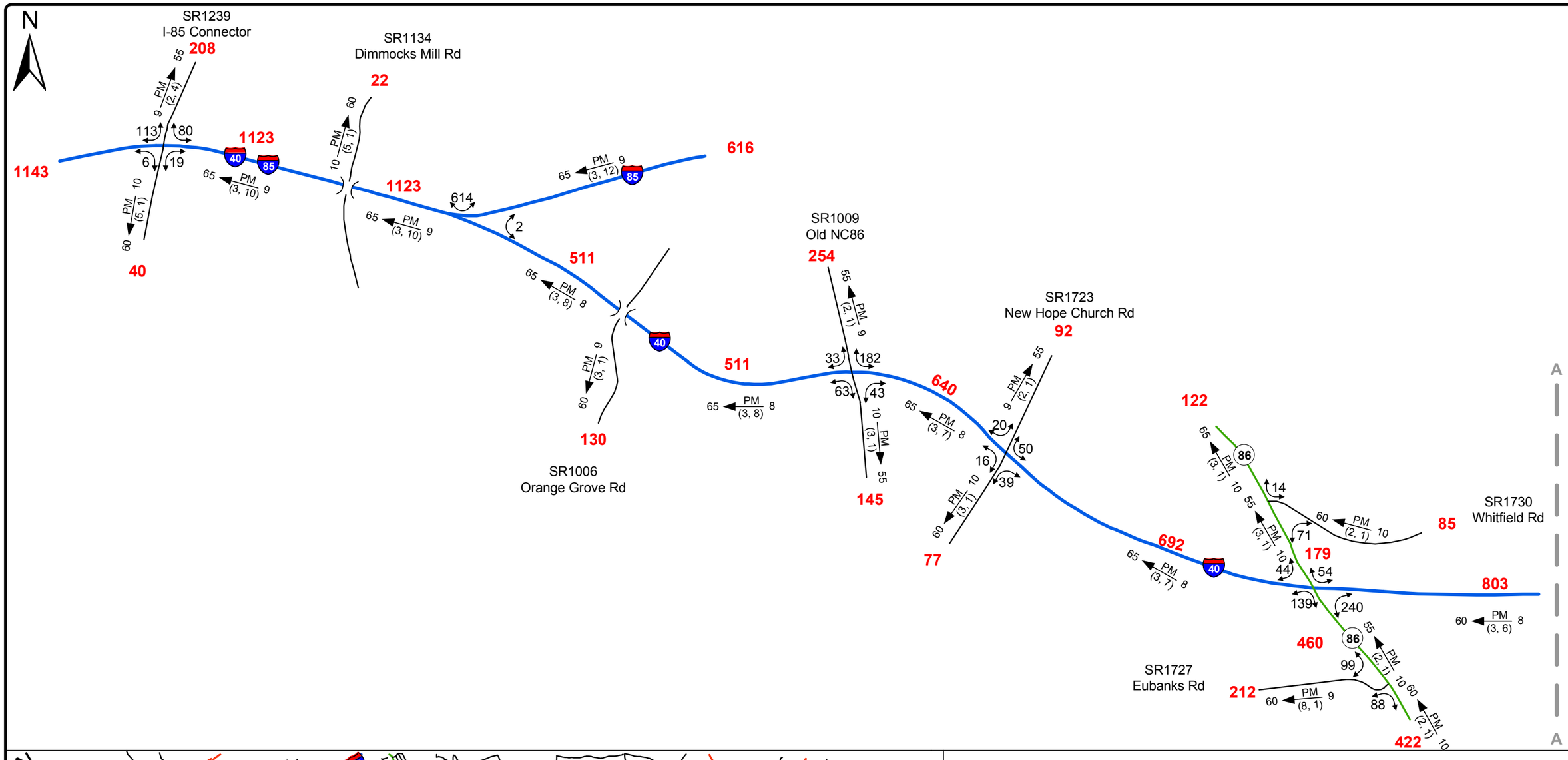
**COUNTY:** Orange | **DIVISION:** 7

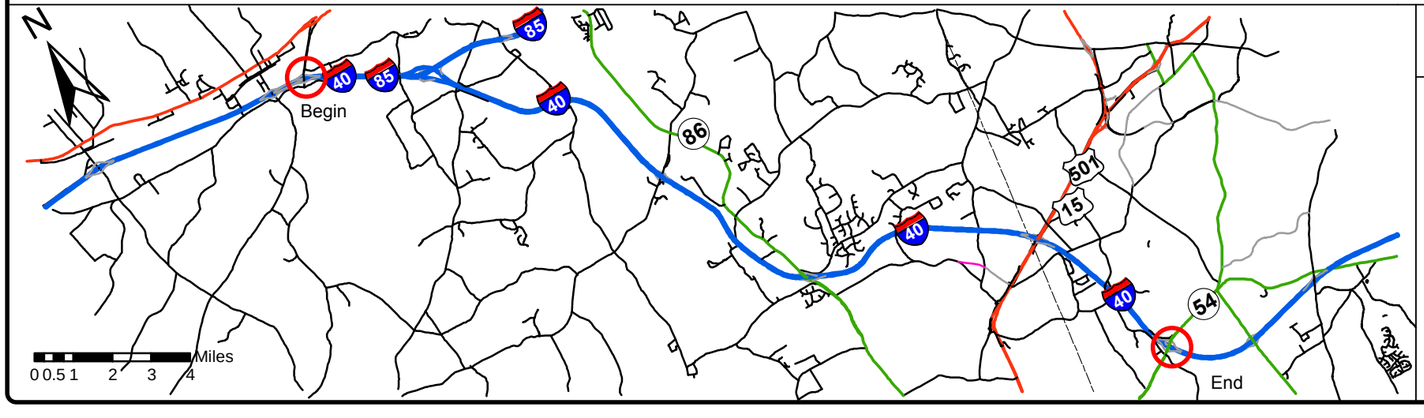
**DATE:** 10-15-13

**PREPARED BY:** Jamie Moore

**LOCATION:** I-40

**PROJECT:** Widening of I-40 from I-85 to the Durham County Line




**2040** AVERAGE ANNUAL DAILY TRAFFIC

**NO BUILD**

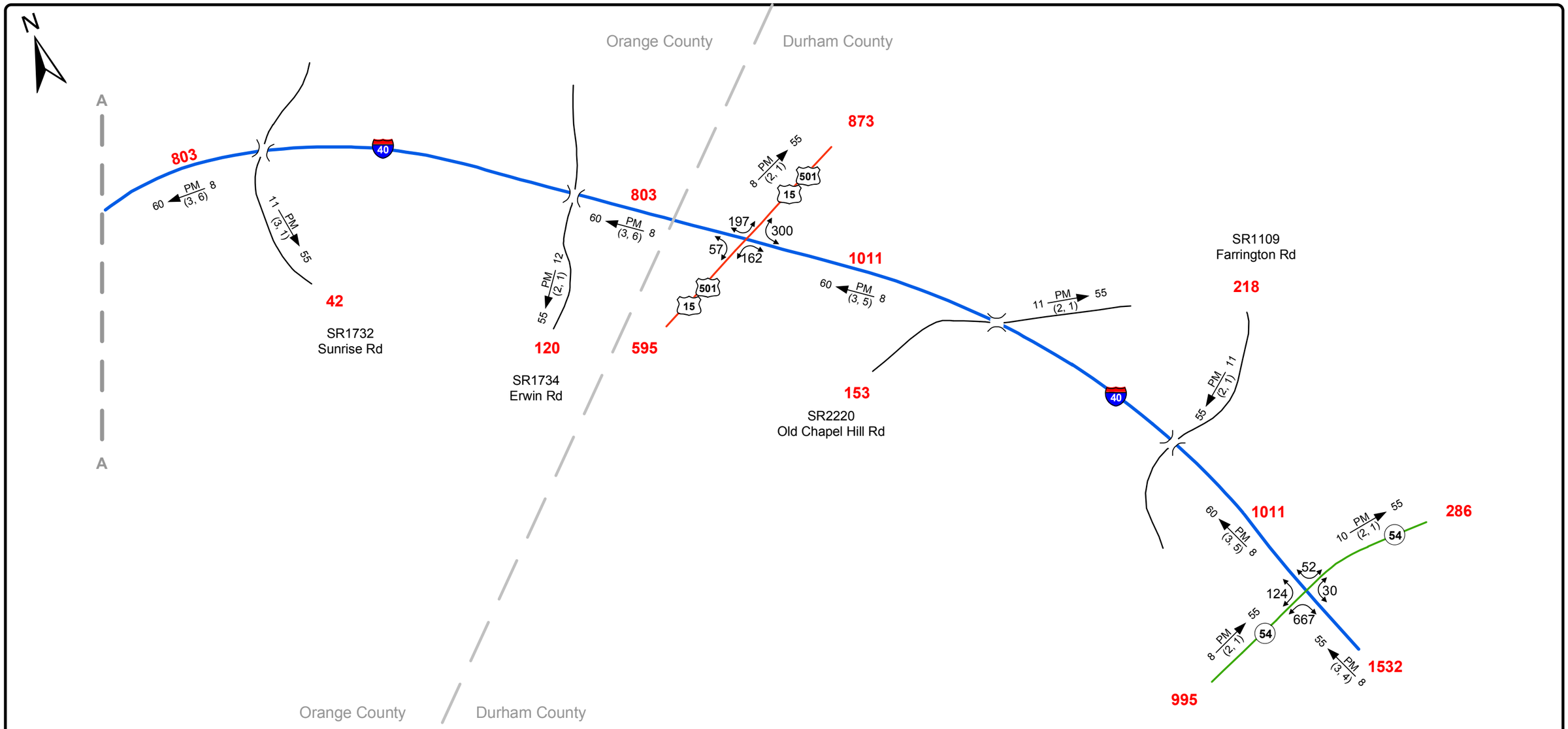
**SHEET 5 OF 8**

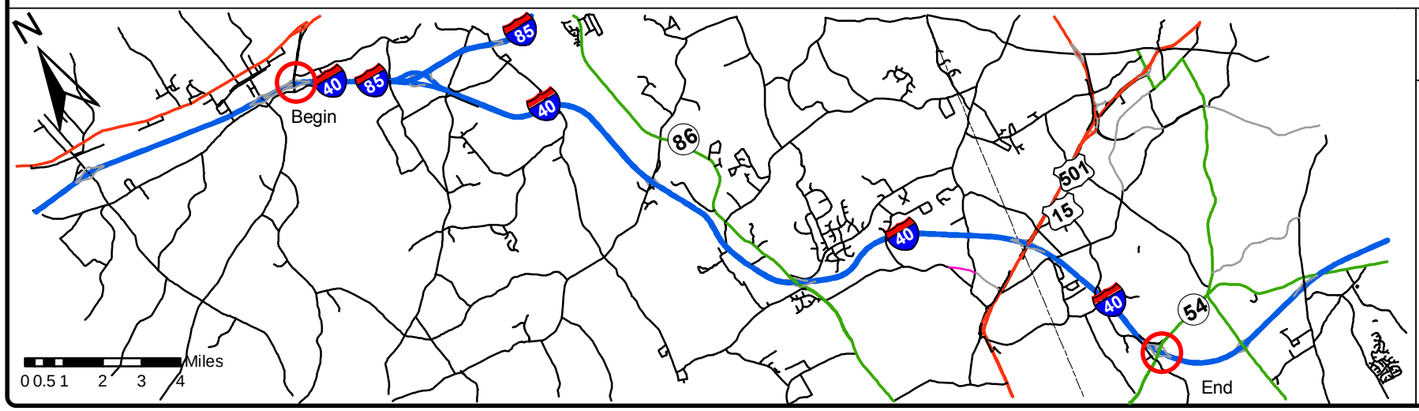
## L E G E N D

K PM (d, t) D

| | | | |
|---|---|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s | K | Design Hour Factor (%) |
| 1- | Less than 50 VPD | PM | PM Peak Period |
| X | Movement Prohibited | D | Peak Hour Directional Split |
| ..... | Proposed Roadway | → | Indicates Direction of D |
| | | (d, t) | Duals, TT-STs (%) |

| | |
|---|---|
| **TIP:** I-3306A | **WBS:** 34178.1.3 |
| **COUNTY:** Orange | **DIVISION:** 7 |
| **DATE:** 10-15-13 | |
| **PREPARED BY:** Jamie Moore | |
| **LOCATION:** I-40 | |
| **PROJECT:** Widening of I-40 from I-85 to the Durham County Line | |




# 2040 AVERAGE ANNUAL DAILY TRAFFIC

# NO BUILD

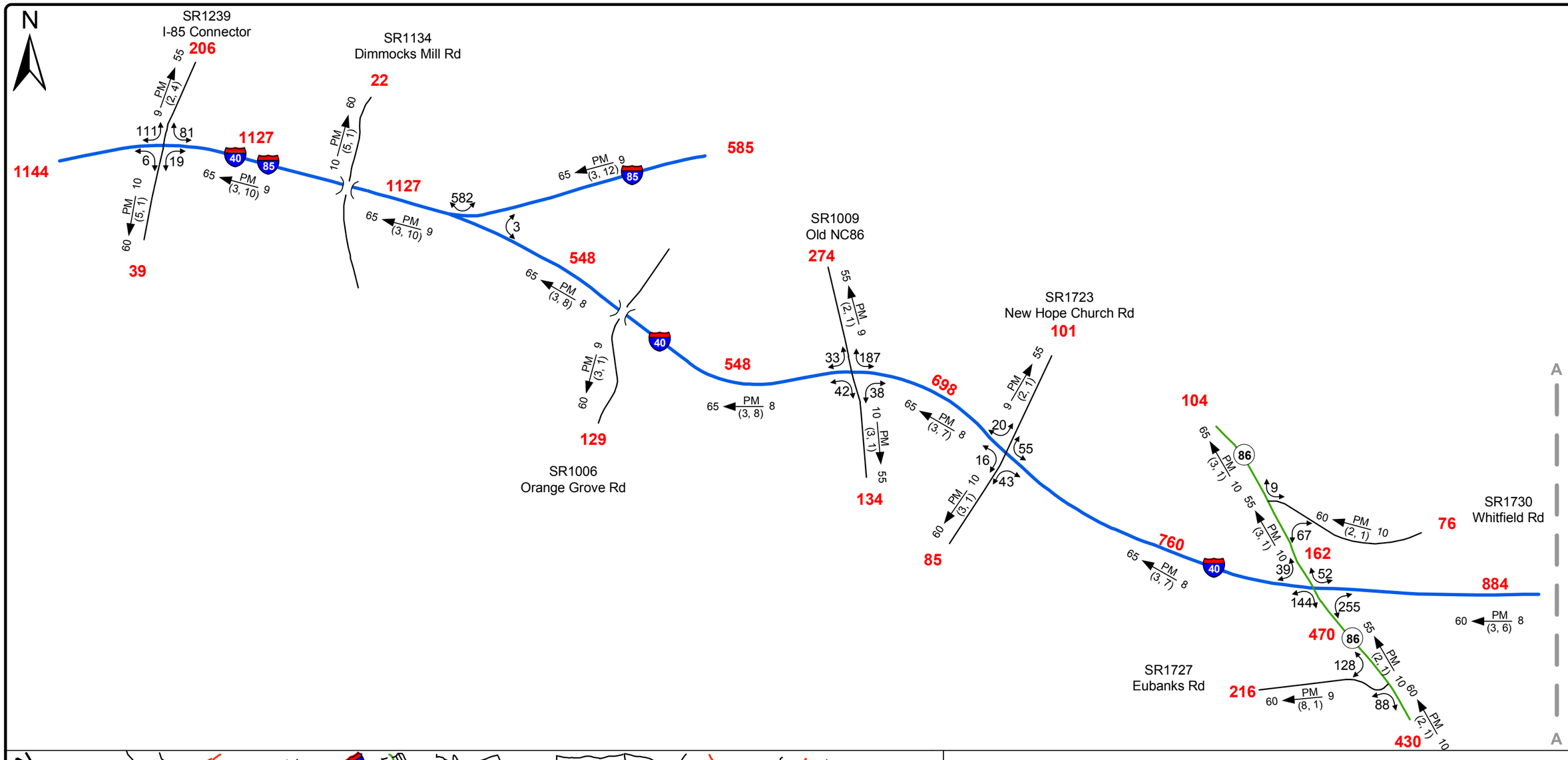


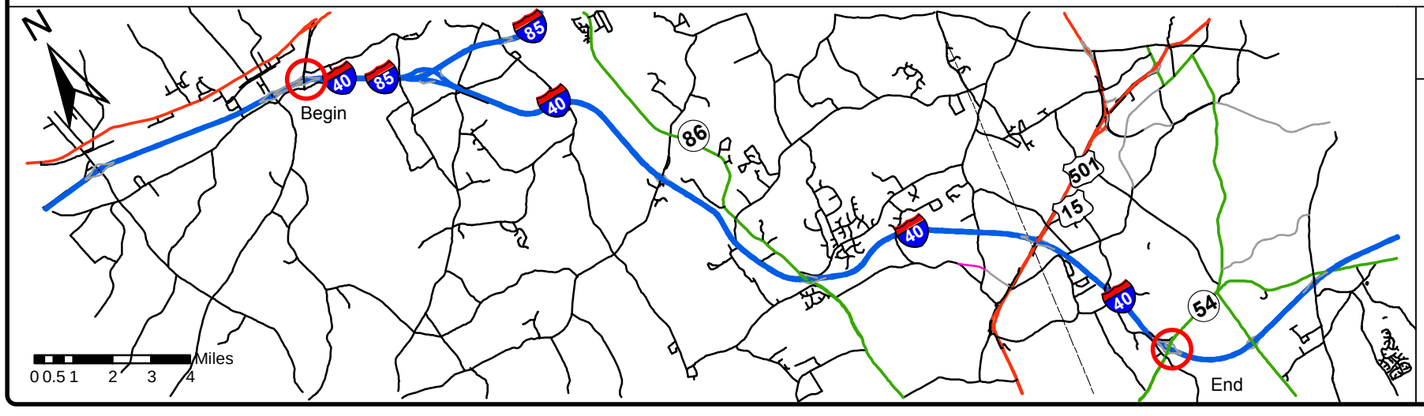
## L E G E N D

K PM (d, t) D

| | | | |
|---|---|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s | K | Design Hour Factor (%) |
| 1- | Less than 50 VPD | PM | PM Peak Period |
| X | Movement Prohibited | D | Peak Hour Directional Split |
| ..... | Proposed Roadway | → | Indicates Direction of D |
| | | ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| **TIP:** I-3306A | **WBS:** 34178.1.3 |
| **COUNTY:** Orange | **DIVISION:** 7 |
| **DATE:** 10-15-13 | |
| **PREPARED BY:** Jamie Moore | |
| **LOCATION:** I-40 | |
| **PROJECT:** Widening of I-40 from I-85 to the Durham County Line | |




**2040** AVERAGE ANNUAL DAILY TRAFFIC

**BUILD**

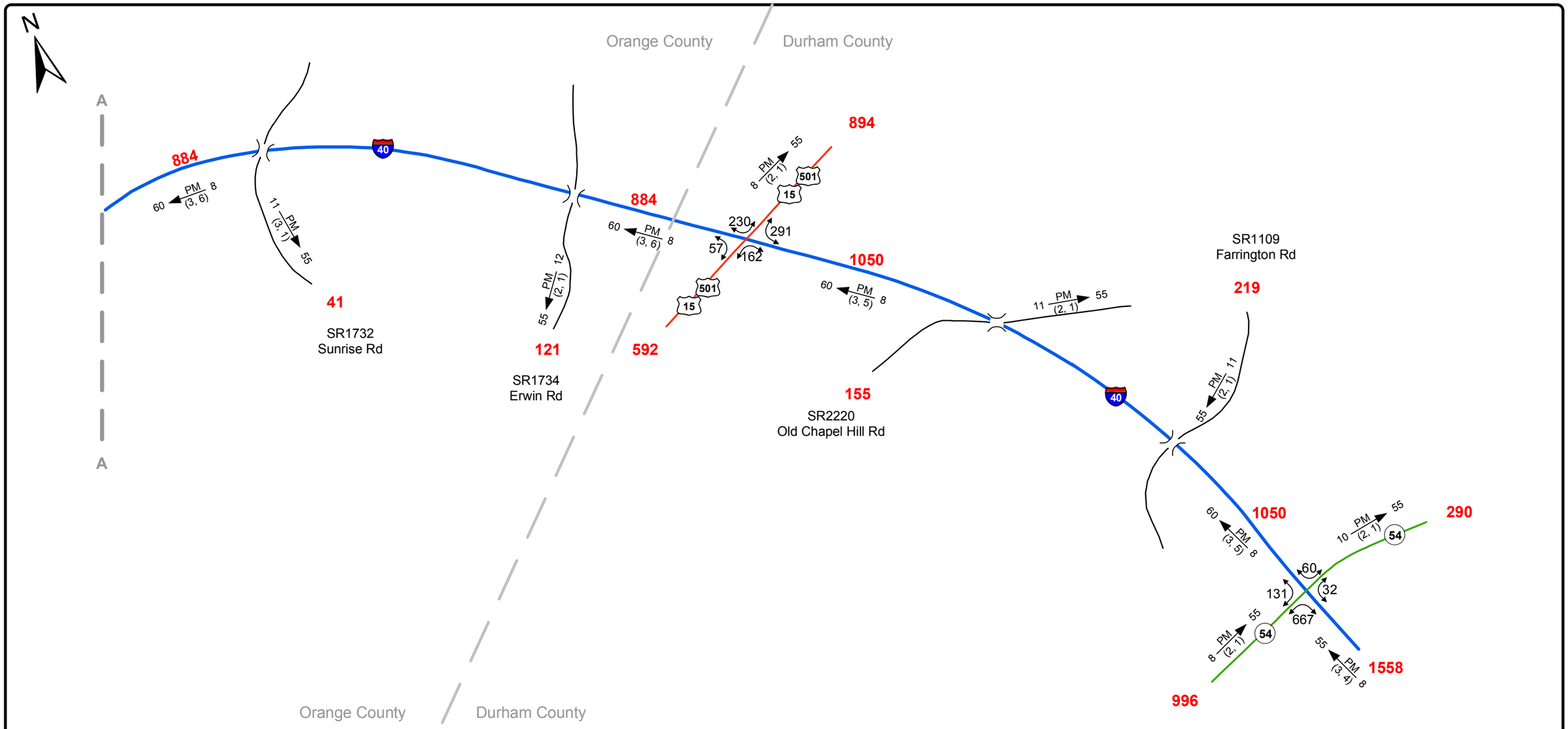
**SHEET 7 OF 8**

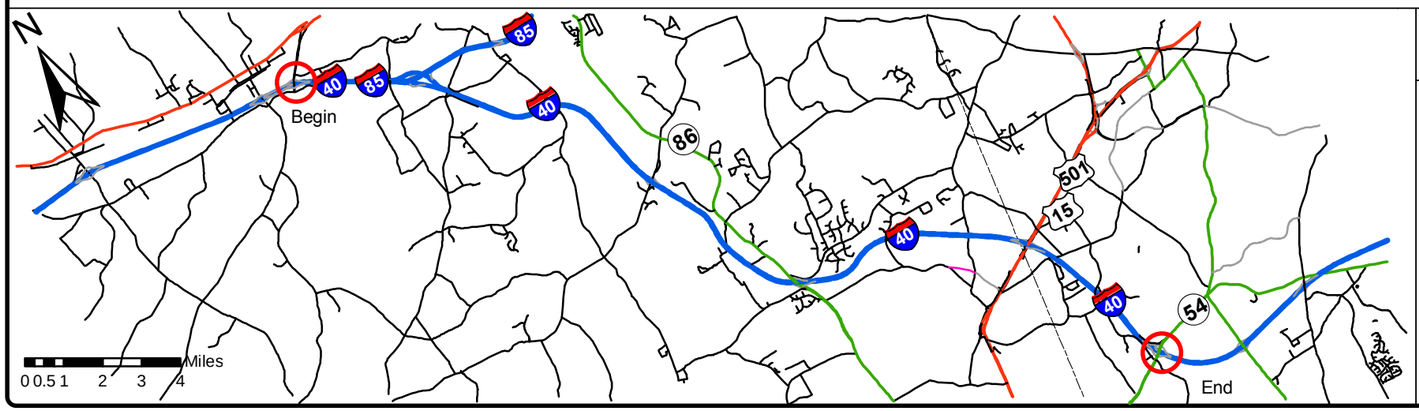
## L E G E N D

K PM (d, t) D

| | | | |
|---|---|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s | K | Design Hour Factor (%) |
| 1- | Less than 50 VPD | PM | PM Peak Period |
| X | Movement Prohibited | D | Peak Hour Directional Split |
| ..... | Proposed Roadway | → | Indicates Direction of D |
| | | (d, t) | Duals, TT-STs (%) |

| | |
|---|---|
| **TIP:** I-3306A | **WBS:** 34178.1.3 |
| **COUNTY:** Orange | **DIVISION:** 7 |
| **DATE:** 10-15-13 | |
| **PREPARED BY:** Jamie Moore | |
| **LOCATION:** I-40 | |
| **PROJECT:** Widening of I-40 from I-85 to the Durham County Line | |




# 2040 AVERAGE ANNUAL DAILY TRAFFIC

# BUILD

# SHEET 8 OF 8

## L E G E N D

K PM (d, t) D

| | | | |
|---|---|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s | K | Design Hour Factor (%) |
| 1- | Less than 50 VPD | PM | PM Peak Period |
| X | Movement Prohibited | D | Peak Hour Directional Split |
| ..... | Proposed Roadway | → | Indicates Direction of D |
| | | ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| **TIP:** I-3306A | **WBS:** 34178.1.3 |
| **COUNTY:** Orange | **DIVISION:** 7 |
| **DATE:** 10-15-13 | |
| **PREPARED BY:** Jamie Moore | |
| **LOCATION:** I-40 | |
| **PROJECT:** Widening of I-40 from I-85 to the Durham County Line | |

| Model | Seg | TNM Name | TYPE | VOLUME | SPEED | 1 LANES | 2 LANES | 3 LANES | 4 LANES | 5 LANES |
|---|---|---|---|---|---|---|---|---|---|---|
| Area not in model | 1 | I40WB/I85SB west of SR1239 | AUTO | 4479 | 70.0 | 4479 | 2239 | 1493 | 1120 | 896 |
| | | | MT | 154 | | 154 | 77 | 51 | 39 | 31 |
| | | | HT | 515 | | 515 | 257 | 172 | 129 | 103 |
| | 2 | I40EB/I85NB west of SR1239 | AUTO | 4479 | 70.0 | 4479 | 2239 | 1493 | 1120 | 896 |
| | | | MT | 154 | | 154 | 77 | 51 | 39 | 31 |
| | | | HT | 515 | | 515 | 257 | 172 | 129 | 103 |
| Model 1A/1B | 3 | I40WB/I85SB west of I85 junction | AUTO | 4412 | 70.0 | 4412 | 2206 | 1471 | 1103 | 882 |
| | | | MT | 152 | | 152 | 76 | 51 | 38 | 30 |
| | | | HT | 507 | | 507 | 254 | 169 | 127 | 101 |
| | 4 | I40EB/I85NB west of I85 junction | AUTO | 4412 | 70.0 | 4412 | 2206 | 1471 | 1103 | 882 |
| | | | MT | 152 | | 152 | 76 | 51 | 38 | 30 |
| | | | HT | 507 | | 507 | 254 | 169 | 127 | 101 |
| Model 1A/1B & 2 | 5 | I40WB west Old NC86 | AUTO | 1951 | 70.0 | 1951 | 975 | 650 | 488 | 390 |
| | | | MT | 66 | | 66 | 33 | 22 | 16 | 13 |
| | | | HT | 175 | | 175 | 88 | 58 | 44 | 35 |
| | 6 | I40EB west Old NC86 | AUTO | 1951 | 70.0 | 1951 | 975 | 650 | 488 | 390 |
| | | | MT | 66 | | 66 | 33 | 22 | 16 | 13 |
| | | | HT | 175 | | 175 | 88 | 58 | 44 | 35 |
| Model 2 & 3 | 7 | I40WB west New Hope Church Rd | AUTO | 2513 | 70.0 | 2513 | 1256 | 838 | 628 | 503 |
| | | | MT | 84 | | 84 | 42 | 28 | 21 | 17 |
| | | | HT | 195 | | 195 | 98 | 65 | 49 | 39 |
| | 8 | I40EB west New Hope Church Rd | AUTO | 2513 | 70.0 | 2513 | 1256 | 838 | 628 | 503 |
| | | | MT | 84 | | 84 | 42 | 28 | 21 | 17 |
| | | | HT | 195 | | 195 | 98 | 65 | 49 | 39 |
| Model 3 & 4A/4B | 9 | I40WB west NC86 | AUTO | 2736 | 70.0 | 2736 | 1368 | 912 | 684 | 547 |
| | | | MT | 91 | | 91 | 46 | 30 | 23 | 18 |
| | | | HT | 213 | | 213 | 106 | 71 | 53 | 43 |
| | 10 | I40EB west NC86 | AUTO | 2736 | 70.0 | 2736 | 1368 | 912 | 684 | 547 |
| | | | MT | 91 | | 91 | 46 | 30 | 23 | 18 |
| | | | HT | 213 | | 213 | 106 | 71 | 53 | 43 |
| Model 3, 4A/4B & 6 | 11 | I40WB west US15/501 | AUTO | 3218 | 70.0 | 3218 | 1609 | 1073 | 804 | 644 |
| | | | MT | 106 | | 106 | 53 | 35 | 27 | 21 |
| | | | HT | 212 | | 212 | 106 | 71 | 53 | 42 |
| | 12 | I40EB west US15/501 | AUTO | 3218 | 70.0 | 3218 | 1609 | 1073 | 804 | 644 |
| | | | MT | 106 | | 106 | 53 | 35 | 27 | 21 |
| | | | HT | 212 | | 212 | 106 | 71 | 53 | 42 |
| Model 1A/1B | 13 | I85SB east junction | AUTO | 2238 | 70.0 | 2238 | 1119 | 746 | 559 | 448 |
| | | | MT | 79 | | 79 | 39 | 26 | 20 | 16 |
| | | | HT | 316 | | 316 | 158 | 105 | 79 | 63 |
| | 14 | I85NB east junction | AUTO | 2238 | 70.0 | 2238 | 1119 | 746 | 559 | 448 |
| | | | MT | 79 | | 79 | 39 | 26 | 20 | 16 |
| | | | HT | 316 | | 316 | 158 | 105 | 79 | 63 |
| Area not in model | 15a | SR1239 NB north I40/I85 | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | 15b | SR1239 SB north I40/I85 | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | 16a | SR1239 SB south I40/I85 | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | 16b | SR1239 NB south I40/I85 | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| Model 1A/1B | 17a | NB Dimmocks Mill Rd | AUTO | 103 | 45.0 | 103 | 52 | 34 | 26 | 21 |
| | | | MT | 6 | | 6 | 3 | 2 | 1 | 1 |
| | | | HT | 1 | | 1 | 1 | 0 | 0 | 0 |
| Model 1A/1B | 17b | SB Dimmocks Mill Rd | AUTO | 103 | 45.0 | 103 | 52 | 34 | 26 | 21 |
| | | | MT | 6 | | 6 | 3 | 2 | 1 | 1 |
| | | | HT | 1 | | 1 | 1 | 0 | 0 | 0 |
| | 18a | SB Orange Grove Rd | AUTO | 557 | 45.0 | 557 | 279 | 186 | 139 | 111 |
| | | | MT | 17 | | 17 | 9 | 6 | 4 | 3 |
| | | | HT | 6 | | 6 | 3 | 2 | 1 | 1 |
| | 18b | NB Orange Grove Rd | AUTO | 557 | 45.0 | 557 | 279 | 186 | 139 | 111 |
| | | | MT | 17 | | 17 | 9 | 6 | 4 | 3 |
| | | | HT | 6 | | 6 | 3 | 2 | 1 | 1 |
| Model 2 | 19a | NB Old NC86 north I40 | AUTO | 1196 | 45.0 | 1196 | 598 | 399 | 299 | 239 |
| | | | MT | 25 | | 25 | 12 | 8 | 6 | 5 |
| | | | HT | 12 | | 12 | 6 | 4 | 3 | 2 |
| | 19b | SB Old NC86 north I40 | AUTO | 1196 | 45.0 | 1196 | 598 | 399 | 299 | 239 |
| | | | MT | 25 | | 25 | 12 | 8 | 6 | 5 |
| | | | HT | 12 | | 12 | 6 | 4 | 3 | 2 |
| | 20a | SB Old NC86 south I40 | AUTO | 643 | 45.0 | 643 | 322 | 214 | 161 | 129 |
| | | | MT | 20 | | 20 | 10 | 7 | 5 | 4 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Model 2 | 20a | SB Old NC86 south I40 | HT | 7 | 45.0 | 7 | 3 | 2 | 2 | 1 |
| | 20b | NB Old NC86 south I40 | AUTO | 643 | 45.0 | 643 | 322 | 214 | 161 | 129 |
| | | | MT | 20 | | 20 | 10 | 7 | 5 | 4 |
| | | | HT | 7 | | 7 | 3 | 2 | 2 | 1 |
| Model 3 | 21a | NB New Hope Church Rd north I40 | AUTO | 441 | 45.0 | 441 | 220 | 147 | 110 | 88 |
| | | | MT | 9 | | 9 | 5 | 3 | 2 | 2 |
| | | | HT | 5 | | 5 | 2 | 2 | 1 | 1 |
| | 21b | SB New Hope Church Rd north I40 | AUTO | 441 | 45.0 | 441 | 220 | 147 | 110 | 88 |
| | | | MT | 9 | | 9 | 5 | 3 | 2 | 2 |
| | | | HT | 5 | | 5 | 2 | 2 | 1 | 1 |
| | 22a | SB New Hope Church Rd south I40 | AUTO | 408 | 45.0 | 408 | 204 | 136 | 102 | 82 |
| | | | MT | 13 | | 13 | 6 | 4 | 3 | 3 |
| | | | HT | 4 | | 4 | 2 | 1 | 1 | 1 |
| | 22b | NB New Hope Church Rd south I40 | AUTO | 408 | 45.0 | 408 | 204 | 136 | 102 | 82 |
| | | | MT | 13 | | 13 | 6 | 4 | 3 | 3 |
| | | | HT | 4 | | 4 | 2 | 1 | 1 | 1 |
| Model 4A/4B | 23a | NB NC86 north I40 | AUTO | 778 | 50.0 | 778 | 389 | 259 | 194 | 156 |
| | | | MT | 24 | | 24 | 12 | 8 | 6 | 5 |
| | | | HT | 8 | | 8 | 4 | 3 | 2 | 2 |
| | 23b | SB NC86 north I40 | AUTO | 778 | 50.0 | 778 | 389 | 259 | 194 | 156 |
| | | | MT | 24 | | 24 | 12 | 8 | 6 | 5 |
| | | | HT | 8 | | 8 | 4 | 3 | 2 | 2 |
| | 24a | NB NC86 north Whitfield Rd | AUTO | 499 | 50.0 | 499 | 250 | 166 | 125 | 100 |
| | | | MT | 16 | | 16 | 8 | 5 | 4 | 3 |
| | | | HT | 5 | | 5 | 3 | 2 | 1 | 1 |
| | 24b | SB NC86 north Whitfield Rd | AUTO | 499 | 50.0 | 499 | 250 | 166 | 125 | 100 |
| | | | MT | 16 | | 16 | 8 | 5 | 4 | 3 |
| | | | HT | 5 | | 5 | 3 | 2 | 1 | 1 |
| | 25a | WB Whitfield Rd | AUTO | 369 | 50.0 | 369 | 184 | 123 | 92 | 74 |
| | | | MT | 8 | | 8 | 4 | 3 | 2 | 2 |
| | | | HT | 4 | | 4 | 2 | 1 | 1 | 1 |
| | 25b | EB Whitfield Rd | AUTO | 369 | 50.0 | 369 | 184 | 123 | 92 | 74 |
| | | | MT | 8 | | 8 | 4 | 3 | 2 | 2 |
| | | | HT | 4 | | 4 | 2 | 1 | 1 | 1 |
| | 26a | NB NC86 north Eubanks Rd | AUTO | 2280 | 50.0 | 2280 | 1140 | 760 | 570 | 456 |
| | | | MT | 47 | | 47 | 24 | 16 | 12 | 9 |
| | | | HT | 24 | | 24 | 12 | 8 | 6 | 5 |
| | 26b | SB NC86 north Eubanks Rd | AUTO | 2280 | 50.0 | 2280 | 1140 | 760 | 570 | 456 |
| | | | MT | 47 | | 47 | 24 | 16 | 12 | 9 |
| | | | HT | 24 | | 24 | 12 | 8 | 6 | 5 |
| | 27a | NB NC86 south Eubanks Rd | AUTO | 2086 | 50.0 | 2086 | 1043 | 695 | 521 | 417 |
| | | | MT | 43 | | 43 | 22 | 14 | 11 | 9 |
| | | | HT | 22 | | 22 | 11 | 7 | 5 | 4 |
| | 27b | SB NC86 south Eubanks Rd | AUTO | 2086 | 50.0 | 2086 | 1043 | 695 | 521 | 417 |
| | | | MT | 43 | | 43 | 22 | 14 | 11 | 9 |
| | | | HT | 22 | | 22 | 11 | 7 | 5 | 4 |
| | 28a | WB Eubanks Rd | AUTO | 885 | 50.0 | 885 | 442 | 295 | 221 | 177 |
| | | | MT | 78 | | 78 | 39 | 26 | 19 | 16 |
| | | | HT | 10 | | 10 | 5 | 3 | 2 | 2 |
| | 28b | EB Eubanks Rd | AUTO | 885 | 50.0 | 885 | 442 | 295 | 221 | 177 |
| | | | MT | 78 | | 78 | 39 | 26 | 19 | 16 |
| | | | HT | 10 | | 10 | 5 | 3 | 2 | 2 |
| Area not in model | 29aTM | I40EB/I85NB Exit Ramp to SR1239 | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | 29bTM | SR1239 Entrance Ramp to I40EB/I85NB | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | 29cTM | I40WB/I85SB Exit Ramp to SR1239 | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | 29dTM | SR1239 Entrance Ramp 140WB/I85SB | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| Model 1A/1B | 30aTM | I85SB to I40EB | AUTO | 11 | 70.0 | 11 | 5 | 4 | 3 | 2 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 1 | | 1 | 0 | 0 | 0 | 0 |
| Area not in model | 30bTM | I85SB Junction to I40WB | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| Model 2 | 31aTM | I40WB Exit Ramp to Old NC86 | AUTO | 645 | 45.0 | 645 | 323 | 215 | 161 | 129 |
| | | | MT | 13 | | 13 | 7 | 4 | 3 | 3 |
| | | | HT | 7 | | 7 | 3 | 2 | 2 | 1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Model 2 | 31bTM | Old NC86 Entrance Ramp to I40WB | AUTO | 117 | 45.0 | 117 | 59 | 39 | 29 | 23 |
| | | | MT | 4 | | 4 | 2 | 1 | 1 | 1 |
| | | | HT | 11 | | 11 | 5 | 4 | 3 | 2 |
| | 31cTM | I40EB Exit Ramp to Old NC86 | AUTO | 202 | 45.0 | 202 | 101 | 67 | 50 | 40 |
| | | | MT | 6 | | 6 | 3 | 2 | 2 | 1 |
| | | | HT | 2 | | 2 | 1 | 1 | 1 | 0 |
| | 31dTM | Old NC86 Entrance Ramp to I40EB | AUTO | 137 | 45.0 | 137 | 68 | 46 | 34 | 27 |
| | | | MT | 5 | | 5 | 2 | 2 | 1 | 1 |
| | | | HT | 11 | | 11 | 5 | 4 | 3 | 2 |
| Model 3 | 32aTM | I40WB Exit Ramp to New Hope Church Rd | AUTO | 240 | 45.0 | 240 | 120 | 80 | 60 | 48 |
| | | | MT | 5 | | 5 | 2 | 2 | 1 | 1 |
| | | | HT | 2 | | 2 | 1 | 1 | 1 | 0 |
| | 32bTM | New Hope Church Rd Entrance Ramp to I40WB | AUTO | 67 | 45.0 | 67 | 34 | 22 | 17 | 13 |
| | | | MT | 7 | | 7 | 4 | 2 | 2 | 1 |
| | | | HT | 6 | | 6 | 3 | 2 | 1 | 1 |
| | 32cTM | I40EB Exit Ramp to New Hope Church Rd | AUTO | 77 | 45.0 | 77 | 38 | 26 | 19 | 15 |
| | | | MT | 2 | | 2 | 1 | 1 | 1 | 0 |
| | | | HT | 1 | | 1 | 0 | 0 | 0 | 0 |
| | 32dTM | New Hope Church Rd Entrance Ramp to I40EB | AUTO | 155 | 45.0 | 155 | 77 | 52 | 39 | 31 |
| | | | MT | 5 | | 5 | 3 | 2 | 1 | 1 |
| | | | HT | 12 | | 12 | 6 | 4 | 3 | 2 |
| Model 4A/4B | 33aTM | I40WB Exit Ramp to NC86 | AUTO | 250 | 45.0 | 250 | 125 | 83 | 62 | 50 |
| | | | MT | 8 | | 8 | 4 | 3 | 2 | 2 |
| | | | HT | 3 | | 3 | 1 | 1 | 1 | 1 |
| | 33bTM | NC86 Entrance Ramp to I40WB | AUTO | 140 | 70.0 | 140 | 70 | 47 | 35 | 28 |
| | | | MT | 5 | | 5 | 2 | 2 | 1 | 1 |
| | | | HT | 11 | | 11 | 5 | 4 | 3 | 2 |
| | 33cTM | I40EB Exit Ramp to NC86 | AUTO | 645 | 55.0 | 645 | 323 | 215 | 161 | 129 |
| | | | MT | 13 | | 13 | 7 | 4 | 3 | 3 |
| | | | HT | 7 | | 7 | 3 | 2 | 2 | 1 |
| | 33dTM | NC86 Entrance Ramp to I40EB | AUTO | 928 | 70.0 | 928 | 464 | 309 | 232 | 186 |
| | | | MT | 31 | | 31 | 15 | 10 | 8 | 6 |
| | | | HT | 61 | | 61 | 31 | 20 | 15 | 12 |
| Area not in model | 34aTM | NC86SB Exit to Eubanks Rd | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | 34bTM | Eubanks Rd Entrance to NC86SB | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | 35aTM | N86 NB Exit to Whitfield Rd | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | 35bTM | Whitfield Rd Entrance to NC86 NB | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |
| Model 6 | 36 | I40WB east of US15/501 | AUTO | 3864 | 70.0 | 3864 | 1932 | 1288 | 966 | 773 |
| | | | MT | 126 | | 126 | 63 | 42 | 32 | 25 |
| | | | HT | 210 | | 210 | 105 | 70 | 53 | 42 |
| | 37 | I40EB east of US15/501 | AUTO | 3864 | 70.0 | 3864 | 1932 | 1288 | 966 | 773 |
| | | | MT | 126 | | 126 | 63 | 42 | 32 | 25 |
| | | | HT | 210 | | 210 | 105 | 70 | 53 | 42 |
| Model 5 | 38a | Sunrise Rd SB | AUTO | 216 | 45.0 | 216 | 108 | 72 | 54 | 43 |
| | | | MT | 7 | | 7 | 3 | 2 | 2 | 1 |
| | | | HT | 2 | | 2 | 1 | 1 | 1 | 0 |
| | 38b | Sunrise Rd NB | AUTO | 216 | 45.0 | 216 | 108 | 72 | 54 | 43 |
| | | | MT | 7 | | 7 | 3 | 2 | 2 | 1 |
| | | | HT | 2 | | 2 | 1 | 1 | 1 | 0 |
| | 39a | Erwin Rd SB | AUTO | 704 | 45.0 | 704 | 352 | 235 | 176 | 141 |
| | | | MT | 15 | | 15 | 7 | 5 | 4 | 3 |
| | | | HT | 7 | | 7 | 4 | 2 | 2 | 1 |
| | 39b | Erwin Rd NB | AUTO | 704 | 45.0 | 704 | 352 | 235 | 176 | 141 |
| | | | MT | 15 | | 15 | 7 | 5 | 4 | 3 |
| | | | HT | 7 | | 7 | 4 | 2 | 2 | 1 |
| Model 6 | 40a | US15/501NB north of I40 | AUTO | 3469 | 45.0 | 3469 | 1734 | 1156 | 867 | 694 |
| | | | MT | 72 | | 72 | 36 | 24 | 18 | 14 |
| | | | HT | 36 | | 36 | 18 | 12 | 9 | 7 |
| | 40b | US15/501SB north of I40 | AUTO | 3469 | 45.0 | 3469 | 1734 | 1156 | 867 | 694 |
| | | | MT | 72 | | 72 | 36 | 24 | 18 | 14 |
| | | | HT | 36 | | 36 | 18 | 12 | 9 | 7 |
| | 41a | US15/501NB south of I40 | AUTO | 2297 | 45.0 | 2297 | 1148 | 766 | 574 | 459 |
| | | | MT | 47 | | 47 | 24 | 16 | 12 | 9 |
| | | | HT | 24 | | 24 | 12 | 8 | 6 | 5 |
| | 41b | US15/501SB south of I40 | AUTO | 2297 | 45.0 | 2297 | 1148 | 766 | 574 | 459 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Model 6** | 41b | US15/501SB south of I40 | MT | 47 | 45.0 | 47 | 24 | 16 | 12 | 9 |
| | | | HT | 24 | | 24 | 12 | 8 | 6 | 5 |
| | 42aTM | I40WB Exit Ramp to US15/501 | AUTO | 645 | 45.0 | 645 | 323 | 215 | 161 | 129 |
| | | | MT | 13 | | 13 | 7 | 4 | 3 | 3 |
| | | | HT | 7 | | 7 | 3 | 2 | 2 | 1 |
| | 42bTM | US15/501 Entrance Ramp to I40WB | AUTO | 769 | 45.0 | 769 | 384 | 256 | 192 | 154 |
| | | | MT | 25 | | 25 | 13 | 8 | 6 | 5 |
| | | | HT | 51 | | 51 | 25 | 17 | 13 | 10 |
| | 42cTM | I40EB Exit Ramp to US15/501 | AUTO | 221 | 45.0 | 221 | 111 | 74 | 55 | 44 |
| | | | MT | 5 | | 5 | 2 | 2 | 1 | 1 |
| | | | HT | 2 | | 2 | 1 | 1 | 1 | 0 |
| | 42dTM | US15/501 Entrance Ramp to 140EB | AUTO | 596 | 45.0 | 596 | 298 | 199 | 149 | 119 |
| | | | MT | 19 | | 19 | 10 | 6 | 5 | 4 |
| | | | HT | 32 | | 32 | 16 | 11 | 8 | 6 |
| **Model 1A/1B** | 43 | I40WB ramp to I85NB | AUTO | 18 | 70.0 | 18 | 9 | 6 | 5 | 4 |
| | | | MT | 15 | | 15 | 8 | 5 | 4 | 3 |
| | | | HT | 12 | | 12 | 6 | 4 | 3 | 2 |
| **Area not in model** | 44 | I85/I40_to_I85NB | AUTO | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | MT | 0 | | 0 | 0 | 0 | 0 | 0 |
| | | | HT | 0 | | 0 | 0 | 0 | 0 | 0 |

# Existing Traffic

| Segment # | Segment Description | TNM Name | Vehicles Per Day (FORECAST) | Vehicles Per Day (LOS C) | Lesser (VPD vs. LOS C) | K Factor % | | Directional % | | Car % | | Medium % | | Heavy % | | TNM Car Volume | TNM Medium Volume | TNM Heavy Volume | Total Truck % | Comments | Number of Lanes | TNM Car Per Lane | TNM MT Per Lane | TNM HT Per Lane |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I40WB/I85SB west of SR1239 | Outside of Area | 87400 | 92200 | VPD | 9% | 7866 | 65% | 5113 | 87.00% | 4448 | 3% | 153 | 10% | 511 | 4448 | 153 | 511 | 13% | | 4 | 1112 | 38 | 128 |
| 2 | I40EB/I85NB west of SR1239 | Outside of Area | 87400 | 92200 | VPD | 9% | 7866 | 35% | 2753 | 87.00% | 2395 | 3% | 83 | 10% | 275 | 2395 | 83 | 275 | 13% | | 4 | 599 | 21 | 69 |
| 3 | I40WB/I85SB west junction | I85/I40_SB/WB_* | 83500 | 92200 | VPD | 9% | 7515 | 65% | 4885 | 87.00% | 4250 | 3% | 147 | 10% | 488 | 4250 | 147 | 488 | 13% | | 5 | 850 | 29 | 98 |
| 4 | I40EB/I85NB west junction | I85/I40_NB/EB_* | 83500 | 92200 | VPD | 9% | 7515 | 35% | 2630 | 87.00% | 2288 | 3% | 79 | 10% | 263 | 2288 | 79 | 263 | 13% | | 4 | 572 | 20 | 66 |
| 5 | I40WB west Old NC86 | I40WB_* | 45700 | 48200 | VPD | 8% | 3656 | 65% | 2376 | 89.00% | 2115 | 3% | 71 | 8% | 190 | 2115 | 71 | 190 | 11% | | 2 | 1057 | 36 | 95 |
| 6 | I40EB west Old NC86 | I40EB_* | 45700 | 48200 | VPD | 8% | 3656 | 35% | 1280 | 89.00% | 1139 | 3% | 38 | 8% | 102 | 1139 | 38 | 102 | 11% | | 2 | 569 | 19 | 51 |
| 7 | I40WB west New Hope Church Rd | I40WB_west_New_Hope_Church_* | 54500 | [redacted] | LOS | 8% | 3856 | 65% | 2506 | 90.00% | 2256 | 3% | 75 | 7% | 175 | 2256 | 75 | 175 | 10% | | 2 | 1128 | 38 | 88 |
| 8 | I40EB west New Hope Church Rd | I40EB_west_New_Hope_Church_* | 54500 | [redacted] | LOS | 8% | 3856 | 35% | 1350 | 90.00% | 1215 | 3% | 40 | 7% | 94 | 1215 | 40 | 94 | 10% | | 2 | 607 | 20 | 47 |
| 9 | I40WB west NC86 | I40WB_west_NC86_* | 58200 | [redacted] | LOS | 8% | 3856 | 65% | 2506 | 90.00% | 2256 | 3% | 75 | 7% | 175 | 2256 | 75 | 175 | 10% | | 2 | 1128 | 38 | 88 |
| 10 | I40EB west NC86 | I40EB_west_NC86_* | 58200 | [redacted] | LOS | 8% | 3856 | 35% | 1350 | 90.00% | 1215 | 3% | 40 | 7% | 94 | 1215 | 40 | 94 | 10% | | 2 | 607 | 20 | 47 |
| 11 | I40WB west of US15/501 | I40WB_west_US15/501_*_* | 64300 | [redacted] | LOS | 8% | 3856 | 60% | 2314 | 91.00% | 2105 | 3% | 69 | 6% | 139 | 2105 | 69 | 139 | 9% | | 2 | 1053 | 35 | 69 |
| 12 | I40EB west of US15/501 | I40EB_west_US15/501_*_* | 64300 | [redacted] | LOS | 8% | 3856 | 40% | 1542 | 91.00% | 1404 | 3% | 46 | 6% | 93 | 1404 | 46 | 93 | 9% | | 2 | 702 | 23 | 46 |
| 13 | I85SB east junction | I85SB_east_I40_* | 38600 | 69100 | VPD | 9% | 3474 | 65% | 2258 | 85.00% | 1919 | 3% | 68 | 12% | 271 | 1919 | 68 | 271 | 15% | | 3 | 640 | 23 | 90 |
| 14 | I85NB east junction | I85NB_east_I40_* | 38600 | 69100 | VPD | 9% | 3474 | 35% | 1216 | 85.00% | 1034 | 3% | 36 | 12% | 146 | 1034 | 36 | 146 | 15% | | 3 | 345 | 12 | 49 |
| 15a | SR1239 NB north I40/I85 | Outside of Area | 6000 | [redacted] | | 9% | 540 | 55% | 297 | 94.00% | 279 | 2% | 6 | 4% | 12 | 279 | 6 | 12 | 6% | Not included in model due to project limits: I wasn't sure what to do with nu | 2 | 140 | 3 | 6 |
| 15b | SR1239 SB north I40/I85 | Outside of Area | 6000 | [redacted] | | 9% | 540 | 45% | 243 | 94.00% | 228 | 2% | 5 | 4% | 10 | 228 | 5 | 10 | 6% | Not included in model due to project limits: I wasn't sure what to do with nu | 2 | 114 | 2 | 5 |
| 16a | SR1239 SB south I40/I85 | Outside of Area | 1100 | [redacted] | | 10% | 110 | 60% | 66 | 94.00% | 62 | 5% | 3 | 1% | 1 | 62 | 3 | 1 | 6% | Not included in model due to project limits: I wasn't sure what to do with nu | 1 | 62 | 3 | 1 |
| 16b | SR1239 NB south I40/I85 | Outside of Area | 1100 | [redacted] | | 10% | 110 | 40% | 44 | 94.00% | 41 | 5% | 2 | 1% | 0 | 41 | 2 | 0 | 6% | Not included in model due to project limits: I wasn't sure what to do with nu | 1 | 41 | 2 | 0 |
| 17a | NB Dimmocks Mill Rd | Dimmocks_Mill_Rd_NB | 1300 | [redacted] | | 10% | 130 | 60% | 78 | 94.00% | 73 | 5% | 4 | 1% | 1 | 73 | 4 | 1 | 6% | | 1 | 73 | 4 | 1 |
| 17b | SB Dimmocks Mill Rd | Dimmocks_Mill_Rd_SB | 1300 | [redacted] | | 10% | 130 | 40% | 52 | 94.00% | 49 | 5% | 3 | 1% | 1 | 49 | 3 | 1 | 6% | | 1 | 49 | 3 | 1 |
| 18a | SB Orange Grove Rd | Orange_Grove_Rd_SB | 6400 | [redacted] | | 9% | 576 | 60% | 346 | 96.00% | 332 | 3% | 10 | 1% | 3 | 332 | 10 | 3 | 4% | | 1 | 332 | 10 | 3 |
| 18b | NB Orange Grove Rd | Orange_Grove_Rd_NB | 6400 | [redacted] | | 9% | 576 | 40% | 230 | 96.00% | 221 | 3% | 7 | 1% | 2 | 221 | 7 | 2 | 4% | | 1 | 221 | 7 | 2 |
| 19a | NB Old NC86 north I40 | NC86_NB_northI40_* | 14500 | [redacted] | | 9% | 1305 | 55% | 718 | 97.00% | 696 | 2% | 14 | 1% | 7 | 696 | 14 | 7 | 3% | | 2 | 348 | 7 | 4 |
| 19b | SB Old NC86 north I40 | NC86_SB_northI40_* | 14500 | [redacted] | | 9% | 1305 | 45% | 587 | 97.00% | 570 | 2% | 12 | 1% | 6 | 570 | 12 | 6 | 3% | | 2 | 285 | 6 | 3 |
| 20a | SB Old NC86 south I40 | NC86_SB_southI40 | 6300 | [redacted] | | 10% | 630 | 55% | 347 | 96.00% | 333 | 3% | 10 | 1% | 3 | 333 | 10 | 3 | 4% | | 1 | 333 | 10 | 3 |
| 20b | NB Old NC86 south I40 | NC86_NB_southI40 | 6300 | [redacted] | | 10% | 630 | 45% | 284 | 96.00% | 272 | 3% | 9 | 1% | 3 | 272 | 9 | 3 | 4% | | 1 | 272 | 9 | 3 |
| 21a | NB New Hope Church Rd north I40 | New_Hope_NB_northI40 | 5200 | [redacted] | | 9% | 468 | 55% | 257 | 97.00% | 250 | 2% | 5 | 1% | 3 | 250 | 5 | 3 | 3% | | 1 | 250 | 5 | 3 |
| 21b | SB New Hope Church Rd north I40 | New_Hope_SB_northI40 | 5200 | [redacted] | | 9% | 468 | 45% | 211 | 97.00% | 204 | 2% | 4 | 1% | 2 | 204 | 4 | 2 | 3% | | 1 | 204 | 4 | 2 |
| 22a | SB New Hope Church Rd south I40 | New_Hope_SB_southI40 | 3700 | [redacted] | | 10% | 370 | 60% | 222 | 96.00% | 213 | 3% | 7 | 1% | 2 | 213 | 7 | 2 | 4% | | 1 | 213 | 7 | 2 |
| 22b | NB New Hope Church Rd south I40 | New_Hope_NB_southI40 | 3700 | [redacted] | | 10% | 370 | 40% | 148 | 96.00% | 142 | 3% | 4 | 1% | 1 | 142 | 4 | 1 | 4% | | 1 | 142 | 4 | 1 |
| 23a | NB NC86 north I40 | NC86_NB_northI40_* | 11200 | [redacted] | | 10% | 1120 | 55% | 616 | 96.00% | 591 | 3% | 18 | 1% | 6 | 591 | 18 | 6 | 4% | Will make adjustments to counts in turning lane areas where applicable | 1 | 591 | 18 | 6 |
| 23b | SB NC86 north I40 | NC86_SB_northI40_*_* | 11200 | [redacted] | | 10% | 1120 | 45% | 504 | 96.00% | 484 | 3% | 15 | 1% | 5 | 484 | 15 | 5 | 4% | Will make adjustments to counts in turning lane areas where applicable | 3 | 161 | 5 | 2 |
| 24a | NB NC86 north Whitfield Rd | NC86_NB_north_Whitfield | 7100 | [redacted] | | 10% | 710 | 65% | 462 | 96.00% | 443 | 3% | 14 | 1% | 5 | 443 | 14 | 5 | 4% | | 2 | 222 | 7 | 2 |
| 24b | SB NC86 north Whitfield Rd | NC86_SB_north_Whitfield_*_* | 7100 | [redacted] | | 10% | 710 | 35% | 249 | 96.00% | 239 | 3% | 7 | 1% | 2 | 239 | 7 | 2 | 4% | | 2 | 119 | 4 | 1 |
| 25a | WB Whitfield Rd | Whitfield_WB | 4900 | [redacted] | | 10% | 490 | 60% | 294 | 97.00% | 285 | 2% | 6 | 1% | 3 | 285 | 6 | 3 | 3% | | 1 | 285 | 6 | 3 |
| 25b | EB Whitfield Rd | Whitfield_EB | 4900 | [redacted] | | 10% | 490 | 40% | 196 | 97.00% | 190 | 2% | 4 | 1% | 2 | 190 | 4 | 2 | 3% | | 1 | 190 | 4 | 2 |
| 26a | NB NC86 north Eubanks Rd | NC86_NB_north_Eubanks_* | 33500 | [redacted] | | 10% | 3350 | 55% | 1843 | 97.00% | 1787 | 2% | 37 | 1% | 18 | 1787 | 37 | 18 | 3% | | 2 | 894 | 18 | 9 |
| 26b | SB NC86 north Eubanks Rd | NC86_SB_north_Eubanks_* | 33500 | [redacted] | | 10% | 3350 | 45% | 1508 | 97.00% | 1462 | 2% | 30 | 1% | 15 | 1462 | 30 | 15 | 3% | | 2 | 731 | 15 | 8 |
| 27a | NB NC86 south Eubanks Rd | NC86_NB_south_Eubanks_* | 32300 | [redacted] | | 10% | 3230 | 60% | 1938 | 97.00% | 1880 | 2% | 39 | 1% | 19 | 1880 | 39 | 19 | 3% | | 3 | 627 | 13 | 6 |
| 27b | SB NC86 south Eubanks Rd | NC86_SB_south_Eubanks_* | 32300 | [redacted] | | 10% | 3230 | 40% | 1292 | 97.00% | 1253 | 2% | 26 | 1% | 13 | 1253 | 26 | 13 | 3% | | 2 | 627 | 13 | 6 |
| 28a | WB Eubanks Rd | Eubanks_WB | 9600 | [redacted] | | 9% | 864 | 60% | 518 | 91.00% | 472 | 8% | 41 | 1% | 5 | 472 | 41 | 5 | 9% | | 1 | 472 | 41 | 5 |
| 28b | EB Eubanks Rd | Eubanks_EB | 9600 | [redacted] | | 9% | 864 | 40% | 346 | 91.00% | 314 | 8% | 28 | 1% | 3 | 314 | 28 | 3 | 9% | | 1 | 314 | 28 | 3 |
| 29aTM | I40EB/I85NB Exit Ramp to SR1239 | Outside of Area | 100 | [redacted] | | 10% | 10 | 60% | 6 | 94.00% | 6 | 5% | 0 | 1% | 0 | 6 | 0 | 0 | 6% | | 1 | 6 | 0 | 0 |
| 29bTM | SR1239 Entrance Ramp to I40EB/I85NB | Outside of Area | 200 | [redacted] | | 9% | 18 | 35% | 6 | 87.00% | 5 | 3% | 0 | 10% | 1 | 5 | 0 | 1 | 13% | | 1 | 5 | 0 | 1 |
| 29cTM | I40WB/I85SB Exit Ramp to SR1239 | Outside of Area | 600 | [redacted] | | 9% | 54 | 55% | 30 | 94.00% | 28 | 2% | 1 | 4% | 1 | 28 | 1 | 1 | 6% | | 1 | 28 | 1 | 1 |
| 29dTM | SR1239 Entrance Ramp 140WB/I85SB | Outside of Area | 4600 | [redacted] | | 9% | 414 | 65% | 269 | 87.00% | 234 | 3% | 8 | 10% | 27 | 234 | 8 | 27 | 13% | | 1 | 234 | 8 | 27 |
| 30aTM | I40WB Exit Ramp to I85NB | I85SB_to_I40EB | 400 | [redacted] | | 8% | 32 | 35% | 11 | 89.00% | 10 | 3% | 0 | 8% | 1 | 10 | 0 | 1 | 11% | | 1 | 10 | 0 | 1 |
| 30bTM | I85SB Junction to I40WB | I85SB_to_I85/I40_* | 38200 | [redacted] | | 9% | 3438 | 65% | 2235 | 87.00% | 1944 | 3% | 67 | 10% | 223 | 1944 | 67 | 223 | 13% | | 3 | 648 | 22 | 74 |
| 31aTM | I40WB Exit Ramp to Old NC86 | I40WB_exit_ramp | 9400 | [redacted] | | 9% | 846 | 55% | 465 | 97.00% | 451 | 2% | 9 | 1% | 5 | 451 | 9 | 5 | 3% | | 2 | 226 | 5 | 2 |
| 31bTM | Old NC86 Entrance Ramp to I40WB | I40WB_entrance_ramp | 700 | [redacted] | | 8% | 56 | 65% | 36 | 89.00% | 32 | 3% | 1 | 8% | 3 | 32 | 1 | 3 | 11% | | 1 | 32 | 1 | 3 |
| 31cTM | I40EB Exit Ramp to Old NC86 | I40EB_exit_ramp | 900 | [redacted] | | 10% | 90 | 55% | 50 | 96.00% | 48 | 3% | 1 | 1% | 0 | 48 | 1 | 0 | 4% | | 2 | 24 | 1 | 0 |
| 31dTM | Old NC86 Entrance Ramp to I40EB | I40EB_entrance_ramp | 1000 | [redacted] | | 8% | 80 | 35% | 28 | 90.00% | 25 | 3% | 1 | 7% | 2 | 25 | 1 | 2 | 10% | | 1 | 25 | 1 | 2 |
| 32aTM | I40WB Exit Ramp to New Hope Church Rd | I40WB_exit_ramp | 2900 | [redacted] | | 9% | 261 | 55% | 144 | 97.00% | 139 | 2% | 3 | 1% | 1 | 139 | 3 | 1 | 3% | | 1 | 139 | 3 | 1 |
| 32bTM | New Hope Church Rd Entrance Ramp to I40WB | I40WB_entrance_ramp | 600 | [redacted] | | 8% | 48 | 65% | 31 | 90.00% | 28 | 3% | 1 | 7% | 2 | 28 | 1 | 2 | 10% | | 1 | 28 | 1 | 2 |
| 32cTM | I40EB Exit Ramp to New Hope Church Rd | I40EB_exit_ramp | 300 | [redacted] | | 10% | 30 | 60% | 18 | 96.00% | 17 | 3% | 1 | 1% | 0 | 17 | 1 | 0 | 4% | | 1 | 17 | 1 | 0 |
| 32dTM | New Hope Church Rd Entrance Ramp to I40EB | I40EB_entrance_ramp | 1700 | [redacted] | | 8% | 136 | 35% | 48 | 90.00% | 43 | 3% | 1 | 7% | 3 | 43 | 1 | 3 | 10% | | 1 | 43 | 1 | 3 |
| 33aTM | I40WB Exit Ramp to NC86 | I40EWB_exit_ramp_*_* | 2300 | [redacted] | | 10% | 230 | 55% | 127 | 96.00% | 121 | 3% | 4 | 1% | 1 | 121 | 4 | 1 | 4% | Majority of ramp is one lane will break traffic out amongst remaining lanes t | 3 | 40 | 1 | 0 |
| 33bTM | NC86 Entrance Ramp to I40WB | I40WB_entrance_ramp_*_* | 600 | [redacted] | | 8% | 48 | 65% | 31 | 90.00% | 28 | 3% | 1 | 7% | 2 | 28 | 1 | 2 | 10% | Majority of ramp is one lane will break traffic out amongst remaining lanes t | 2 | 14 | 0 | 1 |
| 33cTM | I40EB Exit Ramp to NC86 | I40EB_exit_ramp_*_* | 10400 | [redacted] | | 10% | 1040 | 45% | 468 | 97.00% | 454 | 2% | 9 | 1% | 5 | 454 | 9 | 5 | 3% | Majority of ramp is one lane will break traffic out amongst remaining lanes t | 3 | 151 | 3 | 2 |
| 33dTM | NC86 Entrance Ramp to I40EB | I40EB_entrance_ramp | 14800 | [redacted] | | 8% | 1184 | 40% | 474 | 91.00% | 431 | 3% | 14 | 6% | 28 | 431 | 14 | 28 | 9% | Majority of ramp is one lane will break traffic out amongst remaining lanes t | 1 | 431 | 14 | 28 |
| 34aTM | NC86SB Exit to Eubanks Rd | | 5400 | [redacted] | | 9% | 486 | 60% | 292 | 91.00% | 265 | 8% | 23 | 1% | 3 | 265 | 23 | 3 | 9% | Broke traffic by right turns onto Eubanks Rd and NC86 SB | 1 | 265 | 23 | 3 |
| 34bTM | Eubanks Rd Entrance to NC86SB | | 4200 | [redacted] | | 10% | 420 | 40% | 168 | 97.00% | 163 | 2% | 3 | 1% | 2 | 163 | 3 | 2 | 3% | Broke traffic by right turns onto Eubanks Rd and NC86 SB | 1 | 163 | 3 | 2 |
| 35aTM | N86 NB Exit to Whitfield Rd | | 4500 | [redacted] | | 10% | 450 | 40% | 180 | 97.00% | 175 | 2% | 4 | 1% | 2 | 175 | 4 | 2 | 3% | Broke traffic by right turns onto Whitfield Rd and NC86 NB | 1 | 175 | 4 | 2 |
| 35bTM | Whitfield Rd Entrance to NC86 NB | | 400 | [redacted] | | 10% | 40 | 65% | 26 | 96.00% | 25 | 3% | 1 | 1% | 0 | 25 | 1 | 0 | 4% | Broke traffic by right turns onto Whitfield Rd and NC86 NB | 1 | 25 | 1 | 0 |
| 36 | I40WB east of US15/501 | I40WB_east_US15/501_* | 81200 | [redacted] | | 8% | 3856 | 60% | 2314 | 92.00% | 2129 | 3% | 69 | 5% | 116 | 2129 | 69 | 116 | 8% | | 3 | 710 | 23 | 39 |
| 37 | I40EB east of US15/501 | I40EB_east_US15/501_* | 81200 | [redacted] | | 8% | 3856 | 40% | 1542 | 92.00% | 1419 | 3% | 46 | 5% | 77 | 1419 | 46 | 77 | 8% | | 3 | 473 | 15 | 26 |
| 38a | Sunrise Rd SB | Sunrise_SB | 2000 | [redacted] | | 11% | 220 | 55% | 121 | 96.00% | 116 | 3% | 4 | 1% | 1 | 116 | 4 | 1 | 4% | | 1 | 116 | 4 | 1 |
| 38b | Sunrise Rd NB | Sunrise_NB | 2000 | [redacted] | | 11% | 220 | 45% | 99 | 96.00% | 95 | 3% | 3 | 1% | 1 | 95 | 3 | 1 | 4% | | 1 | 95 | 3 | 1 |
| 39a | Erwin Rd SB | Erwin_SB | 7500 | [redacted] | | 12% | 900 | 55% | 495 | 97.00% | 480 | 2% | 10 | 1% | 5 | 480 | 10 | 5 | 3% | | 1 | 480 | 10 | 5 |
| 39b | Erwin Rd NB | Erwin_NB | 7500 | [redacted] | | 12% | 900 | 45% | 405 | 97.00% | 393 | 2% | 8 | 1% | 4 | 393 | 8 | 4 | 3% | | 1 | 393 | 8 | 4 |
| 40a | US15/501NB north of I40 | US15/501NB_east_I40_*_* | 54000 | [redacted] | | 8% | 4320 | 55% | 2376 | 97.00% | 2305 | 2% | 48 | 1% | 24 | 2305 | 48 | 24 | 3% | | 3 | 768 | 16 | 8 |
| 40b | US15/501SB north of I40 | US15/501SB_east_I40_*_* | 54000 | [redacted] | | 8% | 4320 | 45% | 1944 | 97.00% | 1886 | 2% | 39 | 1% | 19 | 1886 | 39 | 19 | 3% | | 3 | 629 | 13 | 6 |
| 41a | US15/501NB south of I40 | US15/501NB_west_I40_*_* | 48500 | [redacted] | | 8% | 3880 | 55% | 2134 | 97.00% | 2070 | 2% | 43 | 1% | 21 | 2070 | 43 | 21 | 3% | Used numbers from section north of I40 | 3 | 690 | 14 | 7 |
| 41b | US15/501SB south of I40 | US15/501SB_west_I40_*_* | 48500 | [redacted] | | 8% | 3880 | 45% | 1746 | 97.00% | 1694 | 2% | 35 | 1% | 17 | 1694 | 35 | 17 | 3% | Used numbers from section north of I40 | 4 | 423 | 9 | 4 |
| 42aTM | I40WB Exit Ramp to US15/501 | 140WB_exit_ramp_*_* | 15300 | [redacted] | | 8% | 1224 | 55% | 673 | 97.00% | 653 | 2% | 13 | 1% | 7 | 653 | 13 | 7 | 3% | | 4 | 163 | 3 | 2 |
| 42bTM | US15/501 Entrance Ramp to I40WB | I40WB_entrance_ramp_*_* | 7400 | [redacted] | | 8% | 592 | 60% | 355 | 91.00% | 323 | 3% | 11 | 6% | 21 | 323 | 11 | 21 | 9% | | 2 | 162 | 5 | 11 |
| 42cTM | I40EB Exit Ramp to US15/501 | I40EB_exit_ramp_*_* | 4100 | [redacted] | | 8% | 328 | 45% | 148 | 97.00% | 143 | 2% | 3 | 1% | 1 | 143 | 3 | 1 | 3% | | 3 | 48 | 1 | 0 |
| 42dTM | US15/501 Entrance Ramp to 140EB | I40EB_entrance_ramp | 13100 | [redacted] | | 8% | 1048 | 40% | 419 | 92.00% | 386 | 3% | 13 | 5% | 21 | 386 | 13 | 21 | 8% | | 1 | 386 | 13 | 21 |
| 43 | I40WB ramp to I85NB | I40WB_to_I85NB | | [redacted] | | | 0 | 0% | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | | 1 | 18 | 15 | 12 |
| 44 | I85/I40_to_I85NB | I85/I40_to_I85NB_* | 38200 | [redacted] | | 9% | 3438 | 35% | 1203 | 85.00% | 1023 | 3% | 36 | 12% | 144 | 1023 | 36 | 144 | 15% | | 3 | 341 | 12 | 48 |
| 45 | I40WB through the Old NC86 junction | I40WB_overpass_* | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 2 | 1015 | 35 | 87 |
| 46 | I40EB through the Old NC86 junction | I40EB_overpass_* | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 2 | 558 | 19 | 51 |
| 47 | Old NC86 NB overpass | Old_NC86NB_overpass | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 1 | 247 | 8 | 1 |
| 48 | Old NC86 SB overpass | Old_NC86SB_overpass_* | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 2 | 269 | 5 | 1 |
| 49 | I40 New Hope Church WB overpass | I40WB_overpass_* | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 2 | 1058 | 36 | 87 |
| 50 | I40 New Hope Church EB overpass | I40EB_overpass_* | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 2 | 599 | 20 | 47 |
| 51 | New Hope Church overpass NB | New_Hope_Church_NB_overpass | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 1 | 99 | 3 | 0 |
| 52 | New Hope Church overpass SB | New_Hope_Church_SB_overpass | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 1 | 176 | 3 | 0 |
| 53 | I40WB through the NC86 junction | I40WB_overpass_* | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 2 | 1032 | 34 | 69 |
| 54 | 140EB through the NC86 junction | I40EB_overpass_* | | [redacted] | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | Look at methodology to figure totals | 2 | 532 | 19 | 46 |
| 55 | NC86 NB overpass | NC86NB_overpass_*_* | 400 | [redacted] | | 8% | 32 | 35% | 11 | 89.00% | 10 | 3% | 0 | 8% | 1 | 10 | 0 | 1 | 11% | Look at methodology to figure totals | 3 | 452 | 8 | 0 |
| 56 | NC86 SB overpass | NC86SB_overpass_*_* | | [redacted] | | | | | | | | | | | | | | | | Look at methodology to figure totals | 2 | 235 | 7 | 2 |
| 57 | I40WB overpass US15/501 | I40WB_overpass_* | | [redacted] | | | | | | | | | | | | | | | | Look at methodology to figure totals | 3 | 655 | 22 | 38 |
| 58 | I40EB overpass US15/501 | I40EB_overpass_* | | [redacted] | | | | | | | | | | | | | | | | Look at methodology to figure totals | 3 | 452 | 15 | 31 |
| 59 | US15/501 EB overpass | US15/501EB_overpass_*_* | | [redacted] | | | | | | | | | | | | | | | | Look at methodology to figure totals | 5 | 337 | 6 | 0 |
| 60 | US15/501 WB overpass | US15/501WB_overpass_*_* | | [redacted] | | | | | | | | | | | | | | | | Look at methodology to figure totals | 5 | 345 | 7 | 2 |
| 61 | I85/I40 to I40EB | I85/I40_to_I40EB_* | | [redacted] | | | | | | | | | | | | | | | | | 2 | 5 | 0 | 0 |

Major assumption was that all exit ramps flowed onto the side roads in the direction of the arrow (i.e. for the I40WB exit onto US15/501 traffic would flow NB and for the I40EB exit onto US15/501 traffic would flow SB)

# No-Build Traffic

| Segment # | Segment Description | TNM Name | Vehicles Per Day (FORECAST) | Vehicles Per Day (LOS C) | Lesser (VPD vs. LOS C) | K Factor % | | Directional % | | Car % | | Medium % | | Heavy % | | TNM Car Volume | TNM Medium Volume | TNM Heavy Volume | Total Truck % | Comments | Number of Lanes | TNM Car Per Lane | TNM MT Per Lane | TNM HT Per Lane |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I40WB/I85SB west of SR1239 | Outside of Area | 114300 | 92200 | LOS | 9% | 8298 | 65% | 5394 | 87.00% | 4693 | 3% | 162 | 10% | 539 | 4693 | 162 | 539 | 13% | | 4 | 1173 | 40 | 135 |
| 2 | I40EB/I85NB west of SR1239 | Outside of Area | 114300 | 92200 | LOS | 9% | 8298 | 35% | 2904 | 87.00% | 2527 | 3% | 87 | 10% | 290 | 2527 | 87 | 290 | 13% | | 4 | 632 | 22 | 73 |
| 3 | I40WB/I85SB west of I85 junction | I85/I40_SB/WB_* | 112300 | 92200 | LOS | 9% | 8298 | 65% | 5394 | 87.00% | 4693 | 3% | 162 | 10% | 539 | 4693 | 162 | 539 | 13% | | 5 | 939 | 32 | 108 |
| 4 | I40EB/I85NB west of I85 junction | I85/I40_NB/EB_* | 112300 | 92200 | LOS | 9% | 8298 | 35% | 2904 | 87.00% | 2527 | 3% | 87 | 10% | 290 | 2527 | 87 | 290 | 13% | | 4 | 632 | 22 | 73 |
| 5 | I40WB west Old NC86 | I40WB_* | 51100 | 48200 | LOS | 8% | 3856 | 65% | 2506 | 89.00% | 2231 | 3% | 75 | 8% | 201 | 2231 | 75 | 201 | 11% | | 2 | 1115 | 38 | 100 |
| 6 | I40EB west Old NC86 | I40EB_* | 51100 | 48200 | LOS | 8% | 3856 | 35% | 1350 | 89.00% | 1201 | 3% | 40 | 8% | 108 | 1201 | 40 | 108 | 11% | | 2 | 601 | 20 | 54 |
| 7 | I40WB west New Hope Church Rd | I40WB_west_New_Hope_Church_* | 64000 | 48200 | LOS | 8% | 3856 | 65% | 2506 | 90.00% | 2256 | 3% | 75 | 7% | 175 | 2256 | 75 | 175 | 10% | | 2 | 1128 | 38 | 88 |
| 8 | I40EB west New Hope Church Rd | I40EB_west_New_Hope_Church_* | 64000 | 48200 | LOS | 8% | 3856 | 35% | 1350 | 90.00% | 1215 | 3% | 40 | 7% | 94 | 1215 | 40 | 94 | 10% | | 2 | 607 | 20 | 47 |
| 9 | I40WB west NC86 | I40WB_west_NC86_* | 69200 | 48200 | LOS | 8% | 3856 | 65% | 2506 | 90.00% | 2256 | 3% | 75 | 7% | 175 | 2256 | 75 | 175 | 10% | | 2 | 1128 | 38 | 88 |
| 10 | I40EB west NC86 | I40EB_west_NC86_* | 69200 | 48200 | LOS | 8% | 3856 | 35% | 1350 | 90.00% | 1215 | 3% | 40 | 7% | 94 | 1215 | 40 | 94 | 10% | | 2 | 607 | 20 | 47 |
| 11 | I40WB west US15/501 | I40WB_west_US15/501_*_* | 80300 | 48200 | LOS | 8% | 3856 | 60% | 2314 | 91.00% | 2105 | 3% | 69 | 6% | 139 | 2105 | 69 | 139 | 9% | | 2 | 1053 | 35 | 69 |
| 12 | I40EB west US15/501 | I40EB_west_US15/501_*_* | 80300 | 48200 | LOS | 8% | 3856 | 40% | 1542 | 91.00% | 1404 | 3% | 46 | 6% | 93 | 1404 | 46 | 93 | 9% | | 2 | 702 | 23 | 46 |
| 13 | I85SB east junction | I85SB_east_I40_* | 61600 | 69100 | VPD | 9% | 5544 | 65% | 3604 | 85.00% | 3063 | 3% | 108 | 12% | 432 | 3063 | 108 | 432 | 15% | | 3 | 1021 | 36 | 144 |
| 14 | I85NB east junction | I85NB_east_I40_* | 61600 | 69100 | VPD | 9% | 5544 | 35% | 1940 | 85.00% | 1649 | 3% | 58 | 12% | 233 | 1649 | 58 | 233 | 15% | | 3 | 550 | 19 | 78 |
| 15a | SR1239 NB north I40/I85 | Outside of Area | 20800 | | | 9% | 1872 | 55% | 1030 | 94.00% | 968 | 2% | 21 | 4% | 41 | 968 | 21 | 41 | 6% | I wasn't sure what to do with number of lanes. Assumed the sectio | 2 | 484 | 10 | 21 |
| 15b | SR1239 SB north I40/I85 | Outside of Area | 20800 | | | 9% | 1872 | 45% | 842 | 94.00% | 792 | 2% | 17 | 4% | 34 | 792 | 17 | 34 | 6% | I wasn't sure what to do with number of lanes. Assumed the sectio | 2 | 396 | 8 | 17 |
| 16a | SR1239 SB south I40/I85 | Outside of Area | 4000 | | | 10% | 400 | 60% | 240 | 94.00% | 226 | 5% | 12 | 1% | 2 | 226 | 12 | 2 | 6% | I wasn't sure what to do with number of lanes. Assumed the sectio | 1 | 226 | 12 | 2 |
| 16b | SR1239 NB south I40/I85 | Outside of Area | 4000 | | | 10% | 400 | 40% | 160 | 94.00% | 150 | 5% | 8 | 1% | 2 | 150 | 8 | 2 | 6% | I wasn't sure what to do with number of lanes. Assumed the sectio | 1 | 150 | 8 | 2 |
| 17a | NB Dimmocks Mill Rd | Dimmocks_Mill_Rd_NB | 2200 | | | 10% | 220 | 60% | 132 | 94.00% | 124 | 5% | 7 | 1% | 1 | 124 | 7 | 1 | 6% | | 1 | 124 | 7 | 1 |
| 17b | SB Dimmocks Mill Rd | Dimmocks_Mill_Rd_SB | 2200 | | | 10% | 220 | 40% | 88 | 94.00% | 83 | 5% | 4 | 1% | 1 | 83 | 4 | 1 | 6% | | 1 | 83 | 4 | 1 |
| 18a | SB Orange Grove Rd | Orange_Grove_Rd_SB | 13000 | | | 9% | 1170 | 60% | 702 | 96.00% | 674 | 3% | 21 | 1% | 7 | 674 | 21 | 7 | 4% | | 1 | 674 | 21 | 7 |
| 18b | NB Orange Grove Rd | Orange_Grove_Rd_NB | 13000 | | | 9% | 1170 | 40% | 468 | 96.00% | 449 | 3% | 14 | 1% | 5 | 449 | 14 | 5 | 4% | | 1 | 449 | 14 | 5 |
| 19a | NB Old NC86 north I40 | NC86_NB_northI40_* | 25400 | | | 9% | 2286 | 55% | 1257 | 97.00% | 1220 | 2% | 25 | 1% | 13 | 1220 | 25 | 13 | 3% | | 2 | 610 | 13 | 6 |
| 19b | SB Old NC86 north I40 | NC86_SB_northI40_* | 25400 | | | 9% | 2286 | 45% | 1029 | 97.00% | 998 | 2% | 21 | 1% | 10 | 998 | 21 | 10 | 3% | | 2 | 499 | 10 | 5 |
| 20a | SB Old NC86 south I40 | NC86_SB_southI40 | 14500 | | | 10% | 1450 | 55% | 798 | 96.00% | 766 | 3% | 24 | 1% | 8 | 766 | 24 | 8 | 4% | | 1 | 766 | 24 | 8 |
| 20b | NB Old NC86 south I40 | NC86_NB_southI40 | 14500 | | | 10% | 1450 | 45% | 653 | 96.00% | 626 | 3% | 20 | 1% | 7 | 626 | 20 | 7 | 4% | | 1 | 626 | 20 | 7 |
| 21a | NB New Hope Church Rd north I40 | New_Hope_NB_northI40 | 9200 | | | 9% | 828 | 55% | 455 | 97.00% | 442 | 2% | 9 | 1% | 5 | 442 | 9 | 5 | 3% | | 1 | 442 | 9 | 5 |
| 21b | SB New Hope Church Rd north I40 | New_Hope_SB_northI40 | 9200 | | | 9% | 828 | 45% | 373 | 97.00% | 361 | 2% | 7 | 1% | 4 | 361 | 7 | 4 | 3% | | 1 | 361 | 7 | 4 |
| 22a | SB New Hope Church Rd south I40 | New_Hope_SB_southI40 | 7700 | | | 10% | 770 | 60% | 462 | 96.00% | 444 | 3% | 14 | 1% | 5 | 444 | 14 | 5 | 4% | | 1 | 444 | 14 | 5 |
| 22b | NB New Hope Church Rd south I40 | New_Hope_NB_southI40 | 7700 | | | 10% | 770 | 40% | 308 | 96.00% | 296 | 3% | 9 | 1% | 3 | 296 | 9 | 3 | 4% | | 1 | 296 | 9 | 3 |
| 23a | NB NC86 north I40 | NC86_NB_northI40_* | 17900 | | | 10% | 1790 | 55% | 985 | 96.00% | 945 | 3% | 30 | 1% | 10 | 945 | 30 | 10 | 4% | Also, not sure what to do lane wise here. It appears from the image | 1 | 945 | 30 | 10 |
| 23b | SB NC86 north I40 | NC86_SB_northI40_* | 17900 | | | 10% | 1790 | 45% | 806 | 96.00% | 773 | 3% | 24 | 1% | 8 | 773 | 24 | 8 | 4% | Also, not sure what to do lane wise here. It appears from the image | 3 | 258 | 8 | 3 |
| 24a | NB NC86 north Whitfield Rd | NC86_NB_north_Whitfield | 12200 | | | 10% | 1220 | 65% | 793 | 96.00% | 761 | 3% | 24 | 1% | 8 | 761 | 24 | 8 | 4% | | 1 | 761 | 24 | 8 |
| 24b | SB NC86 north Whitfield Rd | NC86_SB_north_Whitfield_* | 12200 | | | 10% | 1220 | 35% | 427 | 96.00% | 410 | 3% | 13 | 1% | 4 | 410 | 13 | 4 | 4% | | 2 | 205 | 6 | 2 |
| 25a | WB Whitfield Rd | Whitfield_WB | 8500 | | | 10% | 850 | 60% | 510 | 97.00% | 495 | 2% | 10 | 1% | 5 | 495 | 10 | 5 | 3% | | 1 | 495 | 10 | 5 |
| 25b | EB Whitfield Rd | Whitfield_EB | 8500 | | | 10% | 850 | 40% | 340 | 97.00% | 330 | 2% | 7 | 1% | 3 | 330 | 7 | 3 | 3% | | 1 | 330 | 7 | 3 |
| 26a | NB NC86 north Eubanks Rd | NC86_NB_north_Eubanks_* | 46000 | | | 10% | 4600 | 55% | 2530 | 97.00% | 2454 | 2% | 51 | 1% | 25 | 2454 | 51 | 25 | 3% | | 3 | 818 | 17 | 8 |
| 26b | SB NC86 north Eubanks Rd | NC86_SB_north_Eubanks_* | 46000 | | | 10% | 4600 | 45% | 2070 | 97.00% | 2008 | 2% | 41 | 1% | 21 | 2008 | 41 | 21 | 3% | | 2 | 1004 | 21 | 10 |
| 27a | NB NC86 south Eubanks Rd | NC86_NB_south_Eubanks_* | 42200 | | | 10% | 4220 | 60% | 2532 | 97.00% | 2456 | 2% | 51 | 1% | 25 | 2456 | 51 | 25 | 3% | | 3 | 819 | 17 | 8 |
| 27b | SB NC86 south Eubanks Rd | NC86_SB_south_Eubanks_* | 42200 | | | 10% | 4220 | 40% | 1688 | 97.00% | 1637 | 2% | 34 | 1% | 17 | 1637 | 34 | 17 | 3% | | 2 | 819 | 17 | 8 |
| 28a | WB Eubanks Rd | Eubanks_WB | 21200 | | | 9% | 1908 | 60% | 1145 | 91.00% | 1042 | 8% | 92 | 1% | 11 | 1042 | 92 | 11 | 9% | | 1 | 1042 | 92 | 11 |
| 28b | EB Eubanks Rd | Eubanks_EB | 21200 | | | 9% | 1908 | 40% | 763 | 91.00% | 695 | 8% | 61 | 1% | 8 | 695 | 61 | 8 | 9% | | 1 | 695 | 61 | 8 |
| 29aTM | I40EB/I85NB Exit Ramp to SR1239 | Outside of Area | 600 | | | 10% | 60 | 60% | 36 | 94.00% | 34 | 5% | 2 | 1% | 0 | 34 | 2 | 0 | 6% | | 1 | 34 | 2 | 0 |
| 29bTM | SR1239 Entrance Ramp to I40EB/I85NB | Outside of Area | 1900 | | | 9% | 171 | 35% | 60 | 87.00% | 52 | 3% | 2 | 10% | 6 | 52 | 2 | 6 | 13% | | 1 | 52 | 2 | 6 |
| 29cTM | I40WB/I85SB Exit Ramp to SR1239 | Outside of Area | 8000 | | | 9% | 720 | 55% | 396 | 94.00% | 372 | 2% | 8 | 4% | 16 | 372 | 8 | 16 | 6% | | 1 | 372 | 8 | 16 |
| 29dTM | SR1239 Entrance Ramp I40WB/I85SB | Outside of Area | 113 | | | 9% | 10 | 35% | 4 | 87.00% | 3 | 3% | 0 | 10% | 0 | 3 | 0 | 0 | 13% | | 1 | 3 | 0 | 0 |
| 30aTM | I40WB Exit Ramp to I85NB | I85SB_to_I40EB | 200 | | | 9% | 18 | 35% | 6 | 85.00% | 5 | 3% | 0 | 12% | 1 | 5 | 0 | 1 | 15% | | 1 | 5 | 0 | 1 |
| 30bTM | I85SB Junction to I40WB | I85SB_to_I85/I40_* | 61400 | | | 9% | 5526 | 65% | 3592 | 87.00% | 3125 | 3% | 108 | 10% | 359 | 3125 | 108 | 359 | 13% | | 3 | 1042 | 36 | 120 |
| 31aTM | I40WB Exit Ramp to Old NC86 | I40WB_exit_ramp | 18200 | | | 9% | 1638 | 55% | 901 | 97.00% | 874 | 2% | 18 | 1% | 9 | 874 | 18 | 9 | 3% | | 2 | 437 | 9 | 5 |
| 31bTM | Old NC86 Entrance Ramp to I40WB | I40WB_entrance_ramp | 3300 | | | 8% | 264 | 65% | 172 | 89.00% | 153 | 3% | 5 | 8% | 14 | 153 | 5 | 14 | 11% | | 1 | 153 | 5 | 14 |
| 31cTM | I40EB Exit Ramp to Old NC86 | I40EB_exit_ramp | 6300 | | | 10% | 630 | 55% | 347 | 96.00% | 333 | 3% | 10 | 1% | 3 | 333 | 10 | 3 | 4% | | 2 | 166 | 5 | 2 |
| 31dTM | Old NC86 Entrance Ramp to I40EB | I40EB_entrance_ramp | 4300 | | | 8% | 344 | 35% | 120 | 90.00% | 108 | 3% | 4 | 7% | 8 | 108 | 4 | 8 | 10% | | 1 | 108 | 4 | 8 |
| 32aTM | I40WB Exit Ramp to New Hope Church Rd | I40WB_exit_ramp | 5000 | | | 9% | 450 | 55% | 248 | 97.00% | 240 | 2% | 5 | 1% | 2 | 240 | 5 | 2 | 3% | | 1 | 240 | 5 | 2 |
| 32bTM | New Hope Church Rd Entrance Ramp to I40WB | I40WB_entrance_ramp | 2000 | | | 8% | 160 | 65% | 104 | 90.00% | 94 | 3% | 3 | 7% | 7 | 94 | 3 | 7 | 10% | | 1 | 94 | 3 | 7 |
| 32cTM | I40EB Exit Ramp to New Hope Church Rd | I40EB_exit_ramp | 1600 | | | 10% | 160 | 60% | 96 | 96.00% | 92 | 3% | 3 | 1% | 1 | 92 | 3 | 1 | 4% | | 1 | 92 | 3 | 1 |
| 32dTM | New Hope Church Rd Entrance Ramp to I40EB | I40EB_entrance_ramp | 3900 | | | 8% | 312 | 35% | 109 | 90.00% | 98 | 3% | 3 | 7% | 8 | 98 | 3 | 8 | 10% | | 1 | 98 | 3 | 8 |
| 33aTM | I40WB Exit Ramp to NC86 | I40EWB_exit_ramp_*_* | 5400 | | | 10% | 540 | 55% | 297 | 96.00% | 285 | 3% | 9 | 1% | 3 | 285 | 9 | 3 | 4% | Kept these all one lane | 3 | 95 | 3 | 1 |
| 33bTM | NC86 Entrance Ramp to I40WB | I40WB_entrance_ramp_*_* | 4400 | | | 8% | 352 | 65% | 229 | 90.00% | 206 | 3% | 7 | 7% | 16 | 206 | 7 | 16 | 10% | Kept these all one lane | 2 | 103 | 3 | 8 |
| 33cTM | I40EB Exit Ramp to NC86 | I40EB_exit_ramp_*_* | 13900 | | | 10% | 1390 | 45% | 626 | 97.00% | 607 | 2% | 13 | 1% | 6 | 607 | 13 | 6 | 3% | Kept these all one lane | 3 | 202 | 4 | 2 |
| 33dTM | NC86 Entrance Ramp to I40EB | I40EB_entrance_ramp | 24000 | | | 8% | 1920 | 40% | 768 | 91.00% | 699 | 3% | 23 | 6% | 46 | 699 | 23 | 46 | 9% | Kept these all one lane | 1 | 699 | 23 | 46 |
| 34aTM | NC86SB Exit to Eubanks Rd | | 9900 | | | 9% | 891 | 60% | 535 | 91.00% | 486 | 8% | 43 | 1% | 5 | 486 | 43 | 5 | 9% | Broke traffic by right turns onto Eubanks Rd and NC86 SB | 1 | 486 | 43 | 5 |
| 34bTM | Eubanks Rd Entrance to NC86SB | | 8800 | | | 10% | 880 | 40% | 352 | 97.00% | 341 | 2% | 7 | 1% | 4 | 341 | 7 | 4 | 3% | Broke traffic by right turns onto Eubanks Rd and NC86 SB | 1 | 341 | 7 | 4 |
| 35aTM | N86 NB Exit to Whitfield Rd | | 7100 | | | 10% | 710 | 40% | 284 | 97.00% | 275 | 2% | 6 | 1% | 3 | 275 | 6 | 3 | 3% | Broke traffic by right turns onto Whitfield Rd and NC86 NB | 1 | 275 | 6 | 3 |
| 35bTM | Whitfield Rd Entrance to NC86 NB | | 1400 | | | 10% | 140 | 65% | 91 | 96.00% | 87 | 3% | 3 | 1% | 1 | 87 | 3 | 1 | 4% | Broke traffic by right turns onto Whitfield Rd and NC86 NB | 1 | 87 | 3 | 1 |
| 36 | I40WB east of US15/501 | I40WB_east_US15/501_* | 101100 | | | 8% | 3856 | 60% | 2314 | 92.00% | 2129 | 3% | 69 | 5% | 116 | 2129 | 69 | 116 | 8% | | 3 | 710 | 23 | 39 |
| 37 | I40EB east of US15/501 | I40EB_east_US15/501_* | 101100 | | | 8% | 3856 | 40% | 1542 | 92.00% | 1419 | 3% | 46 | 5% | 77 | 1419 | 46 | 77 | 8% | | 3 | 473 | 15 | 26 |
| 38a | Sunrise Rd SB | Sunrise_SB | 4200 | | | 11% | 462 | 55% | 254 | 96.00% | 244 | 3% | 8 | 1% | 3 | 244 | 8 | 3 | 4% | | 1 | 244 | 8 | 3 |
| 38b | Sunrise Rd NB | Sunrise_NB | 4200 | | | 11% | 462 | 45% | 208 | 96.00% | 200 | 3% | 6 | 1% | 2 | 200 | 6 | 2 | 4% | | 1 | 200 | 6 | 2 |
| 39a | Erwin Rd SB | Erwin_SB | 12000 | | | 12% | 1440 | 55% | 792 | 97.00% | 768 | 2% | 16 | 1% | 8 | 768 | 16 | 8 | 3% | | 1 | 768 | 16 | 8 |
| 39b | Erwin Rd NB | Erwin_NB | 12000 | | | 12% | 1440 | 45% | 648 | 97.00% | 629 | 2% | 13 | 1% | 6 | 629 | 13 | 6 | 3% | | 1 | 629 | 13 | 6 |
| 40a | US15/501NB north of I40 | US15/501NB_east_I40_*_* | 87300 | | | 8% | 6984 | 55% | 3841 | 97.00% | 3726 | 2% | 77 | 1% | 38 | 3726 | 77 | 38 | 3% | | 3 | 1242 | 26 | 13 |
| 40b | US15/501SB north of I40 | US15/501SB_east_I40_*_* | 87300 | | | 8% | 6984 | 45% | 3143 | 97.00% | 3049 | 2% | 63 | 1% | 31 | 3049 | 63 | 31 | 3% | | 3 | 1016 | 21 | 10 |
| 41a | US15/501NB south of I40 | US15/501NB_west_I40_*_* | 59500 | | | 8% | 4760 | 55% | 2618 | 97.00% | 2539 | 2% | 52 | 1% | 26 | 2539 | 52 | 26 | 3% | Used numbers from section north of I40 | 3 | 846 | 17 | 9 |
| 41b | US15/501SB south of I40 | US15/501SB_west_I40_*_* | 59500 | | | 8% | 4760 | 45% | 2142 | 97.00% | 2078 | 2% | 43 | 1% | 21 | 2078 | 43 | 21 | 3% | Used numbers from section north of I40 | 4 | 519 | 11 | 5 |
| 42aTM | I40WB Exit Ramp to US15/501 | I40WB_exit_ramp_*_* | 30000 | | | 8% | 2400 | 55% | 1320 | 97.00% | 1280 | 2% | 26 | 1% | 13 | 1280 | 26 | 13 | 3% | | 4 | 320 | 7 | 3 |
| 42bTM | US15/501 Entrance Ramp to I40WB | I40WB_entrance_ramp_*_* | 19700 | | | 8% | 1576 | 60% | 946 | 91.00% | 860 | 3% | 28 | 6% | 57 | 860 | 28 | 57 | 9% | | 1 | 860 | 28 | 57 |
| 42cTM | I40EB Exit Ramp to US15/501 | I40EB_exit_ramp_*_* | 5700 | | | 8% | 456 | 45% | 205 | 97.00% | 199 | 2% | 4 | 1% | 2 | 199 | 4 | 2 | 3% | | 3 | 66 | 1 | 1 |
| 42dTM | US15/501 Entrance Ramp to 140EB | I40EB_entrance_ramp | 16200 | | | 8% | 1296 | 40% | 518 | 92.00% | 477 | 3% | 16 | 5% | 26 | 477 | 16 | 26 | 8% | | 1 | 477 | 16 | 26 |
| 43 | I40WB ramp to I85NB | I40WB_to_I85NB | | | | | 0 | | 0 | 100.00% | 0 | | 0 | | 0 | 0 | 0 | 0 | 0% | | 1 | 18 | 15 | 12 |
| 44 | I85/I40_to_I85NB | I85/I40_to_I85NB_* | 61400 | | | 9% | 5526 | 35% | 1934 | 85.00% | 1644 | 3% | 58 | 12% | 232 | 1644 | 58 | 232 | 15% | | 3 | 548 | 19 | 77 |
| 45 | I40WB through the Old NC86 junction | I40WB_overpass_* | 200 | | | 8% | 16 | 35% | 6 | 89.00% | 5 | 3% | 0 | 8% | 0 | 5 | 0 | 0 | 11% | | 2 | 909 | 33 | 85 |
| 46 | I40EB through the Old NC86 junction | I40EB_overpass_* | | | | | | | | | | | | | | | | | | | 2 | 517 | 18 | 53 |
| 47 | Old NC86 NB overpass | Old_NC86NB_overpass | | | | | | | | | | | | | | | | | | | 1 | 518 | 16 | 0 |
| 48 | Old NC86 SB overpass | Old_NC86SB_overpass_* | | | | | | | | | | | | | | | | | | | 2 | 423 | 8 | 0 |
| 49 | I40 New Hope Church WB overpass | I40WB_overpass_* | | | | | | | | | | | | | | | | | | | 2 | 1008 | 35 | 86 |
| 50 | I40 New Hope Church EB overpass | I40EB_overpass_* | | | | | | | | | | | | | | | | | | | 2 | 561 | 19 | 47 |
| 51 | New Hope Church overpass NB | New_Hope_Church_NB_overpass | | | | | | | | | | | | | | | | | | | 1 | 197 | 6 | 0 |
| 52 | New Hope Church overpass SB | New_Hope_Church_SB_overpass | | | | | | | | | | | | | | | | | | | 1 | 268 | 4 | 0 |
| 53 | I40WB through the NC86 junction | I40WB_overpass_* | | | | | | | | | | | | | | | | | | | 2 | 1005 | 33 | 69 |
| 54 | I40EB through the NC86 junction | I40EB_overpass_* | | | | | | | | | | | | | | | | | | | 2 | 506 | 18 | 46 |
| 55 | NC86 NB overpass | NC86NB_overpass_*_* | | | | | | | | | | | | | | | | | | | 2 | 878 | 14 | 0 |
| 56 | NC86 SB overpass | NC86SB_overpass_*_* | | | | | | | | | | | | | | | | | | | 2 | 335 | 10 | 0 |
| 57 | I40WB overpass US15/501 | I40WB_overpass_* | | | | | | | | | | | | | | | | | | | 4 | 452 | 16 | 28 |
| 58 | I40EB overpass US15/501 | I40EB_overpass_* | | | | | | | | | | | | | | | | | | | 3 | 446 | 15 | 31 |
| 59 | US15/501 EB overpass | US15/501EB_overpass_*_* | | | | | | | | | | | | | | | | | | | 4 | 516 | 9 | 0 |
| 60 | US15/501 WB overpass | US15/501WB_overpass_*_* | | | | | | | | | | | | | | | | | | | 4 | 547 | 9 | 0 |
| 61 | I85/I40 to I40EB | I85/I40_to_I40EB_* | | | | | | | | | | | | | | | | | | | 2 | 2 | 0 | 0 |
| | Major assumption was that all exit ramps flowed onto the side roads in the direction of the arrow (i.e. for the I40WB exit onto US15/501 traffic would flow NB and for the I40EB exit onto US15/501 traffic would flow SB) | | | | | | | | | | | | | | | | | | | | | | | |

# Build Traffic

| Segment # | Segment Description | TNM Name | Vehicles Per Day (FORECAST) | Vehicles Per Day (LOS C) | Lesser (VPD vs. LOS C) | K Factor % | | Directional % | | Car % | | Medium % | | Heavy % | | TNM Car Volume | TNM Medium Volume | TNM Heavy Volume | Total Truck % | **Comments** | Number of Lanes | TNM Car Per Lane | TNM MT Per Lane | TNM HT Per Lane |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I40WB/I85SB west of SR1239 | | 114400 | 92200 | LOS | 9% | 10296 | 50% | 5148 | 87.00% | 4479 | 3% | 154 | 10% | 515 | 4479 | 154 | 515 | 13% | | 1 | 4479 | 154 | 515 |
| 2 | I40EB/I85NB west of SR1239 | | 114400 | 92200 | LOS | 9% | 10296 | 50% | 5148 | 87.00% | 4479 | 3% | 154 | 10% | 515 | 4479 | 154 | 515 | 13% | | 1 | 4479 | 154 | 515 |
| 3 | I40WB/I85SB west of I85 junction | | 112700 | 92200 | LOS | 9% | 10143 | 50% | 5072 | 87.00% | 4412 | 3% | 152 | 10% | 507 | 4412 | 152 | 507 | 13% | | 5 | 882 | 30 | 101 |
| 4 | I40EB/I85NB west of I85 junction | | 112700 | 92200 | LOS | 9% | 10143 | 50% | 5072 | 87.00% | 4412 | 3% | 152 | 10% | 507 | 4412 | 152 | 507 | 13% | | 4 | 1103 | 38 | 127 |
| 5 | I40WB west Old NC86 | I40WB_west_Old_NC86_*_* | 54800 | 48200 | LOS | 8% | 4384 | 50% | 2192 | 89.00% | 1951 | 3% | 66 | 8% | 175 | 1951 | 66 | 175 | 11% | From design file, looks like adding | 2 | 975 | 33 | 88 |
| 6 | I40EB west Old NC86 | | 54800 | 48200 | LOS | 8% | 4384 | 50% | 2192 | 89.00% | 1951 | 3% | 66 | 8% | 175 | 1951 | 66 | 175 | 11% | From design file, looks like adding | 3 | 650 | 22 | 58 |
| 7 | I40WB west New Hope Church Rd | I40WB_west_New_Hope_* | 69800 | 48200 | LOS | 8% | 5584 | 50% | 2792 | 90.00% | 2513 | 3% | 84 | 7% | 195 | 2513 | 84 | 195 | 10% | From design file, looks like adding | 3 | 838 | 28 | 65 |
| 8 | I40EB west New Hope Church Rd | I40EB_west_New_Hope_* | 69800 | 48200 | LOS | 8% | 5584 | 50% | 2792 | 90.00% | 2513 | 3% | 84 | 7% | 195 | 2513 | 84 | 195 | 10% | From design file, looks like adding | 3 | 838 | 28 | 65 |
| 9 | I40WB west NC86 | I40WB_west_NC86_* | 76000 | 48200 | LOS | 8% | 6080 | 50% | 3040 | 90.00% | 2736 | 3% | 91 | 7% | 213 | 2736 | 91 | 213 | 10% | From design file, looks like adding | 3 | 912 | 30 | 71 |
| 10 | I40EB west NC86 | I40EB_west_NC86_* | 76000 | 48200 | LOS | 8% | 6080 | 50% | 3040 | 90.00% | 2736 | 3% | 91 | 7% | 213 | 2736 | 91 | 213 | 10% | From design file, looks like adding | 3 | 912 | 30 | 71 |
| 11 | I40WB west US15/501 | I40WB_west_US15/501_02_* | 88400 | 48200 | LOS | 8% | 7072 | 50% | 3536 | 91.00% | 3218 | 3% | 106 | 6% | 212 | 3218 | 106 | 212 | 9% | From design file, looks like adding | 1 | 3218 | 106 | 212 |
| 12 | I40EB west US15/501 | I40EB_west_US15/501_02_* | 88400 | 48200 | LOS | 8% | 7072 | 50% | 3536 | 91.00% | 3218 | 3% | 106 | 6% | 212 | 3218 | 106 | 212 | 9% | From design file, looks like adding | 1 | 3218 | 106 | 212 |
| 13 | I85SB east junction | I85SB_east_junction_* | 58500 | 69100 | VPD | 9% | 5265 | 50% | 2633 | 85.00% | 2238 | 3% | 79 | 12% | 316 | 2238 | 79 | 316 | 15% | | 3 | 746 | 26 | 105 |
| 14 | I85NB east junction | I85NB_east_junction_* | 58500 | 69100 | VPD | 9% | 5265 | 50% | 2633 | 85.00% | 2238 | 3% | 79 | 12% | 316 | 2238 | 79 | 316 | 15% | | 3 | 746 | 26 | 105 |
| 15a | SR1239 NB north I40/I85 | SR1239_NB_north_I40_I85_* | 20600 | | | 9% | 1854 | 50% | 927 | 94.00% | 871 | 2% | 19 | 4% | 37 | 871 | 19 | 37 | 6% | I wasn't sure what to do with numb | 2 | 436 | 9 | 19 |
| 15b | SR1239 SB north I40/I85 | SR1239_SB_north_I40_I85_* | 20600 | | | 9% | 1854 | 50% | 927 | 94.00% | 871 | 2% | 19 | 4% | 37 | 871 | 19 | 37 | 6% | I wasn't sure what to do with numb | 2 | 436 | 9 | 19 |
| 16a | SR1239 SB south I40/I85 | SR1239_SB_south_I40_I85_* | 3900 | | | 10% | 390 | 50% | 195 | 94.00% | 183 | 5% | 10 | 1% | 2 | 183 | 10 | 2 | 6% | I wasn't sure what to do with numb | 1 | 183 | 10 | 2 |
| 16b | SR1239 NB south I40/I85 | SR1239_NB_south_I40_I85_* | 3900 | | | 10% | 390 | 50% | 195 | 94.00% | 183 | 5% | 10 | 1% | 2 | 183 | 10 | 2 | 6% | I wasn't sure what to do with numb | 1 | 183 | 10 | 2 |
| 17a | NB Dimmocks Mill Rd | NB_Dimmocks_Mill_Rd_* | 2200 | | | 10% | 220 | 50% | 110 | 94.00% | 103 | 5% | 6 | 1% | 1 | 103 | 6 | 1 | 6% | | 2 | 52 | 3 | 1 |
| 17b | SB Dimmocks Mill Rd | SB_Dimmocks_Mill_Rd_* | 2200 | | | 10% | 220 | 50% | 110 | 94.00% | 103 | 5% | 6 | 1% | 1 | 103 | 6 | 1 | 6% | | 2 | 52 | 3 | 1 |
| 18a | SB Orange Grove Rd | SB_Orange_Grove_Rd_* | 12900 | | | 9% | 1161 | 50% | 581 | 96.00% | 557 | 3% | 17 | 1% | 6 | 557 | 17 | 6 | 4% | | 1 | 557 | 17 | 6 |
| 18b | NB Orange Grove Rd | NB_Orange_Grove_Rd_* | 12900 | | | 9% | 1161 | 50% | 581 | 96.00% | 557 | 3% | 17 | 1% | 6 | 557 | 17 | 6 | 4% | | 1 | 557 | 17 | 6 |
| 19a | NB Old NC86 north I40 | NB_Old_NC86_north_I40_* | 27400 | | | 9% | 2466 | 50% | 1233 | 97.00% | 1196 | 2% | 25 | 1% | 12 | 1196 | 25 | 12 | 3% | | 2 | 598 | 12 | 6 |
| 19b | SB Old NC86 north I40 | SB_Old_NC86_north_I40_* | 27400 | | | 9% | 2466 | 50% | 1233 | 97.00% | 1196 | 2% | 25 | 1% | 12 | 1196 | 25 | 12 | 3% | | 2 | 598 | 12 | 6 |
| 20a | SB Old NC86 south I40 | SB_Old_NC86_south_I40_* | 13400 | | | 10% | 1340 | 50% | 670 | 96.00% | 643 | 3% | 20 | 1% | 7 | 643 | 20 | 7 | 4% | | 1 | 643 | 20 | 7 |
| 20b | NB Old NC86 south I40 | NB_Old_NC86_south_I40_* | 13400 | | | 10% | 1340 | 50% | 670 | 96.00% | 643 | 3% | 20 | 1% | 7 | 643 | 20 | 7 | 4% | | 2 | 322 | 10 | 3 |
| 21a | NB New Hope Church Rd north I40 | NB_New_Hope_Church_Rd_north_I40_* | 10100 | | | 9% | 909 | 50% | 455 | 97.00% | 441 | 2% | 9 | 1% | 5 | 441 | 9 | 5 | 3% | | 1 | 441 | 9 | 5 |
| 21b | SB New Hope Church Rd north I40 | SB_New_Hope_Church_Rd_north_I40_* | 10100 | | | 9% | 909 | 50% | 455 | 97.00% | 441 | 2% | 9 | 1% | 5 | 441 | 9 | 5 | 3% | | 1 | 441 | 9 | 5 |
| 22a | SB New Hope Church Rd south I40 | SB_New_Hope_Church_Rd_south_I40_* | 8500 | | | 10% | 850 | 50% | 425 | 96.00% | 408 | 3% | 13 | 1% | 4 | 408 | 13 | 4 | 4% | | 1 | 408 | 13 | 4 |
| 22b | NB New Hope Church Rd south I40 | NB_New_Hope_Church_Rd_south_I40_* | 8500 | | | 10% | 850 | 50% | 425 | 96.00% | 408 | 3% | 13 | 1% | 4 | 408 | 13 | 4 | 4% | | 1 | 408 | 13 | 4 |
| 23a | NB NC86 north I40 | NB_NC86_north_I40_* | 16200 | | | 10% | 1620 | 50% | 810 | 96.00% | 778 | 3% | 24 | 1% | 8 | 778 | 24 | 8 | 4% | Also, not sure what to do lane wise | 1 | 778 | 24 | 8 |
| 23b | SB NC86 north I40 | SB_NC86_north_I40_* | 16200 | | | 10% | 1620 | 50% | 810 | 96.00% | 778 | 3% | 24 | 1% | 8 | 778 | 24 | 8 | 4% | Also, not sure what to do lane wise | 1 | 778 | 24 | 8 |
| 24a | NB NC86 north Whitfield Rd | NB_NC86_north_Whitfield_Rd_* | 10400 | | | 10% | 1040 | 50% | 520 | 96.00% | 499 | 3% | 16 | 1% | 5 | 499 | 16 | 5 | 4% | | 1 | 499 | 16 | 5 |
| 24b | SB NC86 north Whitfield Rd | SB_NC86_north_Whitfield_Rd_* | 10400 | | | 10% | 1040 | 50% | 520 | 96.00% | 499 | 3% | 16 | 1% | 5 | 499 | 16 | 5 | 4% | | 1 | 499 | 16 | 5 |
| 25a | WB Whitfield Rd | WB_Whitfield_Rd_* | 7600 | | | 10% | 760 | 50% | 380 | 97.00% | 369 | 2% | 8 | 1% | 4 | 369 | 8 | 4 | 3% | | 1 | 369 | 8 | 4 |
| 25b | EB Whitfield Rd | EB_Whitfield_Rd_* | 7600 | | | 10% | 760 | 50% | 380 | 97.00% | 369 | 2% | 8 | 1% | 4 | 369 | 8 | 4 | 3% | | 1 | 369 | 8 | 4 |
| 26a | NB NC86 north Eubanks Rd | NB_NC86_north_Eubanks_Rd_* | 47000 | | | 10% | 4700 | 50% | 2350 | 97.00% | 2280 | 2% | 47 | 1% | 24 | 2280 | 47 | 24 | 3% | | 3 | 760 | 16 | 8 |
| 26b | SB NC86 north Eubanks Rd | SB_NC86_north_Eubanks_Rd_* | 47000 | | | 10% | 4700 | 50% | 2350 | 97.00% | 2280 | 2% | 47 | 1% | 24 | 2280 | 47 | 24 | 3% | | 2 | 1140 | 24 | 12 |
| 27a | NB NC86 south Eubanks Rd | NB_NC86_south_Eubanks_Rd_* | 43000 | | | 10% | 4300 | 50% | 2150 | 97.00% | 2086 | 2% | 43 | 1% | 22 | 2086 | 43 | 22 | 3% | | 3 | 695 | 14 | 7 |
| 27b | SB NC86 south Eubanks Rd | SB_NC86_south_Eubanks_Rd_* | 43000 | | | 10% | 4300 | 50% | 2150 | 97.00% | 2086 | 2% | 43 | 1% | 22 | 2086 | 43 | 22 | 3% | | 2 | 1043 | 22 | 11 |
| 28a | WB Eubanks Rd | WB_Eubanks_Rd_* | 21600 | | | 9% | 1944 | 50% | 972 | 91.00% | 885 | 8% | 78 | 1% | 10 | 885 | 78 | 10 | 9% | | 2 | 442 | 39 | 5 |
| 28b | EB Eubanks Rd | EB_Eubanks_Rd_* | 21600 | | | 9% | 1944 | 50% | 972 | 91.00% | 885 | 8% | 78 | 1% | 10 | 885 | 78 | 10 | 9% | | 2 | 442 | 39 | 5 |
| 29aTM | I40EB/I85NB Exit Ramp to SR1239 | I40EB_I85NB_Exit_Ramp_to_SR1239_* | 600 | | | 10% | 60 | 50% | 30 | 94.00% | 28 | 5% | 2 | 1% | 0 | 28 | 2 | 0 | 6% | | 1 | 28 | 2 | 0 |
| 29bTM | SR1239 Entrance Ramp to I40EB/I85NB | SR1239_Entrance_Ramp_to_I40EB_I85NB_* | 1900 | | | 9% | 171 | 50% | 86 | 87.00% | 74 | 3% | 3 | 10% | 9 | 74 | 3 | 9 | 13% | | 1 | 74 | 3 | 9 |
| 29cTM | I40WB/I85SB Exit Ramp to SR1239 | I40WB_I85SB_Exit_Ramp_to_SR1239_* | 8100 | | | 9% | 729 | 50% | 365 | 94.00% | 343 | 2% | 7 | 4% | 15 | 343 | 7 | 15 | 6% | | 1 | 343 | 7 | 15 |
| 29dTM | SR1239 Entrance Ramp 140WB/I85SB | SR1239_Entrance_Ramp_140WB_I85SB_* | 11100 | | | 9% | 999 | 50% | 500 | 87.00% | 435 | 3% | 15 | 10% | 50 | 435 | 15 | 50 | 13% | | 1 | 435 | 15 | 50 |
| 30aTM | I85SB to I40EB | I85SB to I40WB | 300 | | | 8% | 24 | 50% | 12 | 89.00% | 11 | 3% | 0 | 8% | 1 | 11 | 0 | 1 | 11% | | 1 | 11 | 0 | 1 |
| 30bTM | I85SB Junction to I40WB | I85SB_to_I85/I40_* | 58200 | | | 9% | 5238 | 50% | 2619 | 87.00% | 2279 | 3% | 79 | 10% | 262 | 2279 | 79 | 262 | 13% | | 3 | 760 | 26 | 87 |
| 31aTM | I40WB Exit Ramp to Old NC86 | I40WB_Exit_Ramp_to_Old_NC86_* | 18700 | | | 9% | 1683 | 50% | 842 | 97.00% | 816 | 2% | 17 | 1% | 8 | 816 | 17 | 8 | 3% | | 2 | 408 | 8 | 4 |
| 31bTM | Old NC86 Entrance Ramp to I40WB | Old_NC86_Entrance_Ramp_to_I40WB_* | 3300 | | | 8% | 264 | 50% | 132 | 89.00% | 117 | 3% | 4 | 8% | 11 | 117 | 4 | 11 | 11% | | 1 | 117 | 4 | 11 |
| 31cTM | I40EB Exit Ramp to Old NC86 | I40EB_Exit_Ramp_to_Old_NC86_* | 4200 | | | 10% | 420 | 50% | 210 | 96.00% | 202 | 3% | 6 | 1% | 2 | 202 | 6 | 2 | 4% | | 2 | 101 | 3 | 1 |
| 31dTM | Old NC86 Entrance Ramp to I40EB | Old_NC86_Entrance_Ramp_to_I40EB_* | 3800 | | | 8% | 304 | 50% | 152 | 90.00% | 137 | 3% | 5 | 7% | 11 | 137 | 5 | 11 | 10% | | 1 | 137 | 5 | 11 |
| 32aTM | I40WB Exit Ramp to New Hope Church Rd | 0WB_Exit_Ramp_to_New_Hope_Church_Rd_ | 5500 | | | 9% | 495 | 50% | 248 | 97.00% | 240 | 2% | 5 | 1% | 2 | 240 | 5 | 2 | 3% | | 2 | 120 | 2 | 1 |
| 32bTM | New Hope Church Rd Entrance Ramp to I40WB | _Hope_Church_Rd_Entrance_Ramp_to_I40W | 2000 | | | 8% | 160 | 50% | 80 | 90.00% | 72 | 3% | 2 | 7% | 6 | 72 | 2 | 6 | 10% | | 1 | 72 | 2 | 6 |
| 32cTM | I40EB Exit Ramp to New Hope Church Rd | 0EB_Exit_Ramp_to_New_Hope_Church_Rd_ | 1600 | | | 10% | 160 | 50% | 80 | 96.00% | 77 | 3% | 2 | 1% | 1 | 77 | 2 | 1 | 4% | | 1 | 77 | 2 | 1 |
| 32dTM | New Hope Church Rd Entrance Ramp to I40EB | v_Hope_Church_Rd_Entrance_Ramp_to_I40E | 4300 | | | 8% | 344 | 50% | 172 | 90.00% | 155 | 3% | 5 | 7% | 12 | 155 | 5 | 12 | 10% | | 1 | 155 | 5 | 12 |
| 33aTM | I40WB Exit Ramp to NC86 | I40WB_Exit_Ramp_to_NC86_* | 5200 | | | 10% | 520 | 50% | 260 | 96.00% | 250 | 3% | 8 | 1% | 3 | 250 | 8 | 3 | 4% | Kept these all one lane | 3 | 83 | 3 | 1 |
| 33bTM | NC86 Entrance Ramp to I40WB | NC86_Entrance_Ramp_to_I40WB_* | 3900 | | | 8% | 312 | 50% | 156 | 90.00% | 140 | 3% | 5 | 7% | 11 | 140 | 5 | 11 | 10% | Kept these all one lane | 2 | 70 | 2 | 5 |
| 33cTM | I40EB Exit Ramp to NC86 | I40EB_Exit_Ramp_to_NC86_* | 14400 | | | 10% | 1440 | 50% | 720 | 97.00% | 698 | 2% | 14 | 1% | 7 | 698 | 14 | 7 | 3% | Kept these all one lane | 3 | 233 | 5 | 2 |
| 33dTM | NC86 Entrance Ramp to I40EB | NC86_Entrance_Ramp_to_I40EB_* | 25500 | | | 8% | 2040 | 50% | 1020 | 91.00% | 928 | 3% | 31 | 6% | 61 | 928 | 31 | 61 | 9% | Kept these all one lane | 3 | 309 | 10 | 20 |
| 34aTM | NC86SB Exit to Eubanks Rd | NC86SB_Exit_to_Eubanks_Rd_* | 12800 | | | 9% | 1152 | 50% | 576 | 91.00% | 524 | 8% | 46 | 1% | 6 | 524 | 46 | 6 | 9% | Broke traffic by right turns onto Eu | 1 | 524 | 46 | 6 |
| 34bTM | Eubanks Rd Entrance to NC86SB | Eubanks_Rd_Entrance_to_NC86SB_* | 8800 | | | 10% | 880 | 50% | 440 | 97.00% | 427 | 2% | 9 | 1% | 4 | 427 | 9 | 4 | 3% | Broke traffic by right turns onto Eu | 1 | 427 | 9 | 4 |
| 35aTM | N86 NB Exit to Whitfield Rd | N86_NB_Exit_to_Whitfield_Rd_* | 6700 | | | 10% | 670 | 50% | 335 | 97.00% | 325 | 2% | 7 | 1% | 3 | 325 | 7 | 3 | 3% | Broke traffic by right turns onto W | 1 | 325 | 7 | 3 |
| 35bTM | Whitfield Rd Entrance to NC86 NB | Whitfield_Rd_Entrance_to_NC86_NB_* | 900 | | | 10% | 90 | 50% | 45 | 96.00% | 43 | 3% | 1 | 1% | 0 | 43 | 1 | 0 | 4% | Broke traffic by right turns onto W | 1 | 43 | 1 | 0 |
| 36 | I40WB east of US15/501 | I40WB_east_US15/501_* | 105000 | 48200 | LOS | 8% | 8400 | 50% | 4200 | 92.00% | 3864 | 3% | 126 | 5% | 210 | 3864 | 126 | 210 | 8% | From design file, looks like adding | 3 | 1288 | 42 | 70 |
| 37 | I40EB east of US15/501 | I40EB_east_US15/501_* | 105000 | 48200 | LOS | 8% | 8400 | 50% | 4200 | 92.00% | 3864 | 3% | 126 | 5% | 210 | 3864 | 126 | 210 | 8% | From design file, looks like adding | 3 | 1288 | 42 | 70 |
| 38a | Sunrise Rd SB | Sunrise_Rd_SB_* | 4100 | c | | 11% | 451 | 50% | 226 | 96.00% | 216 | 3% | 7 | 1% | 2 | 216 | 7 | 2 | 4% | | 1 | 216 | 7 | 2 |
| 38b | Sunrise Rd NB | Sunrise_Rd_NB_* | 4100 | | | 11% | 451 | 50% | 226 | 96.00% | 216 | 3% | 7 | 1% | 2 | 216 | 7 | 2 | 4% | | 1 | 216 | 7 | 2 |
| 39a | Erwin Rd SB | Erwin_Rd_SB_* | 12100 | | | 12% | 1452 | 50% | 726 | 97.00% | 704 | 2% | 15 | 1% | 7 | 704 | 15 | 7 | 3% | | 1 | 704 | 15 | 7 |
| 39b | Erwin Rd NB | Erwin_Rd_NB_* | 12100 | | | 12% | 1452 | 50% | 726 | 97.00% | 704 | 2% | 15 | 1% | 7 | 704 | 15 | 7 | 3% | | 1 | 704 | 15 | 7 |
| 40a | US15/501NB north of I40 | US15/501NB_east_I40_*_* | 89400 | | | 8% | 7152 | 50% | 3576 | 97.00% | 3469 | 2% | 72 | 1% | 36 | 3469 | 72 | 36 | 3% | | 4 | 867 | 18 | 9 |
| 40b | US15/501SB north of I40 | US15/501SB_east_I40_*_* | 89400 | | | 8% | 7152 | 50% | 3576 | 97.00% | 3469 | 2% | 72 | 1% | 36 | 3469 | 72 | 36 | 3% | | 4 | 867 | 18 | 9 |
| 41a | US15/501NB south of I40 | US15/501NB_west_I40_*_* | 59200 | | | 8% | 4736 | 50% | 2368 | 97.00% | 2297 | 2% | 47 | 1% | 24 | 2297 | 47 | 24 | 3% | Used numbers from section north | 4 | 574 | 12 | 6 |
| 41b | US15/501SB south of I40 | US15/501SB_west_I40_*_* | 59200 | | | 8% | 4736 | 50% | 2368 | 97.00% | 2297 | 2% | 47 | 1% | 24 | 2297 | 47 | 24 | 3% | Used numbers from section north | 4 | 574 | 12 | 6 |
| 42aTM | I40WB Exit Ramp to US15/501 | I40WB_exit_ramp_*_* | 29100 | | | 8% | 2328 | 50% | 1164 | 97.00% | 1129 | 2% | 23 | 1% | 12 | 1129 | 23 | 12 | 3% | | 3 | 376 | 8 | 4 |
| 42bTM | US15/501 Entrance Ramp to I40WB | I40WB_entrance_ramp_*_* | 23000 | | | 8% | 1840 | 50% | 920 | 91.00% | 837 | 3% | 28 | 6% | 55 | 837 | 28 | 55 | 9% | | 2 | 419 | 14 | 28 |
| 42cTM | I40EB Exit Ramp to US15/501 | I40EB_exit_ramp_*_* | 5700 | | | 8% | 456 | 50% | 228 | 97.00% | 221 | 2% | 5 | 1% | 2 | 221 | 5 | 2 | 3% | | 3 | 74 | 2 | 1 |
| 42dTM | US15/501 Entrance Ramp to 140EB | I40EB_entrance_ramp | 16200 | | | 8% | 1296 | 50% | 648 | 92.00% | 596 | 3% | 19 | 5% | 32 | 596 | 19 | 32 | 8% | | 1 | 596 | 19 | 32 |
| 43 | I40WB ramp to I85NB | I40WB_ramp_to_I85NB_* | | | | | | | | | | | | | | | | | | | 1 | 18 | 15 | 12 |
| 44 | I85/I40_to_I85NB | I85_I40_to_I85NB_* | 58200 | | | 9% | 5238 | 50% | 2619 | 85.00% | 2226 | 3% | 79 | 12% | 314 | 2226 | 79 | 314 | 15% | | 3 | 742 | 26 | 105 |
| 45 | I40WB through the Old NC86 junction | I40WB_through_the_Old_NC86_junction_* | | | | | | | | | | | | | | | | | | | 3 | 0 | 25 | 64 |
| 46 | I40EB through the Old NC86 junction | I40EB_through_the_Old_NC86_junction_* | | | | | | | | | | | | | | | | | | | 3 | 617 | 21 | 58 |
| 47 | Old NC86 NB overpass | Old_NC86_NB_overpass_* | | | | | | | | | | | | | | | | | | | 1 | 506 | 16 | 0 |
| 48 | Old NC86 SB overpass | Old_NC86_SB_overpass_* | | | | | | | | | | | | | | | | | | | 3 | 360 | 7 | 0 |
| 49 | I40 New Hope Church WB overpass | I40_New_Hope_Church_WB_overpass_* | | | | | | | | | | | | | | | | | | | 3 | 872 | 30 | 71 |
| 50 | I40 New Hope Church EB overpass | I40_New_Hope_Church_EB_overpass_* | | | | | | | | | | | | | | | | | | | 3 | 812 | 27 | 65 |
| 51 | New Hope Church overpass NB | New_Hope_Church_overpass_NB_* | | | | | | | | | | | | | | | | | | | 1 | 253 | 8 | 0 |
| 52 | New Hope Church overpass SB | New_Hope_Church_overpass_SB_* | | | | | | | | | | | | | | | | | | | 1 | 369 | 0 | 0 |
| 53 | I40WB through the NC86 junction | I40WB_through_the_NC86_junction_* | | | | | | | | | | | | | | | | | | | 3 | 1045 | 34 | 70 |
| 54 | 140EB through the NC86 junction | 140EB_through_the_NC86_junction_* | | | | | | | | | | | | | | | | | | | 3 | 834 | 29 | 70 |
| 55 | NC86 NB overpass | NC86_NB_overpass_* | | | | | | | | | | | | | | | | | | | 3 | 657 | 12 | 1 |
| 56 | NC86 SB overpass | NC86_SB_overpass_* | | | | | | | | | | | | | | | | | | | 2 | 354 | 11 | 1 |
| 57 | I40WB overpass US15/501 | I40WB_overpass_* | | | | | | | | | | | | | | | | | | | 3 | 1163 | 39 | 69 |
| 58 | I40EB overpass US15/501 | I40EB_overpass_* | | | | | | | | | | | | | | | | | | | 3 | 1048 | 35 | 70 |
| 59 | US15/501 EB overpass | US15/501EB_overpass_*_* | | | | | | | | | | | | | | | | | | | 5 | 340 | 6 | -2 |
| 60 | US15/501 WB overpass | US15/501WB_overpass_*_* | | | | | | | | | | | | | | | | | | | 5 | 610 | 12 | 2 |
| 61 | I85/I40 to I40EB | I85_I40_to_I40EB_* | | | | | | | | | | | | | | | | | | | 3 | 742 | 26 | 105 |

# APPENDIX C
ALL RESULTS TABLE

**CEDAR RIDGE HIGH SCHOOL**
**CALCULATION OF EQUIVALENT RECEPTOR VALUE FOR A PARK**
**ACTIVITY CATEGORY C**

| Park / Recreation Area (Activity Category C) | | |
|---|---|---|
| Line | **For an Average Single Family Residential Unit in North Carolina** | |
| A | People per Residence | 3.0 |
| B | Hours Available for Use per Year | 8760 |
| C | **Person-hours per Year Available for Use = A x B** | **26280** |
| | **For the Park Area Being Evaluated** | |
| D | Percent of Usable Area of Park Impacted by Project Noise | 6% |
| E | Percent of Usable Area of Park Benefited by Proposed Noise Wall | 34% |
| F | **Maximum of D and E** | **34%** |
| G | Average Number of Visitors per Day | 300 |
| H | Number of Park Staff | 1 |
| I | **Total Number of Occupants per Day = G + H** | **301** |
| J | Average Hours per Day Used by Each Visitor | 1 |
| K | Operational Days per Week | 5 |
| L | Operational Weeks per Year | 52 |
| M | **Person-hours per Year Available for Use = F x I x J x K x L** | **26,608** |
| N | **EQUIVALENT RESIDENCE VALUE = M/C** | **1.0** |
| O | A grid of receptor points at 100-foot spacing (represented by 30 points in this example) was developed to represent the impacted or benefited park usage area. | 47 |
| P | **Equivalent Residence Value Assigned to Each Grid Point = N/O** | **0.02** |
| Q | Number of Votes Assigned to Park in Barrier Voting Process = N | 1 |

| | | |
|---|---|---|
| **KEY:** | Input Values | |
| | **Calculated Values in Bold Text** | |

**BLACKWOOD FARM PARK**
**CALCULATION OF EQUIVALENT RECEPTOR VALUE FOR A TRAIL**
**ACTIVITY CATEGORY C**

| Trail (Activity Category C) | | |
|---|---|---|
| Line | **For an Average Single Family Residential Unit in North Carolina** | |
| A | People per Residence | 3.0 |
| B | Hours Available for Use per Year | 8,760 |
| C | **Person-hours per Year Available for Use = A x B** | **26,280** |
| | **For the Trail Area Being Evaluated** | |
| D | Average Number of Persons per Hour Using Trail | 4 |
| E | Length of Trail Within Impacted Area (feet) | 1293 |
| F | Length of Trail Within Benefited Area (feet) | 1293 |
| G | **Maximum of E and F** | **1293** |
| H | **Hours that each Person is on the Impacted or Benefited Portion of the Trail (based on average of 2 mph) = (F/5280)/2** | **0.12** |
| I | Hours that Trail is Available for Use per Day | 12 |
| J | Days per Week that Trail is Available for Use | 7 |
| K | Weeks per Year that Trail is Availble for Use | 52 |
| L | **Person-hours per Year Available for Use = D x H x I x J x K** | **2,139** |
| M | **EQUIVALENT RESIDENCE VALUE = L/C** | **0.08** |
| N | Spacing of Receptors Used to Model Trail (feet) | 100 |
| O | **Number of Receptors Used to Model Trail within Benefited Area = G/N** | **12** |
| P | **Equivalent Residence Value Assigned to Each Grid Point = M/O** | **0.01** |
| Q | Number of Votes Assigned to Trail in Barrier Voting Process = M | 0 |

| | | |
|---|---|---|
| **KEY:** | Input Values | |
| | **Calculated Values in Bold Text** | |

| I-40 Widening, STIP #I-3306A Noise Levels and Noise Impacts | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Receptors | | | | | | Predicted Noise Levels, $L_{eq(h)}$ (dB(A)) | | | |
| Rec. No. | | Use | NAC | ERs | Address | Ex. | No-Build | Build | Change (Bld-Ex) |
| NSA 1 | 1.01 | Residential | B | 1 | 1319 DIMMOCKS MILL RD | 72 | 73 | 74 | 2 |
| NSA 2 | 2.01 | Residential | B | 1 | 1218 DIMMOCKS MILL RD | 64 | 65 | 65 | 1 |
| | 2.02 | Residential | B | 1 | 1218 DIMMOCKS MILL RD | 65 | 65 | 65 | 0 |
| NSA 3 | 3.01 | Residential | B | 1 | 1229 DIMMOCKS MILL RD | 65 | 66 | 67 | 2 |
| | 3.02 | Residential | B | 1 | 1414 DIMMOCKS MILL RD | 69 | 70 | 70 | 1 |
| NSA 4 | 4.01 | Residential | B | 1 | 1229 DIMMOCKS MILL RD | 69 | 71 | 71 | 2 |
| | 4.02 | Residential | B | 1 | 1231 DIMMOCKS MILL RD | 63 | 65 | 65 | 2 |
| NSA 5 | 5.01 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 60 | 2 |
| | 5.02 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 60 | 2 |
| | 5.03 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 61 | 62 | 2 |
| | 5.04 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 61 | 2 |
| | 5.05 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 61 | 2 |
| | 5.06 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 60 | 2 |
| | 5.07 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 60 | 2 |
| | 5.08 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 61 | 2 |
| | 5.09 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 61 | 2 |
| | 5.10 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 61 | 2 |
| | 5.11 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 61 | 2 |
| | 5.12 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 59 | 1 |
| | 5.13 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 60 | 2 |
| | 5.14 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 61 | 2 |
| | 5.15 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 60 | 2 |
| | 5.16 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 61 | 2 |
| | 5.17 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 61 | 62 | 2 |
| | 5.18 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 62 | 64 | 3 |
| | 5.19 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 63 | 65 | 4 |
| | 5.20 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 61 | 63 | 3 |
| | 5.21 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 61 | 2 |
| | 5.22 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 61 | 3 |
| | 5.23 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 63 | 4 |
| | 5.24 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 62 | 64 | 3 |
| | 5.25 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 62 | 63 | 66 [6] | 4 |
| | 5.26 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 62 | 64 | 67 [6] | 5 |
| | 5.27 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 62 | 66 [6] | 5 |
| | 5.28 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 61 | 64 | 4 |
| | 5.29 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 62 | 4 |
| | 5.30 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 62 | 3 |
| | 5.31 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 60 | 2 |
| | 5.32 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 57 | 58 | 59 | 2 |
| | 5.33 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 61 | 3 |
| | 5.34 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 62 | 3 |
| | 5.35 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 60 | 63 | 4 |
| | 5.36 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 61 | 3 |
| | 5.37 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 57 | 57 | 59 | 2 |
| | 5.38 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 56 | 57 | 58 | 2 |
| | 5.39 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 55 | 56 | 58 | 3 |
| | 5.40 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 56 | 57 | 59 | 3 |
| | 5.41 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 61 | 3 |
| | 5.42 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 61 | 63 | 3 |
| | 5.43 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 62 | 64 | 3 |
| | 5.44 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 58 | 60 | 2 |
| | 5.45 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 56 | 57 | 58 | 2 |
| | 5.46 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 56 | 56 | 58 | 2 |
| | 5.47 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 59 | 61 | 3 |
| | 5.48 | School | D | 1 | 1125 NEW GRADY BROWN SCHOOL RD | 59(34)[4] | 59(34)[4] | 60(35)[4] | 1 |
| NSA 6[7] | 6.01 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 61 | 71 | 72 | 11 |
| | 6.02 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 57 | 66 | 66 | 9 |
| | 6.03 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 66 | 65 | 65 | 0 |
| | 6.04 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 69 | 64 | 64 | 0 |
| | 6.05 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 64 | 65 | 65 | 1 |
| | 6.06 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 62 | 64 | 64 | 2 |
| | 6.07 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 64 | 66 | 66 | 2 |
| | 6.08 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 61 | 62 | 62 | 1 |

| Receptors | | | | | | Predicted Noise Levels, $L_{eq(h)}$ (dB(A)) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rec. No. | | Use | NAC | ERs | Address | Ex. | No-Build | Build | Change (Bld-Ex) |
| NSA 6[7] | 6.09 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 65 | 66 | 66 | 1 |
| | 6.10 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 71 | 72 | 72 | 1 |
| | 6.11 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 72 | 72 | 0 |
| | 6.12 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 63 | 64 | 63 | 0 |
| | 6.13 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 61 | 62 | 62 | 1 |
| | 6.14 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 63 | 64 | 64 | 1 |
| | 6.15 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 62 | 63 | 64 | 2 |
| | 6.16 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 61 | 62 | 63 | 2 |
| | 6.17 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 63 | 63 | 1 |
| | 6.18 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 61 | 62 | 62 | 1 |
| | 6.19 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 71 | 72 | 72 | 1 |
| | 6.20 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 72 | 72 | 0 |
| | 6.21 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 72 | 72 | 0 |
| | 6.22 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 63 | 63 | 1 |
| | 6.23 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 63 | 63 | 1 |
| | 6.24 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 59 | 61 | 61 | 2 |
| | 6.25 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 60 | 62 | 62 | 2 |
| | 6.26 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 63 | 63 | 1 |
| | 6.27 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 72 | 72 | 0 |
| | 6.28 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 72 | 72 | 0 |
| | 6.29 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 61 | 62 | 62 | 1 |
| | 6.30 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 60 | 61 | 61 | 1 |
| | 6.31 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 60 | 61 | 61 | 1 |
| | 6.32 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 58 | 60 | 60 | 2 |
| | 6.33 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 53 | 54 | 54 | 1 |
| | 6.34 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 57 | 59 | 58 | 1 |
| | 6.35 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 54 | 56 | 56 | 2 |
| | 6.36 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 53 | 55 | 55 | 2 |
| | 6.37 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 58 | 59 | 59 | 1 |
| | 6.38 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 56 | 58 | 58 | 2 |
| | 6.39 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 61 | 62 | 62 | 1 |
| | 6.40 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 72 | 72 | 0 |
| | 6.41 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 72 | 72 | 0 |
| | 6.42 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 71 | 72 | 72 | 1 |
| | 6.43 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 62 | 63 | 1 |
| | 6.44 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 55 | 56 | 57 | 2 |
| | 6.45 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 56 | 57 | 57 | 1 |
| | 6.46 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 55 | 57 | 57 | 2 |
| | 6.47 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 54 | 56 | 56 | 2 |
| | 6.48 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home | 55 | 57 | 57 | 2 |
| | 6.49 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 56 | 57 | 57 | 1 |
| | 6.50 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 69 | 69 | 69 | 0 |
| | 6.51 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 69 | 69 | 70 | 1 |
| | 6.52 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 67 | 67 | 68 | 1 |
| | 6.53 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 63 | 64 | 65 | 2 |
| | 6.54 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 61 | 61 | 62 | 1 |
| | 6.55 | Residential | B | 1 | 998 TIMBERS DR (Hillsborough Mobile Home | 60 | 60 | 61 | 1 |
| | 6.56 | Residential | B | 1 | BINFORD ST (Hillsborough Mobile Home Park) | 59 | 59 | 60 | 1 |
| | 6.57 | Residential | B | 1 | BINFORD ST (Hillsborough Mobile Home Park) | 58 | 58 | 59 | 1 |
| | 6.58 | Residential | B | 1 | BINFORD ST (Hillsborough Mobile Home Park) | 57 | 57 | 58 | 1 |
| | 6.59 | Residential | B | 1 | BINFORD ST | 57 | 58 | 59 | 2 |
| | 6.60 | Residential | B | 1 | 1001 TIMBER ST | 56 | 57 | 58 | 2 |
| | 6.61 | Residential | B | 1 | 998 TIMBERS DR | 62 | 62 | 64 | 2 |
| | 6.62 | Residential | B | 1 | 2398 HEDGEPATH DR | 68 | 69 | 69 | 1 |
| | 6.63 | Residential | B | 1 | 223 ROMERO GROVE LN | 53 | 55 | 55 | 2 |
| | 6.64 | Residential | B | 1 | 901 TIMBER ST | 58 | 61 | 61 | 3 |
| | 6.65 | Residential | B | 1 | 2317 ORANGE GROVE RD | 63 | 65 | 65 | 2 |
| | 6.66 | Residential | B | 1 | 2323 ORANGE GROVE RD | 72 | 72 | 72 | 0 |
| NSA 7 | 7.01 | Residential | B | 1 | 2326 ORANGE GROVE RD | 66 | 67 | 67 | 1 |
| | 7.02 | Residential | B | 1 | 1535 RIVERSIDE DR | 63 | 63 | 64 | 1 |
| | 7.03 | Residential | B | 1 | 904 NEW GRADY BROWN SCHOOL RD | 61 | 62 | 63 | 2 |
| | 7.04 | Residential | B | 1 | 818 GRADY BROWN SCHOOL RD | 56 | 57 | 57 | 1 |
| | 7.05 | Residential | B | 1 | 2405 TIMBER OAK DR | 56 | 56 | 56 | 0 |
| | 7.06 | Residential | B | 1 | 401 NEW GRADY BROWN SCHOOL RD | 53 | 54 | 55 | 2 |

| Receptors | | | | | | Predicted Noise Levels, $L_{eq(h)}$ (dB(A)) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rec. No. | | Use | NAC | ERs | Address | Ex. | No-Build | Build | Change (Bld-Ex) |
| NSA 7 | 7.07 | Residential | B | 1 | 614 NEW GRADY BROWN SCHOOL RD | 56 | 56 | 57 | 1 |
| | 7.08 | Residential | B | 1 | 2420 TIMBER OAK DR | 52 | 52 | 53 | 1 |
| | 7.09 | Residential | B | 1 | 520 NEW GRADY BROWN SCH RD | 56 | 57 | 57 | 1 |
| | 7.10 | Residential | B | 1 | 504 NEW GRADY BROWN SCHOOL RD | 55 | 55 | 56 | 1 |
| | 7.11 | Residential | B | 1 | 508 NEW GRADY BROWN SCH RD | 59 | 59 | 60 | 1 |
| | 7.12 | Residential | B | 1 | 500 NEW GRADY BROWN SCHOOL RD | 64 | 64 | 65 | 1 |
| NSA 8[7] | 8.01 | Residential | B | 1 | 2322 ORANGE GROVE RD | 62 | 64 | 65 | 3 |
| | 8.02 | Residential | B | 1 | 2316 ORANGE GROVE RD | 61 | 63 | 63 | 2 |
| | 8.03 | Residential | B | 1 | 2310 ORANGE GROVE RD | 60 | 63 | 62 | 2 |
| | 8.04 | Residential | B | 1 | 2302 ORANGE GROVE RD | 61 | 64 | 64 | 3 |
| | 8.05 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 54 | 56 | 56 | 2 |
| | 8.06 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 51 | 53 | 53 | 2 |
| | 8.07 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 50 | 52 | 52 | 2 |
| | 8.08 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 52 | 54 | 54 | 2 |
| | 8.09 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 53 | 55 | 55 | 2 |
| | 8.10 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 51 | 53 | 53 | 2 |
| | 8.11 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 49 | 51 | 51 | 2 |
| | 8.12 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 50 | 52 | 52 | 2 |
| | 8.13 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 52 | 53 | 53 | 1 |
| | 8.14 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 53 | 54 | 54 | 1 |
| | 8.15 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 55 | 56 | 56 | 1 |
| | 8.16 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 52 | 53 | 53 | 1 |
| | 8.17 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 50 | 52 | 52 | 2 |
| | 8.18 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 51 | 52 | 52 | 1 |
| | 8.19 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 52 | 53 | 53 | 1 |
| | 8.20 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 54 | 56 | 56 | 2 |
| | 8.21 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 55 | 56 | 57 | 2 |
| | 8.22 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 51 | 53 | 53 | 2 |
| | 8.23 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 50 | 51 | 51 | 1 |
| | 8.24 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 50 | 52 | 52 | 2 |
| | 8.25 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 52 | 53 | 53 | 1 |
| | 8.26 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 55 | 56 | 57 | 2 |
| | 8.27 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 56 | 57 | 57 | 1 |
| | 8.28 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 53 | 54 | 54 | 1 |
| | 8.29 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 50 | 51 | 52 | 2 |
| | 8.30 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 51 | 52 | 53 | 2 |
| | 8.31 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 55 | 56 | 56 | 1 |
| | 8.32 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 57 | 58 | 59 | 2 |
| | 8.33 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 61 | 61 | 62 | 1 |
| | 8.34 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 55 | 55 | 56 | 1 |
| | 8.35 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 51 | 52 | 52 | 1 |
| | 8.36 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 52 | 52 | 53 | 1 |
| | 8.37 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 51 | 52 | 53 | 2 |
| | 8.38 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 57 | 57 | 57 | 0 |
| | 8.39 | Residential | B | 1 | 885 OAKDALE DR (Mobile Home Park) | 60 | 60 | 61 | 1 |
| NSA 9 | 9.01 | Residential | B | 1 | 832 OAKDALE DR | 59 | 59 | 60 | 1 |
| | 9.02 | Residential | B | 1 | 836 OAKDALE DR | 70 | 71 | 71 | 1 |
| | 9.03 | Residential | B | 1 | 826 OAKDALE DR | 65 | 65 | 65 | 0 |
| | 9.04 | Residential | B | 1 | 820 OAKDALE DR | 52 | 53 | 53 | 1 |
| | 9.05 | Residential | B | 1 | 814 OAKDALE DR | 57 | 57 | 57 | 0 |
| | 9.06 | Residential | B | 1 | 909 BOX 38 OAKDALE DR | 50 | 50 | 51 | 1 |
| | 9.07 | Residential | B | 1 | 2321 BLAIR DR | 51 | 52 | 52 | 1 |
| | 9.08 | Residential | B | 1 | 2327 BLAIR DR | 55 | 55 | 56 | 1 |
| | 9.09 | Residential | B | 1 | 2331 BLAIR DR | 60 | 60 | 61 | 1 |
| | 9.10 | Residential | B | 1 | 2335 BLAIR DR | 65 | 65 | 66 | 1 |
| | 9.11 | Residential | B | 1 | 2318 BLAIR DR | 47 | 47 | 48 | 1 |
| | 9.12 | Residential | B | 1 | 2338 BLAIR DR | 53 | 53 | 54 | 1 |
| | 9.13 | Residential | B | 1 | 2338 BLAIR DR | 59 | 60 | 60 | 1 |
| NSA 10 | 10.01 | Residential | B | 1 | 3209 OLD CH HILLSBOROUGH RD | 66 | 68 | 68 | 2 |
| | 10.02 | Residential | B | 1 | 3303 OLD NC 86 S | 62 | 64 | 65 | 3 |
| | 10.03 | Residential | B | 1 | 3315 OLD NC 86 | 62 | 65 | 66 | 4 |
| | 10.04 | Residential | B | 1 | 3319 OLD NC HWY 86 | 58 | 60 | 62 | 4 |
| | 10.05 | Residential | B | 1 | 3401 OLD NC 86 | 58 | 61 | 62 | 4 |
| NSA 11 | 11.01 | Residential | B | 1 | RIPPY LN | 62 | 62 | 64 | 2 |

| Receptors | | | | | | Predicted Noise Levels, $L_{eq(h)}$ (dB(A)) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rec. No. | | Use | NAC | ERs | Address | Ex. | No-Build | Build | Change (Bld-Ex) |
| NSA 12 | 12.01 | Residential | B | 1 | 3210 A OLD NC 86 | 65 | 66 | 67 | 2 |
| | 12.02 | Residential | B | 1 | 3224 OLD NC 86 | 62 | 64 | 64 | 2 |
| | 12.03 | Residential | B | 1 | 3300 OLD NC 86 | 59 | 61 | 61 | 2 |
| | 12.04 | Residential | B | 1 | 3312 OLD NC 86 | 63 | 66 | 67 | 4 |
| | 12.05 | Residential | B | 1 | 3400 OLD NC 86 | 62 | 65 | 65 | 3 |
| NSA 13[7] | 13.01 | Medical Center | D | 1 | 460 WATERSTONE DRIVE | 61(36)[4] | 61(36)[4] | 64(39)[4] | 3 |
| | 13.02 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 64 | 64 | 67 | 3 |
| | 13.03 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 65 | 65 | 68 | 3 |
| | 13.04 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 67 | 67 | 69 | 2 |
| | 13.05 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 67 | 67 | 69 | 2 |
| | 13.06 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 63 | 63 | 65 | 2 |
| | 13.07 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 63 | 63 | 65 | 2 |
| | 13.08 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 63 | 63 | 65 | 2 |
| | 13.09 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 61 | 61 | 63 | 2 |
| | 13.10 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 60 | 60 | 62 | 2 |
| | 13.11 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 59 | 59 | 61 | 2 |
| | 13.12 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 65 | 65 | 67 | 2 |
| | 13.13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 65 | 65 | 67 | 2 |
| | 13.14 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 65 | 65 | 67 | 2 |
| | 13.15 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 64 | 64 | 66 | 2 |
| | 13.16 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 64 | 64 | 66 | 2 |
| | 13.17 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 63 | 63 | 65 | 2 |
| | 13.18 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 62 | 62 | 64 | 2 |
| | 13.19 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 62 | 62 | 64 | 2 |
| | 13.20 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 61 | 61 | 63 | 2 |
| NSA 14[7] | 14.01 | Residential | B | 1 | 1608 SCARLETT MOUNTAIN RD | 60 | 60 | 61 | 1 |
| | 14.02 | Residential | B | 1 | 1600 E SCARLETT MT RD | 58 | 58 | 60 | 2 |
| | 14.03 | Residential | B | 1 | 1622 SCARLETT MOUNTAIN RD | 60 | 60 | 61 | 1 |
| | 14.04 | Trail | C | 0.01 | 4215 NC86 | 60 | 60 | 62 | 2 |
| | 14.05 | Trail | C | 0.01 | 4215 NC86 | 62 | 62 | 63 | 1 |
| | 14.06 | Trail | C | 0.01 | 4215 NC86 | 62 | 62 | 63 | 1 |
| | 14.07 | Trail | C | 0.01 | 4215 NC86 | 62 | 62 | 64 | 2 |
| | 14.08 | Trail | C | 0.01 | 4215 NC86 | 63 | 63 | 64 | 1 |
| | 14.09 | Trail | C | 0.01 | 4215 NC86 | 64 | 64 | 65 | 1 |
| | 14.10 | Trail | C | 0.01 | 4215 NC86 | 65 | 65 | 66[6] | 1 |
| | 14.11 | Trail | C | 0.01 | 4215 NC86 | 64 | 64 | 66[6] | 2 |
| | 14.12 | Trail | C | 0.01 | 4215 NC86 | 63 | 63 | 64 | 1 |
| | 14.13 | Trail | C | 0.01 | 4215 NC86 | 61 | 61 | 62 | 1 |
| | 14.14 | Trail | C | 0.01 | 4215 NC86 | 60 | 60 | 61 | 1 |
| | 14.15 | Trail | C | 0.01 | 4215 NC86 | 59 | 59 | 60 | 1 |
| NSA 15 | 15.01 | Residential | B | 1 | 420 BRITTON DR | 58 | 58 | 61 | 3 |
| | 15.02 | Residential | B | 1 | 4334 VALLIE HI LN | 54 | 56 | 57 | 3 |
| NSA 16 | 16.01 | Residential | B | 1 | 1201 NEW HOPE CHURCH RD | 57 | 59 | 61 | 4 |
| | 16.02 | Residential | B | 1 | 1201 NEW HOPE CHURCH RD | 54 | 55 | 57 | 3 |
| | 16.03 | Residential | B | 1 | 5208 HOMER RUFFIN RD | 63 | 63 | 66 | 3 |
| NSA 17 | 17.01 | Playground | C | 1 | 1315 NEW HOPE TRACE | 56 | 57 | 59 | 3 |
| | 17.02 | Church | D | 1 | 1315 NEW HOPE TRACE | 57(25)[4] | 58(26)[4] | 61(36)[4] | 4 |
| | 17.03 | Picnic Area | C | 1 | 1315 NEW HOPE TRACE | 57 | 58 | 61 | 4 |
| | 17.04 | Residential | B | 1 | 6114 MEADOWSWEET LN | 57 | 57 | 59 | 2 |
| | 17.05 | Residential | B | 1 | 5317 HIDEAWAY DR | 57 | 57 | 59 | 2 |
| | 17.06 | Residential | B | 1 | 5321 HIDEAWAY DR | 59 | 59 | 61 | 2 |
| | 17.07 | Residential | B | 1 | 302 MEADOW LN | 60 | 60 | 62 | 2 |
| | 17.08 | Residential | B | 1 | 5401 HIDEWAY DR | 60 | 60 | 62 | 2 |
| | 17.09 | Residential | B | 1 | 6025 MEADOW GREER RD | 64 | 64 | 66 | 2 |
| | 17.10 | Residential | B | 1 | 6027 MEADOW GREER RD | 67 | 67 | 70 | 3 |
| | 17.11 | Residential | B | 1 | 6019 MEADOW GREER RD | 57 | 57 | 59 | 2 |
| | 17.12 | Residential | B | 1 | 6022 MEADOW GREER RD | 64 | 64 | 67 | 3 |
| | 17.13 | Residential | B | 1 | 6018 MEADOW GREER RD | 60 | 60 | 63 | 3 |
| | 17.14 | Residential | B | 1 | 6014 MEADOW GREER RD | 59 | 59 | 62 | 3 |
| | 17.15 | Residential | B | 1 | 5623 HIDEAWAY DR | 53 | 53 | 55 | 2 |
| | 17.16 | Residential | B | 1 | 5629 HIDEAWAY DR | 53 | 53 | 55 | 2 |
| | 17.17 | Residential | B | 1 | 5635 HIDEAWAY DR | 55 | 55 | 57 | 2 |
| | 17.18 | Residential | B | 1 | 5635 HIDEAWAY DR | 57 | 57 | 59 | 2 |
| | 17.19 | Residential | B | 1 | 5635 HIDEAWAY DR | 58 | 58 | 60 | 2 |

| Receptors | | | | | | Predicted Noise Levels, $L_{eq(h)}$ (dB(A)) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rec. No. | | Use | NAC | ERs | Address | Ex. | No-Build | Build | Change (Bld- Ex) |
| NSA 17 | 17.20 | Residential | B | 1 | 5705 HIDEAWAY DR | 55 | 55 | 57 | 2 |
| | 17.21 | Residential | B | 1 | 5715 HIDEAWAY DR | 56 | 56 | 58 | 2 |
| | 17.22 | Residential | B | 1 | 5721 HIDEAWAY DR | 58 | 58 | 61 | 3 |
| | 17.23 | Residential | B | 1 | 5803 HIDEAWAY DR | 62 | 62 | 64 | 2 |
| | 17.24 | Residential | B | 1 | 5809 HIDEAWAY DR | 63 | 63 | 65 | 2 |
| | 17.25 | Residential | B | 1 | 5901 HIDEWAY DR | 62 | 62 | 63 | 1 |
| | 17.26 | Residential | B | 1 | 5904 HIDEAWAY DR | 59 | 59 | 60 | 1 |
| | 17.27 | Residential | B | 1 | 5912 HIDEAWAY DR | 59 | 59 | 60 | 1 |
| | 17.28 | Residential | B | 1 | 5911 HIDEWAY DR | 62 | 62 | 64 | 2 |
| NSA 18 | 18.01 | Residential | B | 1 | 6023 NC 86 | 57 | 57 | 59 | 2 |
| | 18.02 | Residential | B | 1 | 6023 NC 86 | 57 | 57 | 59 | 2 |
| | 18.03 | Residential | B | 1 | 6023 NC 86 | 58 | 58 | 60 | 2 |
| | 18.04 | Residential | B | 1 | 6023 NC 86 | 59 | 59 | 61 | 2 |
| | 18.05 | Residential | B | 1 | 6023 NC 86 | 59 | 59 | 61 | 2 |
| | 18.06 | Residential | B | 1 | 6023 NC 86 | 60 | 60 | 62 | 2 |
| NSA 19 | 19.01 | Playground | C | 1 | 6211 JERICHO RD | 62 | 62 | 65 | 3 |
| NSA 20 | 20.01 | Residential | B | 1 | 1924 MT SINAI RD | 64 | 64 | 66 | 2 |
| | 20.02 | Residential | B | 1 | 1924 MT SINAI RD | 65 | 65 | 66 | 1 |
| | 20.03 | Residential | B | 1 | 6421 NC 86 N | 65 | 65 | 66 | 1 |
| | 20.04 | Residential | B | 1 | 6421 NC 86 N | 63 | 63 | 64 | 1 |
| | 20.05 | Residential | B | 1 | 6421 NC 86 N | 67 | 67 | 68 | 1 |
| NSA 21[8] | 21.01 | Residential | B | 1 | 2114 EUBANKS RD | 60 | 63 | 65 | 5 |
| NSA 22a | 22a.01 | Residential | B | 1 | 2107 CLYDE RD | 68 | 68 | 70 | 2 |
| | 22a.02 | Residential | B | 1 | 2107 CLYDE RD | 67 | 67 | 69 | 2 |
| | 22a.03 | Residential | B | 1 | 2107 CLYDE RD | 60 | 60 | 62 | 2 |
| NSA 22b[7] | 22b.01 | Residential | B | 1 | 300 OLD MOZE TRAIL (Mobile Home Park) | 54 | 57 | 61 | 7 |
| | 22b.02 | Residential | B | 1 | 300 OLD MOZE TRAIL (Mobile Home Park) | 60 | 63 | 67 | 7 |
| | 22b.03 | Residential | B | 1 | 300 OLD MOZE TRAIL (Mobile Home Park) | 59 | 62 | 66 | 7 |
| | 22b.04 | Residential | B | 1 | 300 OLD MOZE TRAIL (Mobile Home Park) | 55 | 56 | 60 | 5 |
| | 22b.05 | Residential | B | 1 | 300 OLD MOZE TRAIL (Mobile Home Park) | 55 | 56 | 59 | 4 |
| | 22b.06 | Residential | B | 1 | 5 HURRICANE ALLEY (Mobile Home Park) | 55 | 56 | 58 | 3 |
| | 22b.07 | Residential | B | 1 | 5 HURRICANE ALLEY (Mobile Home Park) | 55 | 56 | 58 | 3 |
| | 22b.08 | Residential | B | 1 | 5 HURRICANE ALLEY (Mobile Home Park) | 56 | 56 | 58 | 2 |
| | 22b.09 | Residential | B | 1 | 512 HURRICANE ALLEY (Mobile Home Park) | 56 | 57 | 58 | 2 |
| | 22b.10 | Residential | B | 1 | 512 HURRICANE ALLEY (Mobile Home Park) | 56 | 57 | 58 | 2 |
| | 22b.11 | Residential | B | 1 | 512 HURRICANE ALLEY (Mobile Home Park) | 57 | 57 | 58 | 1 |
| | 22b.12 | Residential | B | 1 | 512 HURRICANE ALLEY (Mobile Home Park) | 57 | 58 | 59 | 2 |
| | 22b.13 | Residential | B | 1 | 512 HURRICANE ALLEY (Mobile Home Park) | 58 | 58 | 59 | 1 |
| | 22b.14 | Residential | B | 1 | 512 HURRICANE ALLEY (Mobile Home Park) | 58 | 58 | 59 | 1 |
| | 22b.15 | Residential | B | 1 | 512 HURRICANE ALLEY (Mobile Home Park) | 59 | 59 | 60 | 1 |
| | 22b.16 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 58 | 58 | 59 | 1 |
| | 22b.17 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 57 | 57 | 58 | 1 |
| | 22b.18 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 57 | 57 | 58 | 1 |
| | 22b.19 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 57 | 57 | 58 | 1 |
| | 22b.20 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 57 | 57 | 59 | 2 |
| | 22b.21 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 57 | 57 | 59 | 2 |
| | 22b.22 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 57 | 57 | 59 | 2 |
| | 22b.23 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 56 | 57 | 59 | 3 |
| | 22b.24 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 56 | 57 | 59 | 3 |
| | 22b.25 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 56 | 58 | 60 | 4 |
| | 22b.26 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 56 | 58 | 61 | 5 |
| | 22b.27 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 57 | 59 | 62 | 5 |
| | 22b.28 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 57 | 60 | 64 | 7 |
| | 22b.29 | Residential | B | 1 | MARY KATHRYN LN (Mobile Home Park) | 63 | 67 | 72 | 9 |
| NSA 23 | 23.01 | Residential | B | 1 | 244 SEMINOLE DR | 62 | 63 | 65 | 3 |
| | 23.02 | Residential | B | 1 | 7120 DUMFIRES LN | 52 | 53 | 56 | 4 |
| | 23.03 | Residential | B | 1 | 7116 DUMFRIES LN | 53 | 54 | 57 | 4 |
| | 23.04 | Residential | B | 1 | 7112 DUMFRIES LN | 57 | 57 | 60 | 3 |
| NSA 24 | 24.01 | Residential | B | 1 | 103 BAYWOOD PL | 61 | 64 | 66 | 5 |
| | 24.02 | Residential | B | 1 | 106 BAYWOOD PL | 60 | 63 | 65 | 4 |
| | 24.03 | Residential | B | 1 | 101 BAYWOOD PLACE | 55 | 58 | 59 | 4 |
| | 24.04 | Residential | B | 1 | 105 GROOMSBRIDGE CT | 55 | 57 | 59 | 4 |
| | 24.05 | Residential | B | 1 | 104 GROOMSBRIDGE CT | 60 | 62 | 63 | 2 |
| | 24.06 | Residential | B | 1 | 103 GROOMSBRIDGE CT | 62 | 65 | 66 | 3 |

| Receptors | | | | | | Predicted Noise Levels, $L_{eq(h)}$ (dB(A)) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rec. No. | | Use | NAC | ERs | Address | Ex. | No-Build | Build | Change (Bld- Ex) |
| NSA 24 | 24.07 | Residential | B | 1 | 102 GROOMSBRIDGE CT | 61 | 64 | 64 | 3 |
| | 24.08 | Residential | B | 1 | 101 GROOMSBRIDGE CT | 58 | 60 | 62 | 4 |
| | 24.09 | Residential | B | 1 | 106 GROOMSBRIDGE CT | 55 | 56 | 58 | 3 |
| | 24.10 | Residential | B | 1 | 202 NORTHWOOD DR | 51 | 52 | 54 | 3 |
| | 24.11 | Residential | B | 1 | 101 HUNTER HILL RD | 52 | 53 | 55 | 3 |
| | 24.12 | Residential | B | 1 | 115 NORTHWOOD DR | 54 | 55 | 57 | 3 |
| | 24.13 | Residential | B | 1 | 102 WALDEN PL | 52 | 53 | 55 | 3 |
| | 24.14 | Residential | B | 1 | 113 NORTHWOOD DR | 53 | 54 | 56 | 3 |
| | 24.15 | Residential | B | 1 | 116 NORTHWOOD DR | 56 | 57 | 59 | 3 |
| | 24.16 | Residential | B | 1 | 114 NORTHWOOD DR | 58 | 59 | 61 | 3 |
| | 24.17 | Residential | B | 1 | 111 NORTHWOOD DR | 53 | 54 | 57 | 4 |
| | 24.18 | Cemetary Seating | C | 1 | 7707 NC 86 | 64 | 65 | 68 | 4 |
| | 24.19 | Church | D | 1 | 7708 NC 86 | 66(41)[4] | 67(42)[4] | 70(45)[4] | 4 |
| | 24.20 | Residential | B | 1 | 110 NORTHWOOD DR | 59 | 60 | 64 | 5 |
| | 24.21 | Residential | B | 1 | 108 NORTHWOOD DR | 60 | 61 | 66 | 6 |
| | 24.22 | Residential | B | 1 | 104 AUTUMN LN | 50 | 51 | 53 | 3 |
| | 24.23 | Residential | B | 1 | 105 AUTUMN LN | 44 | 45 | 48 | 4 |
| | 24.24 | Residential | B | 1 | 103 AUTUMN LN | 46 | 47 | 50 | 4 |
| | 24.25 | Residential | B | 1 | 101 AUTUMN LN | 48 | 49 | 52 | 4 |
| | 24.26 | Residential | B | 1 | 105 NORTHWOOD DR | 54 | 55 | 58 | 4 |
| | 24.27 | Residential | B | 1 | 104 NORTHWOOD DR | 60 | 61 | 65 | 5 |
| | 24.28 | Residential | B | 1 | 102 NORTHWOOD DR | 61 | 62 | 66 | 5 |
| | 24.29 | Residential | B | 1 | 100 NORTHWOOD DR | 61 | 62 | 66 | 5 |
| | 24.30 | Residential | B | 1 | 102 IVY CT | 55 | 56 | 59 | 4 |
| | 24.31 | Residential | B | 1 | 103 NORTHWOOD DR | 61 | 62 | 65 | 4 |
| | 24.32 | Residential | B | 1 | 100 IVY CT | 56 | 57 | 57 | 1 |
| | 24.33 | Residential | B | 1 | 112 NORTHWOOD DR | 58 | 59 | 61 | 3 |
| | 24.34 | Residential | B | 1 | 100 AUTUMN LN | 54 | 55 | 58 | 4 |
| | 24.35 | Residential | B | 1 | 102 AUTUMN LN | 52 | 53 | 55 | 3 |
| | 24.36 | Residential | B | 1 | 101 WALDEN PL | 52 | 53 | 55 | 3 |
| | 24.37 | Residential | B | 1 | 105 HUNTER HILL RD | 51 | 52 | 51 | 0 |
| | 24.38 | Residential | B | 1 | 106 AUTUMN LN | 48 | 49 | 53 | 5 |
| | 24.39 | Residential | B | 1 | 101 IVY CT | 50 | 51 | 52 | 2 |
| | 24.40 | Residential | B | 1 | 101 NORTHWOOD DR | 66 | 67 | 67 | 1 |
| | 24.41 | Outdoor Seating | C | 1 | 7708 NC 86 | 66 | 67 | 70 | 4 |
| NSA 25[7] | 25.01-1[5] | Residential | B | 1 | 200 PERKINS DR | 53 | 53 | 56 | 3 |
| | 25.01-2[5] | Residential | B | 1 | 200 PERKINS DR | 56 | 57 | 59 | 3 |
| | 25.01-3[5] | Residential | B | 1 | 200 PERKINS DR | 58 | 58 | 60 | 2 |
| | 25.01-4[5] | Residential | B | 1 | 200 PERKINS DR | 59 | 59 | 61 | 2 |
| | 25.02-2[5] | Residential | B | 1 | 500 PERKINS DR | 49 | 50 | 51 | 2 |
| | 25.03-2[5] | Residential | B | 1 | 500 PERKINS DR | 48 | 49 | 51 | 3 |
| | 25.04-2[5] | Residential | B | 1 | 500 PERKINS DR | 48 | 48 | 50 | 2 |
| | 25.05-2[5] | Residential | B | 1 | 500 PERKINS DR | 46 | 47 | 50 | 4 |
| | 25.06-2[5] | Residential | B | 1 | 500 PERKINS DR | 48 | 48 | 52 | 4 |
| | 25.07-2[5] | Residential | B | 1 | 500 PERKINS DR | 46 | 46 | 49 | 3 |
| | 25.08-1[5] | Residential | B | 1 | 200 PERKINS DR | 49 | 49 | 52 | 3 |
| | 25.08-2[5] | Residential | B | 1 | 200 PERKINS DR | 49 | 49 | 52 | 3 |
| | 25.08-3[5] | Residential | B | 1 | 200 PERKINS DR | 51 | 51 | 53 | 2 |
| | 25.08-4[5] | Residential | B | 1 | 200 PERKINS DR | 53 | 53 | 56 | 3 |
| | 25.09-1[5] | Residential | B | 1 | 200 PERKINS DR | 48 | 48 | 51 | 3 |
| | 25.09-2[5] | Residential | B | 1 | 200 PERKINS DR | 49 | 49 | 52 | 3 |
| | 25.09-3[5] | Residential | B | 1 | 200 PERKINS DR | 51 | 51 | 54 | 3 |
| | 25.09-4[5] | Residential | B | 1 | 200 PERKINS DR | 54 | 54 | 57 | 3 |
| | 25.10 | Picnic Area | C | 1 | 200 PERKINS DR | 54 | 54 | 57 | 3 |
| | 25.11-2[5] | Residential | B | 1 | 600 PERKINS DR | 59 | 59 | 61 | 2 |
| | 25.12-2[5] | Residential | B | 1 | 600 PERKINS DR | 55 | 55 | 57 | 2 |
| | 25.13-2[5] | Residential | B | 1 | 600 PERKINS DR | 56 | 56 | 58 | 2 |
| | 25.14-2[5] | Residential | B | 1 | 600 PERKINS DR | 57 | 57 | 60 | 3 |
| | 25.15-2[5] | Residential | B | 1 | 600 PERKINS DR | 59 | 59 | 61 | 2 |
| | 25.16-2[5] | Residential | B | 1 | 600 PERKINS DR | 61 | 61 | 64 | 3 |

| Receptors | | | | | | Predicted Noise Levels, $L_{eq(h)}$ (dB(A)) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rec. No. | | Use | NAC | ERs | Address | Ex. | No-Build | Build | Change (Bld-Ex) |
| NSA 25[7] | 25.17 | Playground | C | 1 | 200 PERKINS DR | 66 | 66 | 69 | 3 |
| | 25.18-2[5] | Residential | B | 1 | 700 PERKINS DR | 56 | 56 | 59 | 3 |
| | 25.19-2[5] | Residential | B | 1 | 700 PERKINS DR | 44 | 44 | 47 | 3 |
| | 25.20-2[5] | Residential | B | 1 | 700 PERKINS DR | 45 | 45 | 48 | 3 |
| | 25.21-2[5] | Residential | B | 1 | 700 PERKINS DR | 46 | 47 | 49 | 3 |
| | 25.22-2[5] | Residential | B | 1 | 700 PERKINS DR | 50 | 50 | 52 | 2 |
| | 25.23-2[5] | Residential | B | 1 | 700 PERKINS DR | 51 | 51 | 54 | 3 |
| | 25.24-2[5] | Residential | B | 1 | 700 PERKINS DR | 52 | 52 | 54 | 2 |
| | 25.25-2[5] | Residential | B | 1 | 700 PERKINS DR | 55 | 56 | 58 | 3 |
| | 25.26-2[5] | Residential | B | 1 | 800 PERKINS DR | 52 | 52 | 54 | 2 |
| NSA 26 | 26.01 | Residential | B | 1 | 2623 WHITFIELD RD | 59 | 59 | 62 | 3 |
| | 26.02 | Residential | B | 1 | 2719 WHITFIELD RD | 66 | 66 | 69 | 3 |
| | 26.03 | Residential | B | 1 | 2719 WHITFIELD RD | 58 | 58 | 60 | 2 |
| | 26.04 | Residential | B | 1 | 2719 WHITFIELD RD | 61 | 61 | 64 | 3 |
| | 26.05 | Residential | B | 1 | 113 FOXRIDGE RD | 60 | 60 | 63 | 3 |
| | 26.06 | Residential | B | 1 | 111 FOXRIDGE RD | 70 | 70 | 72 | 2 |
| NSA 27 | 27.01 | Residential | B | 1 | 221 SCHULTZ ST | 58 | 58 | 61 | 3 |
| | 27.02 | Residential | B | 1 | 217 SCHULTZ ST | 58 | 58 | 62 | 4 |
| | 27.03 | Residential | B | 1 | 209 SCHULTZ ST | 58 | 58 | 62 | 4 |
| | 27.04 | Residential | B | 1 | 211 SCHULTZ ST | 58 | 58 | 61 | 3 |
| | 27.05 | Residential | B | 1 | 205 SCHULTZ ST | 58 | 58 | 61 | 3 |
| | 27.06 | Residential | B | 1 | 155 SCHULTZ ST | 58 | 58 | 61 | 3 |
| NSA 28 | 28.01 | Residential | B | 1 | 18 MAFOLIE CT | 57 | 57 | 59 | 2 |
| | 28.02 | Residential | B | 1 | 16 MAFOLIE CT | 55 | 55 | 57 | 2 |
| | 28.03 | Residential | B | 1 | 22 MAFOLIE CT | 66 | 66 | 68 | 2 |
| | 28.04 | Residential | B | 1 | 24 SEDGEWOOD RD | 61 | 61 | 65 | 4 |
| | 28.05 | Residential | B | 1 | 26 SEDGEWOOD RD | 61 | 61 | 64 | 3 |
| | 28.06 | Residential | B | 1 | 28 SEDGEWOOD RD | 61 | 61 | 64 | 3 |
| | 28.07 | Residential | B | 1 | 7213 NORTH HILL DR | 52 | 52 | 55 | 3 |
| | 28.08 | Residential | B | 1 | 3415 FOREST OAKS DR | 51 | 51 | 54 | 3 |
| NSA 29[7] | 29.01 | Residential | B | 1 | 750 WEAVER DAIRY RD | 60 | 60 | 62 | 2 |
| | 29.02 | Residential | B | 1 | 750 WEAVER DAIRY RD | 59 | 59 | 61 | 2 |
| | 29.03 | Residential | B | 1 | 750 WEAVER DAIRY RD | 58 | 58 | 61 | 3 |
| | 29.04 | Residential | B | 1 | 750 WEAVER DAIRY RD | 57 | 57 | 60 | 3 |
| | 29.05 | Residential | B | 1 | 750 WEAVER DAIRY RD | 58 | 58 | 61 | 3 |
| | 29.06 | Residential | B | 1 | 750 WEAVER DAIRY RD | 59 | 59 | 61 | 2 |
| | 29.07 | Residential | B | 1 | 750 WEAVER DAIRY RD | 60 | 60 | 62 | 2 |
| | 29.08 | Residential | B | 1 | 750 WEAVER DAIRY RD | 61 | 61 | 63 | 2 |
| | 29.09 | Residential | B | 1 | 750 WEAVER DAIRY RD | 62 | 62 | 65 | 3 |
| | 29.10 | Residential | B | 1 | 750 WEAVER DAIRY RD | 58 | 58 | 61 | 3 |
| | 29.11 | Residential | B | 1 | 750 WEAVER DAIRY RD | 59 | 59 | 61 | 2 |
| | 29.12 | Residential | B | 1 | 750 WEAVER DAIRY RD | 58 | 58 | 61 | 3 |
| | 29.13 | Residential | B | 1 | 750 WEAVER DAIRY RD | 58 | 58 | 60 | 2 |
| | 29.14 | Residential | B | 1 | 750 WEAVER DAIRY RD | 57 | 57 | 60 | 3 |
| | 29.15 | Community Garden | C | 1 | 750 WEAVER DAIRY RD | 60 | 60 | 63 | 3 |
| NSA 30 | 30.01 | Residential | B | 1 | 1023 NORTHRIDGE LN | 62 | 62 | 66 | 4 |
| | 30.02 | Residential | B | 1 | 1017 NORTHRIDE DR | 58 | 59 | 63 | 5 |
| | 30.03 | Residential | B | 1 | 1024 NORTHRIDGE LN | 59 | 61 | 63 | 4 |
| NSA 31 | 31.01 | Church | D | 1 | 7326 SUNRISE ROAD | 69(44)[4] | 69(44)[4] | 71(46)[4] | 2 |
| NSA 32 | 32.01 | Residential | B | 1 | 103 YUKON LN | 54 | 54 | 56 | 2 |
| | 32.02 | Residential | B | 1 | 107 YUKON LN | 60 | 60 | 63 | 3 |
| | 32.03 | Residential | B | 1 | 106 YUKON LN | 63 | 63 | 68 | 5 |
| | 32.04 | Residential | B | 1 | 104 YUKON LN | 65 | 65 | 68 | 3 |
| | 32.05 | Residential | B | 1 | 102 YUKON LN | 56 | 56 | 59 | 3 |
| | 32.06 | Residential | B | 1 | 3830 SWEETEN CREEK RD | 52 | 52 | 55 | 3 |
| | 32.07 | Residential | B | 1 | 3830 SWEETEN CREEK RD | 52 | 52 | 54 | 2 |
| | 32.08 | Residential | B | 1 | 100 YUKON LN | 57 | 57 | 60 | 3 |
| | 32.09 | Residential | B | 1 | 3904 SWEETEN CREEK RD | 60 | 60 | 64 | 4 |
| | 32.10 | Residential | B | 1 | 3837 SWEETEN CREEK RD | 50 | 50 | 53 | 3 |
| | 32.11 | Residential | B | 1 | 3839 SWEETEN CREEK RD | 52 | 52 | 55 | 3 |
| | 32.12 | Residential | B | 1 | 3906 SWEETEN CREEK RD | 62 | 62 | 65 | 3 |
| | 32.13 | Residential | B | 1 | 3908 SWEETEN CREEK RD | 63 | 63 | 67 | 4 |
| | 32.14 | Residential | B | 1 | 3910 SWEETEN CREEK RD | 62 | 62 | 66 | 4 |
| | 32.15 | Residential | B | 1 | 101 TOYNBEE PLACE | 49 | 49 | 52 | 3 |

| Receptors | | | | | | Predicted Noise Levels, $L_{eq(h)}$ (dB(A)) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rec. No. | | Use | NAC | ERs | Address | Ex. | No-Build | Build | Change (Bld-Ex) |
| NSA 32 | 32.16 | Residential | B | 1 | 3903 SWEETEN CREEK | 47 | 47 | 50 | 3 |
| | 32.17 | Residential | B | 1 | 3912 SWEETEN CREEK | 60 | 60 | 63 | 3 |
| | 32.18 | Residential | B | 1 | 3914 SWEETEN CREEK RD | 60 | 60 | 63 | 3 |
| | 32.19 | Residential | B | 1 | 3905 SWEETEN CREEK RD | 47 | 47 | 50 | 3 |
| | 32.20 | Residential | B | 1 | 4000 SWEETEN CREEK | 58 | 58 | 61 | 3 |
| | 32.21 | Residential | B | 1 | 4002 SWEETEN CREEK RD | 58 | 58 | 61 | 3 |
| | 32.22 | Residential | B | 1 | 4004 SWEETEN CREEK RD | 58 | 58 | 61 | 3 |
| | 32.23 | Residential | B | 1 | 4001 SWEETEN CREEK RD | 47 | 47 | 50 | 3 |
| | 32.24 | Residential | B | 1 | 4003 SWEETEN CREEK RD | 50 | 50 | 53 | 3 |
| | 32.25 | Residential | B | 1 | 4006 SWEETEN CREEK RD | 58 | 58 | 62 | 4 |
| | 32.26 | Residential | B | 1 | 4008 SWEETEN CREEK RD | 60 | 60 | 64 | 4 |
| | 32.27 | Residential | B | 1 | 4007 SWEETEN CREEK RD | 54 | 54 | 57 | 3 |
| | 32.28 | Residential | B | 1 | 4010 SWEETEN CREEK RD | 62 | 62 | 65 | 3 |
| | 32.29 | Residential | B | 1 | 4010 SWEETEN CREEK RD | 63 | 63 | 66 | 3 |
| | 32.30 | Residential | B | 1 | 4007 SWEETEN CREEK RD | 57 | 57 | 60 | 3 |
| | 32.31 | Residential | B | 1 | 4103 SWEETEN CREEK RD | 60 | 60 | 62 | 2 |
| | 32.32 | Residential | B | 1 | 4100 SWEETEN CREEK RD | 65 | 65 | 69 | 4 |
| | 32.33 | Residential | B | 1 | 4102 SWEETEN CREEK RD | 67 | 67 | 71 | 4 |
| | 32.34 | Residential | B | 1 | 301 KINSALE DR | 61 | 61 | 64 | 3 |
| | 32.35 | Residential | B | 1 | 4104 SWEETEN CREEK RD | 68 | 68 | 71 | 3 |
| | 32.36 | Residential | B | 1 | 405 MARTIN LUTHER KING JR BLVD | 68 | 68 | 71 | 3 |
| | 32.37 | Residential | B | 1 | 507 SWEETEN CREEK RD | 63 | 63 | 65 | 2 |
| | 32.38 | Residential | B | 1 | 604 PERRY CREEK DR | 66 | 66 | 68 | 2 |
| | 32.39 | Residential | B | 1 | 406 SILVER CREEK TRAIL | 60 | 60 | 63 | 3 |
| | 32.40 | Residential | B | 1 | 600 PERRY CREEK DR | 64 | 64 | 67 | 3 |
| | 32.41 | Residential | B | 1 | 601 PERRY CREEK DR | 59 | 59 | 61 | 2 |
| | 32.42 | Residential | B | 1 | 600 PERRY CREEK DR | 63 | 63 | 66 | 3 |
| | 32.43 | Residential | B | 1 | 103 HAWKSBILL PL | 64 | 64 | 67 | 3 |
| | 32.44 | Residential | B | 1 | 105 HAWKSBILL PL | 63 | 63 | 66 | 3 |
| | 32.45 | Residential | B | 1 | 104 HAWKSBILL PL | 63 | 63 | 66 | 3 |
| | 32.46 | Residential | B | 1 | 102 HAWKSBILL PL | 62 | 62 | 65 | 3 |
| | 32.47 | Residential | B | 1 | 508 PERRY CREEK DR | 59 | 59 | 62 | 3 |
| | 32.48 | Residential | B | 1 | 509 PERRY CREEK DR | 57 | 57 | 60 | 3 |
| | 32.49 | Residential | B | 1 | 507 PERRY CREEK DR | 55 | 55 | 58 | 3 |
| | 32.50 | Residential | B | 1 | 506 PERRY CREEK DR | 59 | 59 | 62 | 3 |
| | 32.51 | Residential | B | 1 | 504 PERRY CREEK DR | 60 | 60 | 63 | 3 |
| NSA 33 | 33.01 | Residential | B | 1 | 4500 DRY CREEK RD | 60 | 60 | 63 | 3 |
| | 33.02 | Residential | B | 1 | 4500 DRY CREEK RD | 61 | 61 | 63 | 2 |
| NSA 34 | 34.01 | Residential | B | 1 | 415 ERWIN RD | 59 | 59 | 61 | 2 |
| | 34.02 | Residential | B | 1 | 411 ERWIN RD | 59 | 60 | 62 | 3 |
| | 34.03 | Residential | B | 1 | 415 ERWIN RD | 64 | 64 | 68 | 4 |
| NSA 35 | 35.01 | Residential | B | 1 | 390 ERWIN RD | 60 | 60 | 63 | 3 |
| NSA 36 | 36.01 | Outdoor Seating | E | 1 | 5504 DURHAM-CHAPEL HILL BLVD | 61 | 63 | 64 | 3 |
| **Predicted Design Year 2040 Traffic Noise Impacts [2]** | | | | | | N/A | N/A | 85[1,2,6] | 1[2,3] |

R/W = Impact = ≥ to NAC =

1. Total number of predicted traffic noise impacts under the 2040 Design = 83. The number of predicted impacts is not duplicated if receptors are predicted to be impacted by more than one criterion (e.g., if a receptor is impacted by NAC criteria and also by Substantial Increas criteria, it is counted as only one impact).
2. Predicted traffic noise impact due to approaching or exceeding NAC (refer to Table 4, pg 7).
3. Predicted substantial increase traffic noise impact (refer to NCDOT Traffic Noise Manual 2016).
4. Predicted NAC Category D interior noise levels are presented within the ( ).
5. The '-*' integer after the site identifier indicates the floor above the first story of the receptor (i.e. '***-2' is a second story receptor and '***-3' indicates a third story receptor). Note that some of the sites only have receptors located on the second story (i.e. sites 270 -290).
6. ER calculations were based on a decimal value, therefore, number of impacted units may not total a whole number. For the total impact count, the decimal value of the combined impacts for sites with decimal ER units were grouped for impact totals and rounded up to the neartest whole number by NSA.
7. Individual unit addresses in this NSA will be obtained during preparation of the Design Noise Report.
8. The Carraway Village development located on Eubanks Rd. is under construction and will need to be evaluated for impacts and potential noise abatement during final project design.

# APPENDIX D

NOISE LEVEL REDUCTION (NLR) TABLES

**I-3306A - I-40 Widening**

***Barrier Summary Table by NSA***

| NSA | Barrier | Length | Min | Max | Avg. Height | Total SquareFootage | Sqft/Benefit | Max Sqft/Benefit | Total Benefits | Impacted benefits | Non Impacted Benefits | Feasible | Reasonable |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3** | **NW3** | 1,470 | 25 | 25 | 25 | 36,752 | N/A | 1,500 ft² | 1 | 1 | 0 | No | N/A |
| **5** | **NW5** | 1,080 | 17 | 25 | 21 | 23,098 | N/A | 2,000 ft² | 1 | 1 | 1 | No | N/A |
| **6** | **NW6** | 2,010 | 9 | 17 | 16 | 31,829 | 1,447 | 2,000 ft² | 22 | 15 | 7 | Yes | Yes |
| **9** | **NW9** | 990 | 9 | 9 | 9 | 8,911 | 2,970 | 1,500 ft² | 3 | 2 | 1 | Yes | No |
| **10** | **NW10** | 600 | 25 | 25 | 25 | 14,997 | N/A | 1,500 ft² | 0 | 0 | 0 | No | N/A |
| **12** | **NW12** | 1,080 | 25 | 25 | 25 | 26,999 | N/A | 1,500 ft² | 0 | 0 | 0 | No | N/A |
| **13** | **NW13** | 1,094 | 9 | 9 | 9 | 9,847 | 615 | 1,500 ft² | 16 | 9 | 7 | Yes | Yes |
| **14** | **NW14** | 1,440 | 13 | 19 | 16 | 22,499 | N/A | 1,500 ft² | 1 | 1 | 1 | No | N/A |
| **17** | **NW17** | 1,050 | 9 | 17 | 16 | 16,291 | 8,146 | 1,500 ft² | 2 | 2 | 0 | Yes | No |
| **20** | **NW20** | 1,620 | 11 | 13 | 13 | 20,880 | 4,176 | 1,500 ft² | 5 | 4 | 1 | Yes | No |
| **22A** | **NW22A** | 1,110 | 9 | 13 | 12 | 13,170 | 6,585 | 1,500 ft² | 2 | 2 | 0 | Yes | No |
| **22B** | **NW22B** | 360 | 8 | 11 | 10 | 3,510 | 1,755 | 2,000 ft² | 3 | 2 | 0 | Yes | Yes |
| **24** | **NW24a** | 1,363 | 20 | 20 | 20 | 27,251 | N/A | 1,500 ft² | 7 | 1 | 6 | No | N/A |
| **24** | **NW24b** | 861 | 14 | 16 | 14 | 12,453 | 2,491 | 1,500 ft² | 5 | 3 | 2 | Yes | No |
| **26** | **NW26** | 1,650 | 9 | 13 | 13 | 21,210 | 5,303 | 2,000 ft² | 4 | 2 | 2 | Yes | No |
| **32** | **NW32** | 2,940 | 8 | 16 | 12 | 37,480 | 1,499 | 1,500 ft² | 25 | 14 | 11 | Yes | Yes |

## -NW3- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 2 | Benefited Receptors @ ≥ 7 dB(A) NLR: 0 |
| Impacted Receptors Benefited: 1 | Total Benefits: 1 |
| Non-Impacted Receptors Benefited: 0 | |

## -NW3- Parameters

Figures 1-2

| | |
|---|---|
| Length: 1,470 ft | Area / Benefit: **N/A** ft² |
| Average Height: 25 ft | Allowable Area / Benefit: 1,500 ft² |
| Area: 36,752 ft² | Preliminary Recommendation: **Not Feasible** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 3.01 | 3 | Residential | B | 1 | 1229 DIMMOCKS MILL RD | 67 | 63 | 4 |
| 3.02 | 3 | Residenitial | B | 1 | 1414 DIMMOCKS MILL RD | 70 | 65 | 5 |
| | | | | | **-NW3- Predicted Build Condition With-Wall Benefits[1]** | | | **1** |

Impact = 5 to 6 dB(A) NLR = >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW5- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 1 | Benefited Receptors @ ≥ 7 dB(A) NLR: 1 |
| Impacted Receptors Benefited: 1 | Total Benefits: 1 |
| Non-Impacted Receptors Benefited: 1 | |

## -NW5- Parameters

Figures 2-3

| | |
|---|---|
| Length: 1,080 ft | Area / Benefit: **N/A** ft² |
| Average Height: 21 ft | Allowable Area / Benefit: 2,000 ft² |
| Area: 23,098 ft² | Preliminary Recommendation: **Not Feasible** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 5.01 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 59 | 1 |
| 5.02 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 60 | 0 |
| 5.03 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 62 | 62 | 0 |
| 5.04 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 60 | 1 |
| 5.05 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 60 | 1 |
| 5.06 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 59 | 1 |
| 5.07 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 58 | 2 |
| 5.08 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 59 | 2 |
| 5.09 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 59 | 2 |
| 5.10 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 58 | 3 |
| 5.11 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 59 | 2 |
| 5.12 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 58 | 1 |
| 5.13 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 58 | 2 |
| 5.14 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 58 | 3 |
| 5.15 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 58 | 2 |
| 5.16 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 57 | 4 |
| 5.17 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 62 | 58 | 4 |
| 5.18 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 64 | 59 | 5* |
| 5.19 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 65 | 59 | 6* |
| 5.20 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 63 | 58 | 5* |
| 5.21 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 57 | 4 |
| 5.22 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 56 | 5* |
| 5.23 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 63 | 57 | 6* |
| 5.24 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 64 | 58 | 6* |
| 5.25 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 66* | 59 | 7* |
| 5.26 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 67* | 58 | 9* |
| 5.27 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 66* | 58 | 8* |
| 5.28 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 64 | 57 | 7* |
| 5.29 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 62 | 56 | 6* |
| 5.30 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 62 | 57 | 5* |
| 5.31 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 56 | 4 |
| 5.32 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 56 | 3 |
| 5.33 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 56 | 5* |
| 5.34 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 62 | 57 | 5* |
| 5.35 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 63 | 57 | 6* |
| 5.36 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 57 | 4 |
| 5.37 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 56 | 3 |
| 5.38 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 55 | 3 |
| 5.39 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 55 | 3 |
| 5.40 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 59 | 56 | 3 |
| 5.41 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 58 | 3 |
| 5.42 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 63 | 58 | 5* |
| 5.43 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 64 | 61 | 3 |
| 5.44 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 60 | 58 | 2 |
| 5.45 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 57 | 1 |
| 5.46 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 58 | 57 | 1 |
| 5.47 | 5 | Athletic Field | C | 0.02 | 1125 NEW GRADY BROWN SCHOOL RD | 61 | 59 | 2 |
| 5.48 | 5 | School | D | 1 | 1125 NEW GRADY BROWN SCHOOL RD | 60(35)[4] | 60(35)[4] | 0 |
| | | | | | | | **-NW5- Predicted Build Condition With-Wall Benefits[1]** | **1** |

*Due to low decimal values, totals were rounded up to the nearest whole number

Impact = | 5 to 6 dB(A) NLR = | >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

| -NW6- Acoustical Performance Summary | |
|---|---|
| Impacts: 19 | Benefited Receptors @ > 7 dB(A) NLR: 17 |
| Impacted Receptors Benefited: 15 | Total Benefits: 22 |
| Non-Impacted Receptors Benefited: 7 | |

| -NW6- Parameters | |
|---|---|
| Figures 2-3 | |
| | |
| Length: 2,010 ft | Area / Benefit: **1,447** ft² |
| Average Height: 16 ft | Allowable Area / Benefit: 2,000 ft² |
| Area: 31,829 ft² | Preliminary Recommendation: **Feasible and Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 6.01 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 72 | 72 | 0 |
| 6.02 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 66 | 66 | 0 |
| 6.03 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 65 | 65 | 0 |
| 6.04 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 64 | 64 | 0 |
| 6.05 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 65 | 65 | 0 |
| 6.06 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 64 | 64 | 0 |
| 6.07 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 66 | 66 | 0 |
| 6.08 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 62 | 0 |
| 6.09 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 66 | 64 | 2 |
| 6.10 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 65 | 7 |
| 6.11 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 64 | 8 |
| 6.12 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 63 | 62 | 1 |
| 6.13 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 62 | 0 |
| 6.14 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 64 | 64 | 0 |
| 6.15 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 64 | 64 | 0 |
| 6.16 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 63 | 63 | 0 |
| 6.17 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 63 | 63 | 0 |
| 6.18 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 62 | 0 |
| 6.19 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 63 | 9 |
| 6.20 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 62 | 10 |
| 6.21 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 61 | 11 |
| 6.22 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 63 | 62 | 1 |
| 6.23 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 63 | 63 | 0 |
| 6.24 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 61 | 61 | 0 |
| 6.25 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 62 | 0 |
| 6.26 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 63 | 63 | 0 |
| 6.27 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 59 | 13 |
| 6.28 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 58 | 14 |
| 6.29 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 62 | 0 |
| 6.30 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 61 | 61 | 0 |
| 6.31 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 61 | 61 | 0 |
| 6.32 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 60 | 60 | 0 |
| 6.33 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 54 | 54 | 0 |
| 6.34 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 58 | 58 | 0 |
| 6.35 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 56 | 56 | 0 |
| 6.36 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 55 | 55 | 0 |
| 6.37 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 59 | 59 | 0 |
| 6.38 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 58 | 58 | 0 |
| 6.39 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 60 | 2 |
| 6.40 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 58 | 14 |
| 6.41 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 59 | 13 |
| 6.42 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 72 | 58 | 14 |
| 6.43 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 63 | 60 | 3 |
| 6.44 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 57 | 55 | 2 |
| 6.45 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 57 | 57 | 0 |
| 6.46 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 57 | 57 | 0 |
| 6.47 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 56 | 56 | 0 |
| 6.48 | 6 | Residential | B | 1 | 1039 TIMBER ST (Hillsborough Mobile Home Park) | 57 | 56 | 1 |
| 6.49 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 57 | 57 | 0 |
| 6.50 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 69 | 57 | 12 |
| 6.51 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 70 | 58 | 12 |
| 6.52 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 68 | 58 | 10 |
| 6.53 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 65 | 55 | 10 |
| 6.54 | 6 | Residential | B | 1 | PRICE ST (Hillsborough Mobile Home Park) | 62 | 55 | 7 |
| 6.55 | 6 | Residential | B | 1 | 998 TIMBERS DR (Hillsborough Mobile Home Park) | 61 | 55 | 6 |
| 6.56 | 6 | Residential | B | 1 | BINFORD ST (Hillsborough Mobile Home Park) | 60 | 55 | 5 |
| 6.57 | 6 | Residential | B | 1 | BINFORD ST (Hillsborough Mobile Home Park) | 59 | 54 | 5 |
| 6.58 | 6 | Residential | B | 1 | BINFORD ST (Hillsborough Mobile Home Park) | 58 | 53 | 5 |
| 6.59 | 6 | Residential | B | 1 | BINFORD ST | 59 | 57 | 2 |
| 6.60 | 6 | Residential | B | 1 | 1001 TIMBER ST | 58 | 54 | 4 |
| 6.61 | 6 | Residential | B | 1 | 998 TIMBERS DR | 64 | 57 | 7 |
| 6.62 | 6 | Residential | B | 1 | 2398 HEDGEPATH DR | 69 | 59 | 10 |
| 6.63 | 6 | Residential | B | 1 | 223 ROMERO GROVE LN | 55 | 54 | 1 |
| 6.64 | 6 | Residential | B | 1 | 901 TIMBER ST | 61 | 61 | 0 |
| 6.65 | 6 | Residential | B | 1 | 2317 ORANGE GROVE RD | 65 | 64 | 1 |
| 6.66 | 6 | Residential | B | 1 | 2323 ORANGE GROVE RD | 72 | 67 | 5 |
| | | | | | | | **-NW6- Predicted Build Condition With-Wall Benefits**[1] | **22** |

*Allowable Area Per Benefitted Receptor increased by 500 ft² from the base allowable quantity of 1,500 ft² due to an average increase over NAC of 5 dB(A) for impacted receptors (refer to table 11.1 Allowable Noise Abatement Base Quantities, NCDOT Highway Traffic Noise Manual 2016)*

| Impact = | | 5 to 6 dB(A) NLR = | | >=7 dB(A) NLR = | |
|---|---|---|---|---|---|

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW9- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 2 | Benefited Receptors @ ≥ 7 dB(A) NLR: 1 |
| Impacted Receptors Benefited: 2 | Total Benefits: 3 |
| Non-Impacted Receptors Benefited: 1 | |

## -NW9- Parameters

Figure 4

| | |
|---|---|
| Length: 990 ft | Area / Benefit: **2,970** ft² |
| Average Height: 9 ft | Allowable Area / Benefit: 1,500 ft² |
| Area: 8,911 ft² | Preliminary Recommendation: **Feasible Not Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 9.01 | 9 | Residential | B | 1 | 832 OAKDALE DR | 60 | 59 | 1 |
| 9.02 | 9 | Residential | B | 1 | 836 OAKDALE DR | 71 | 63 | 8 |
| 9.03 | 9 | Residential | B | 1 | 826 OAKDALE DR | 65 | 60 | 5 |
| 9.04 | 9 | Residential | B | 1 | 820 OAKDALE DR | 53 | 53 | 0 |
| 9.05 | 9 | Residential | B | 1 | 814 OAKDALE DR | 57 | 56 | 1 |
| 9.06 | 9 | Residential | B | 1 | 909 BOX 38 OAKDALE DR | 51 | 51 | 0 |
| 9.07 | 9 | Residential | B | 1 | 2321 BLAIR DR | 52 | 53 | -1 |
| 9.08 | 9 | Residential | B | 1 | 2327 BLAIR DR | 56 | 55 | 1 |
| 9.09 | 9 | Residential | B | 1 | 2331 BLAIR DR | 61 | 59 | 2 |
| 9.10 | 9 | Residential | B | 1 | 2335 BLAIR DR | 66 | 61 | 5 |
| 9.11 | 9 | Residential | B | 1 | 2318 BLAIR DR | 48 | 48 | 0 |
| 9.12 | 9 | Residential | B | 1 | 2338 BLAIR DR | 54 | 53 | 1 |
| 9.13 | 9 | Residential | B | 1 | 2338 BLAIR DR | 60 | 60 | 0 |
| | | | | | **-NW9- Predicted Build Condition With-Wall Benefits**[1] | | | **3** |

Impact = | 5 to 6 dB(A) NLR = | >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW10- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 2 | Benefited Receptors @ ≥ 7 dB(A) NLR: 0 |
| Impacted Receptors Benefited: 0 | Total Benefits: 0 |
| Non-Impacted Receptors Benefited: 0 | |

## -NW10- Parameters

Figures 6-7

| | |
|---|---|
| Length: 600 ft | Area / Benefit: **N/A** ft$^2$ |
| Average Height: 25 ft | Allowable Area / Benefit: 1,500 ft$^2$ |
| Area: 14,997 ft$^2$ | Preliminary Recommendation: **Not Feasible** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 10.01 | 10 | Residential | B | 1 | 3209 OLD CH HILLSBOROUGH RD | 68 | 67 | 1 |
| 10.02 | 10 | Residential | B | 1 | 3303 OLD NC 86 S | 65 | 65 | 0 |
| 10.03 | 10 | Residential | B | 1 | 3315 OLD NC 86 | 66 | 66 | 0 |
| 10.04 | 10 | Residential | B | 1 | 3319 OLD NC HWY 86 | 62 | 62 | 0 |
| 10.05 | 10 | Residential | B | 1 | 3401 OLD NC 86 | 63 | 63 | 0 |
| | | | | | **-NW10- Predicted Build Condition With-Wall Benefits** [1] | | | **0** |

Impact = 5 to 6 dB(A) NLR = >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW12- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 3 | Benefited Receptors @ ≥ 7 dB(A) NLR: 0 |
| Impacted Receptors Benefited: 0 | Total Benefits: 0 |
| Non-Impacted Receptors Benefited: 0 | |

## -NW12- Parameters

Figures 6-7

| | |
|---|---|
| Length: 1,080 ft | Area / Benefit: **N/A** ft$^2$ |
| Average Height: 25 ft | Allowable Area / Benefit: 1,500 ft$^2$ |
| Area: 26,999 ft$^2$ | Preliminary Recommendation: **Not Feasible** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 12.01 | 12 | Residential | B | 1 | 3209 OLD CH HILLSBOROUGH RD | 67 | 64 | 3 |
| 12.02 | 12 | Residential | B | 1 | 3303 OLD NC 86 S | 64 | 64 | 0 |
| 12.03 | 12 | Residential | B | 1 | 3315 OLD NC 86 | 61 | 61 | 0 |
| 12.04 | 12 | Residential | B | 1 | 3319 OLD NC HWY 86 | 67 | 66 | 1 |
| 12.05 | 12 | Residential | B | 1 | 3401 OLD NC 86 | 67 | 65 | 2 |
| | | | | | **-NW12- Predicted Build Condition With-Wall Benefits**[1] | | | **0** |

Impact = 5 to 6 dB(A) NLR = >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW13- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 9 | Benefited Receptors @ ≥ 7 dB(A) NLR: 5 |
| Impacted Receptors Benefited: 9 | Total Benefits: 16 |
| Non-Impacted Receptors Benefited: 7 | |

## -NW13- Parameters

Figures 6-8

| | |
|---|---|
| Length: 1,094 ft | Area / Benefit: **615** ft² |
| Average Height: 9 ft | Allowable Area / Benefit: 1,500 ft² |
| Area: 9,847 ft² | Preliminary Recommendation: **Feasible and Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 13.01 | 13 | Medical Center | D | 1 | 460 WATERSTONE DRIVE | 64(39)[4] | 63(38)[4] | 1 |
| 13.02 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 67 | 62 | 5 |
| 13.03 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 68 | 61 | 7 |
| 13.04 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 69 | 62 | 7 |
| 13.05 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 69 | 62 | 7 |
| 13.06 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 65 | 60 | 5 |
| 13.07 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 65 | 60 | 5 |
| 13.08 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 65 | 60 | 5 |
| 13.09 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 63 | 59 | 4 |
| 13.10 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 62 | 58 | 4 |
| 13.11 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 61 | 57 | 4 |
| 13.12 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 67 | 61 | 6 |
| 13.13 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 67 | 60 | 7 |
| 13.14 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 67 | 60 | 7 |
| 13.15 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 66 | 60 | 6 |
| 13.16 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 66 | 60 | 6 |
| 13.17 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 65 | 59 | 6 |
| 13.18 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 64 | 59 | 5 |
| 13.19 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 64 | 59 | 5 |
| 13.20 | 13 | Residential | B | 1 | 3370 ALICE LOOP (Mobile Home Park) | 63 | 58 | 5 |
| | | | | | | | **-NW13- Predicted Build Condition With-Wall Benefits**[1] | **16** |

Impact = 5 to 6 dB(A) NLR = >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

| -NW14- Acoustical Performance Summary | |
|---|---|
| Impacts: 1 | Benefited Receptors @ ≥ 7 dB(A) NLR: 1 |
| Impacted Receptors Benefited: 1 | Total Benefits: 1 |
| Non-Impacted Receptors Benefited: 1 | |

| -NW14- Parameters | |
|---|---|
| Figure 9 | |
| Length: 1,440 ft | Area / Benefit: **N/A** ft² |
| Average Height: 16 ft | Allowable Area / Benefit: 1,500 ft² |
| Area: 22,499 ft² | Preliminary Recommendation: **Not Feasible** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 14.04 | 14 | Trail | C | 0.01 | 4215 NC86 | 62 | 58 | 4 |
| 14.05 | 14 | Trail | C | 0.01 | 4215 NC86 | 63 | 59 | 4 |
| 14.06 | 14 | Trail | C | 0.01 | 4215 NC86 | 63 | 58 | 5* |
| 14.07 | 14 | Trail | C | 0.01 | 4215 NC86 | 64 | 58 | 6* |
| 14.08 | 14 | Trail | C | 0.01 | 4215 NC86 | 64 | 58 | 6* |
| 14.09 | 14 | Trail | C | 0.01 | 4215 NC86 | 65 | 59 | 6* |
| 14.10 | 14 | Trail | C | 0.01 | 4215 NC86 | 66* | 59 | 7* |
| 14.11 | 14 | Trail | C | 0.01 | 4215 NC86 | 66* | 60 | 6* |
| 14.12 | 14 | Trail | C | 0.01 | 4215 NC86 | 64 | 59 | 5* |
| 14.13 | 14 | Trail | C | 0.01 | 4215 NC86 | 62 | 57 | 5* |
| 14.14 | 14 | Trail | C | 0.01 | 4215 NC86 | 61 | 57 | 4 |
| 14.15 | 14 | Trail | C | 0.01 | 4215 NC86 | 60 | 57 | 3 |
| | | | | | **-NW14- Predicted Build Condition With-Wall Benefits**[1] | | | **1** |

*Due to low decimal values, totals were rounded up to the neartest whole number.

Impact = | 5 to 6 dB(A) NLR = | >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW17- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 3 | Benefited Receptors @ ≥ 7 dB(A) NLR: 1 |
| Impacted Receptors Benefited: 2 | Total Benefits: 2 |
| Non-Impacted Receptors Benefited: 0 | |

## -NW17- Parameters

Figures 11-12

| | |
|---|---|
| Length: 1,050 ft | Area / Benefit: **8,146** ft² |
| Average Height: 16 ft | Allowable Area / Benefit: 1,500 ft² |
| Area: 16,291 ft² | Preliminary Recommendation: **Feasible Not Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 17.05 | 17 | Residential | B | 1 | 5317 HIDEAWAY DR | 59 | 58 | 1 |
| 17.06 | 17 | Residential | B | 1 | 5321 HIDEAWAY DR | 61 | 59 | 2 |
| 17.07 | 17 | Residential | B | 1 | 302 MEADOW LN | 62 | 60 | 2 |
| 17.08 | 17 | Residential | B | 1 | 5401 HIDEWAY DR | 62 | 59 | 3 |
| 17.09 | 17 | Residential | B | 1 | 6025 MEADOW GREER RD | 66 | 61 | 5 |
| 17.10 | 17 | Residential | B | 1 | 6027 MEADOW GREER RD | 70 | 63 | 7 |
| 17.11 | 17 | Residential | B | 1 | 6019 MEADOW GREER RD | 59 | 58 | 1 |
| 17.12 | 17 | Residential | B | 1 | 6022 MEADOW GREER RD | 67 | 65 | 2 |
| 17.13 | 17 | Residential | B | 1 | 6018 MEADOW GREER RD | 63 | 63 | 0 |
| 17.14 | 17 | Residential | B | 1 | 6014 MEADOW GREER RD | 62 | 62 | 0 |
| 17.15 | 17 | Residential | B | 1 | 5623 HIDEAWAY DR | 55 | 55 | 0 |
| | | | | | **-NW17- Predicted Build Condition With-Wall Benefits**[1] | | | **2** |

Impact = 5 to 6 dB(A) NLR = >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW20- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 4 | Benefited Receptors @ ≥ 7 dB(A) NLR: 1 |
| Impacted Receptors Benefited: 4 | Total Benefits: 5 |
| Non-Impacted Receptors Benefited: 1 | |

## -NW20- Parameters

Figures 13-14

| | |
|---|---|
| Length: 1,620 ft | Area / Benefit: **4,176** ft² |
| Average Height: 13 ft | Allowable Area / Benefit: 1,500 ft² |
| Area: 20,880 ft² | Preliminary Recommendation: **Feasible Not Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 20.01 | 20 | Residential | B | 1 | 1924 MT SINAI RD | 66 | 60 | 6 |
| 20.02 | 20 | Residential | B | 1 | 1924 MT SINAI RD | 66 | 60 | 6 |
| 20.03 | 20 | Residential | B | 1 | 6421 NC 86 N | 66 | 60 | 6 |
| 20.04 | 20 | Residential | B | 1 | 6421 NC 86 N | 64 | 59 | 5 |
| 20.05 | 20 | Residential | B | 1 | 6421 NC 86 N | 68 | 61 | 7 |
| | | | | | **-NW20- Predicted Build Condition With-Wall Benefits**[1] | | | **5** |

Impact = 5 to 6 dB(A) NLR = >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

| -NW22a- Acoustical Performance Summary | |
|---|---|
| Impacts: 2 | Benefited Receptors @ ≥ 7 dB(A) NLR: 1 |
| Impacted Receptors Benefited: 2 | Total Benefits: 2 |
| Non-Impacted Receptors Benefited: 0 | |

**-NW22a- Parameters**

Figures 14

| | |
|---|---|
| Length: 1,110 ft | Area / Benefit: **6,585** ft² |
| Average Height: 12 ft | Allowable Area / Benefit: 1,500 ft² |
| Area 13,170 ft² | Preliminary Recommendation: **Feasible Not Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 22a.01 | 22a | Residential | B | 1 | 2107 CLYDE RD | 70 | 63 | 7 |
| 22a.02 | 22a | Residential | B | 1 | 2107 CLYDE RD | 69 | 64 | 5 |
| 22a.03 | 22a | Residential | B | 1 | 2107 CLYDE RD | 62 | 60 | 2 |
| | | | | | **-NW22a- Predicted Build Condition With-Wall Benefits**[1] | | | **2** |

Impact = 5 to 6 dB(A) NLR = >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW22b- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 3 | Benefited Receptors @ > 7 dB(A) NLR: 1 |
| Impacted Receptors Benefited: 2 | Total Benefits: 2 |
| Non-Impacted Receptors Benefited: 0 | |

## -NW22b- Parameters

Figures 16

| | |
|---|---|
| Combined Length: 360 ft | Area / Benefit: **1,755** ft² |
| Combined Average Height: 10 ft | Allowable Area / Benefit: 2,000 ft² |
| Combined Area: 3,510 ft² | Preliminary Recommendation: **Feasible and Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 22b.01 | 22b | Residential | B | 1 | 300 OLD MOZE TRAIL | 61 | 60 | 1 |
| 22b.02 | 22b | Residential | B | 1 | 300 OLD MOZE TRAIL | 67 | 62 | 5 |
| 22b.03 | 22b | Residential | B | 1 | 300 OLD MOZE TRAIL | 66 | 59 | 7 |
| 22b.04 | 22b | Residential | B | 1 | 300 OLD MOZE TRAIL | 60 | 59 | 1 |
| 22b.05 | 22b | Residential | B | 1 | 300 OLD MOZE TRAIL | 59 | 58 | 1 |
| 22b.06 | 22b | Residential | B | 1 | 5 HURRICANE ALLEY | 58 | 58 | 0 |
| 22b.07 | 22b | Residential | B | 1 | 5 HURRICANE ALLEY | 58 | 58 | 0 |
| 22b.08 | 22b | Residential | B | 1 | 5 HURRICANE ALLEY | 58 | 58 | 0 |
| 22b.09 | 22b | Residential | B | 1 | 512 HURRICANE ALLEY | 58 | 58 | 0 |
| 22b.10 | 22b | Residential | B | 1 | 512 HURRICANE ALLEY | 58 | 58 | 0 |
| 22b.11 | 22b | Residential | B | 1 | 512 HURRICANE ALLEY | 58 | 58 | 0 |
| 22b.12 | 22b | Residential | B | 1 | 512 HURRICANE ALLEY | 59 | 59 | 0 |
| 22b.13 | 22b | Residential | B | 1 | 512 HURRICANE ALLEY | 59 | 59 | 0 |
| 22b.14 | 22b | Residential | B | 1 | 512 HURRICANE ALLEY | 59 | 59 | 0 |
| 22b.15 | 22b | Residential | B | 1 | 512 HURRICANE ALLEY | 60 | 60 | 0 |
| 22b.16 | 22b | Residential | B | 1 | MARY KATHRYN LN | 59 | 59 | 0 |
| 22b.17 | 22b | Residential | B | 1 | MARY KATHRYN LN | 58 | 58 | 0 |
| 22b.18 | 22b | Residential | B | 1 | MARY KATHRYN LN | 58 | 58 | 0 |
| 22b.19 | 22b | Residential | B | 1 | MARY KATHRYN LN | 58 | 58 | 0 |
| 22b.20 | 22b | Residential | B | 1 | MARY KATHRYN LN | 59 | 58 | 1 |
| 22b.21 | 22b | Residential | B | 1 | MARY KATHRYN LN | 59 | 59 | 0 |
| 22b.22 | 22b | Residential | B | 1 | MARY KATHRYN LN | 59 | 59 | 0 |
| 22b.23 | 22b | Residential | B | 1 | MARY KATHRYN LN | 59 | 59 | 0 |
| 22b.24 | 22b | Residential | B | 1 | MARY KATHRYN LN | 59 | 60 | -1 |
| 22b.25 | 22b | Residential | B | 1 | MARY KATHRYN LN | 60 | 60 | 0 |
| 22b.26 | 22b | Residential | B | 1 | MARY KATHRYN LN | 61 | 61 | 0 |
| 22b.27 | 22b | Residential | B | 1 | MARY KATHRYN LN | 62 | 62 | 0 |
| 22b.28 | 22b | Residential | B | 1 | MARY KATHRYN LN | 64 | 64 | 0 |
| 22b.29 | 22b | Residential | B | 1 | MARY KATHRYN LN | 72 | 72 | 0 |
| | | | | | **-NW22b- Predicted Build Condition With-Wall Benefits[1]** | | | **2** |

*Allowable Area Per Benefitted Receptor increased by 500 ft² from the base allowable quantity of 1,500 ft² due to an average increase over existing of 8 dB(A) for impacted receptors (refer to table 11.1 Allowable Noise Abatement Base Quantities, NCDOT Highway Traffic Noise Manual 2016)*

Impact = | 5 to 6 dB(A) NLR = | >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

| NW24a Acoustical Performance Summary | |
|---|---|
| Impacts: 5 | Benefited Receptors @≥ 7 dB(A) NLR: 4 |
| Impacted Receptors Benefited: 1 | Total Benefits: 7 |
| Non-Impacted Receptors Benefited: 6 | |

| NW24a Parameters | |
|---|---|
| Figure 17 | |
| Length: 1,363 ft | Area / Benefit: **N/A** ft$^2$ |
| Average Height: 20 ft | Allowable Area / Benefit: 1,500 ft$^2$ |
| Area: 27,251 ft$^2$ | Preliminary Recommendation: **Not Feasible** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 24.01 | 24 | Residential | B | 1 | 103 BAYWOOD PL | 66 | 62 | 4 |
| 24.02 | 24 | Residential | B | 1 | 106 BAYWOOD PL | 65 | 57 | 8 |
| 24.03 | 24 | Residential | B | 1 | 101 BAYWOOD PLACE | 59 | 55 | 4 |
| 24.04 | 24 | Residential | B | 1 | 105 GROOMSBRIDGE CT | 59 | 54 | 5 |
| 24.05 | 24 | Residential | B | 1 | 104 GROOMSBRIDGE CT | 63 | 55 | 8 |
| 24.06 | 24 | Residential | B | 1 | 103 GROOMSBRIDGE CT | 66 | 56 | 10 |
| 24.07 | 24 | Residential | B | 1 | 102 GROOMSBRIDGE CT | 64 | 56 | 8 |
| 24.08 | 24 | Residential | B | 1 | 101 GROOMSBRIDGE CT | 62 | 56 | 6 |
| 24.09 | 24 | Residential | B | 1 | 106 GROOMSBRIDGE CT | 58 | 55 | 3 |
| 24.10 | 24 | Residential | B | 1 | 202 NORTHWOOD DR | 54 | 52 | 2 |
| 24.11 | 24 | Residential | B | 1 | 101 HUNTER HILL RD | 55 | 53 | 2 |
| 24.12 | 24 | Residential | B | 1 | 115 NORTHWOOD DR | 57 | 55 | 2 |
| 24.13 | 24 | Residential | B | 1 | 102 WALDEN PL | 55 | 54 | 1 |
| 24.14 | 24 | Residential | B | 1 | 113 NORTHWOOD DR | 56 | 55 | 1 |
| 24.15 | 24 | Residential | B | 1 | 116 NORTHWOOD DR | 59 | 55 | 4 |
| 24.16 | 24 | Residential | B | 1 | 114 NORTHWOOD DR | 61 | 56 | 5 |
| 24.17 | 24 | Residential | B | 1 | 111 NORTHWOOD DR | 57 | 56 | 1 |
| 24.18 | 24 | Cemetary Seating | C | 1 | 7707 NC 86 | 68 | 65 | 3 |
| 24.19 | 24 | Church | D | 1 | 7708 NC 86 | 70(45)[4] | 69(44)[4] | 1 |
| 24.20 | 24 | Residential | B | 1 | 110 NORTHWOOD DR | 64 | 64 | 0 |
| 24.21 | 24 | Residential | B | 1 | 108 NORTHWOOD DR | 66 | 65 | 1 |
| 24.33 | 24 | Residential | B | 1 | 112 NORTHWOOD DR | 61 | 57 | 4 |
| 24.37 | 24 | Residential | B | 1 | 105 HUNTER HILL RD | 51 | 50 | 1 |
| 24.38 | 24 | Residential | B | 1 | 106 AUTUMN LN | 53 | 52 | 1 |
| 24.41 | 24 | Outdoor Seating | C | 1 | 7708 NC 86 | 70 | 68 | 2 |
| | | | | | **-NW24- Predicted Build Condition With-Wall Benefits**[1] | | | **7** |

| Impact = | | 5 to 6 dB(A) | | >=7 dB(A) NLR = | | |
|---|---|---|---|---|---|---|

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

| NW24b Acoustical Performance Summary | |
|---|---|
| Impacts: 4 | Benefited Receptors @≥ 7 dB(A) NLR: 1 |
| Impacted Receptors Benefited: 3 | Total Benefits: 5 |
| Non-Impacted Receptors Benefited: 0 | |

| NW24b Parameters | |
|---|---|
| Figure 17 | |
| Length: 861 ft | Area / Benefit: **2,491 ft$^2$** |
| Average Height: 14.46 ft | Allowable Area / Benefit: 1,500 ft$^2$ |
| Area: 12,453 ft$^2$ | Preliminary Recommendation: **Feasible Not Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 24.11 | 24 | Residential | B | 1 | 101 HUNTER HILL RD | 55 | 55 | 0 |
| 24.12 | 24 | Residential | B | 1 | 115 NORTHWOOD DR | 57 | 57 | 0 |
| 24.13 | 24 | Residential | B | 1 | 102 WALDEN PL | 55 | 54 | 1 |
| 24.14 | 24 | Residential | B | 1 | 113 NORTHWOOD DR | 56 | 56 | 0 |
| 24.17 | 24 | Residential | B | 1 | 111 NORTHWOOD DR | 57 | 56 | 1 |
| 24.20 | 24 | Residential | B | 1 | 110 NORTHWOOD DR | 64 | 62 | 2 |
| 24.21 | 24 | Residential | B | 1 | 108 NORTHWOOD DR | 66 | 61 | 5 |
| 24.22 | 24 | Residential | B | 1 | 104 AUTUMN LN | 53 | 52 | 1 |
| 24.23 | 24 | Residential | B | 1 | 105 AUTUMN LN | 48 | 47 | 1 |
| 24.24 | 24 | Residential | B | 1 | 103 AUTUMN LN | 50 | 48 | 2 |
| 24.25 | 24 | Residential | B | 1 | 101 AUTUMN LN | 52 | 50 | 2 |
| 24.26 | 24 | Residential | B | 1 | 105 NORTHWOOD DR | 58 | 53 | 5 |
| 24.27 | 24 | Residential | B | 1 | 104 NORTHWOOD DR | 65 | 59 | 6 |
| 24.28 | 24 | Residential | B | 1 | 102 NORTHWOOD DR | 66 | 59 | 7 |
| 24.29 | 24 | Residential | B | 1 | 100 NORTHWOOD DR | 66 | 60 | 6 |
| 24.30 | 24 | Residential | B | 1 | 102 IVY CT | 59 | 56 | 3 |
| 24.31 | 24 | Residential | B | 1 | 103 NORTHWOOD DR | 65 | 63 | 2 |
| 24.32 | 24 | Residential | B | 1 | 100 IVY CT | 57 | 55 | 2 |
| 24.34 | 24 | Residential | B | 1 | 100 AUTUMN LN | 58 | 55 | 3 |
| 24.35 | 24 | Residential | B | 1 | 102 AUTUMN LN | 55 | 54 | 1 |
| 24.36 | 24 | Residential | B | 1 | 101 WALDEN PL | 55 | 54 | 1 |
| 24.37 | 24 | Residential | B | 1 | 105 HUNTER HILL RD | 51 | 49 | 2 |
| 24.38 | 24 | Residential | B | 1 | 106 AUTUMN LN | 53 | 53 | 0 |
| 24.39 | 24 | Residential | B | 1 | 101 IVY CT | 52 | 50 | 2 |
| 24.40 | 24 | Residential | B | 1 | 101 NORTHWOOD DR | 67 | 67 | 0 |
| | | | | | **-NW24- Predicted Build Condition With-Wall Benefits**[1] | | | **5** |

| Impact = | | 5 to 6 dB(A) | | >=7 dB(A) NLR = | |
|---|---|---|---|---|---|

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW26- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 2 | Benefited Receptors @ ≥ 7 dB(A) NLR: 1 |
| Impacted Receptors Benefited: 2 | Total Benefits: 4 |
| Non-Impacted Receptors Benefited: 2 | |

## -NW26- Parameters

Figures 17-19

| | |
|---|---|
| Length: 1,650 ft | Area / Benefit: **5,303** ft² |
| Average Height: 13 ft | Allowable Area / Benefit: 2,000 ft² |
| Area: 21,210 ft² | Preliminary Recommendation: **Feasible Not Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 26.01 | 26 | Residential | B | 1 | 2623 WHITFIELD RD | 62 | 61 | 1 |
| 26.02 | 26 | Residential | B | 1 | 2719 WHITFIELD RD | 69 | 64 | 5 |
| 26.03 | 26 | Residential | B | 1 | 2719 WHITFIELD RD | 60 | 57 | 3 |
| 26.04 | 26 | Residential | B | 1 | 2719 WHITFIELD RD | 64 | 59 | 5 |
| 26.05 | 26 | Residential | B | 1 | 113 FOXRIDGE RD | 63 | 57 | 6 |
| 26.06 | 26 | Residential | B | 1 | 111 FOXRIDGE RD | 72 | 65 | 7 |
| | | | | | **-NW26- Predicted Build Condition With-Wall Benefits**[1] | | | **4** |

*Allowable Area Per Benefitted Receptor increased by 500 ft² from the base allowable quantity of 1,500 ft² due to an average increase over NAC of 5 dB(A) for impacted receptors (refer to table 11.1 Allowable Noise Abatement Base Quantities, NCDOT Highway Traffic Noise Manual 2016)*

Impact = 5 to 6 dB(A) NLR = >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

## -NW32- Acoustical Performance Summary

| | |
|---|---|
| Impacts: 15 | Benefited Receptors @ ≥ 7 dB(A) NLR: 11 |
| Impacted Receptors Benefited: 14 | Total Benefits: 25 |
| Non-Impacted Receptors Benefited: 11 | |

## -NW32- Parameters

Figures 21-22

| | |
|---|---|
| Combined Length: 2,940 ft | Area / Benefit: **1,499** ft² |
| Combined Average Height: 13 ft | Allowable Area / Benefit: 1,500 ft² |
| Combined Area: 37,480 ft² | Preliminary Recommendation: **Feasible and Reasonable** |

| Receptors | | | | | | Noise Wall Performance | | |
|---|---|---|---|---|---|---|---|---|
| **Rec. No.** | **NSA** | **Use** | **NAC** | **E.R.s** | **Address** | **Build** | **With Wall** | **NLR** |
| 32.01 | 32 | Residential | B | 1 | 103 YUKON LN | 56 | 55 | 1 |
| 32.02 | 32 | Residential | B | 1 | 107 YUKON LN | 63 | 61 | 2 |
| 32.03 | 32 | Residential | B | 1 | 106 YUKON LN | 68 | 63 | 5 |
| 32.04 | 32 | Residential | B | 1 | 104 YUKON LN | 68 | 63 | 5 |
| 32.05 | 32 | Residential | B | 1 | 102 YUKON LN | 59 | 57 | 2 |
| 32.06 | 32 | Residential | B | 1 | 3830 SWEETEN CREEK RD | 55 | 53 | 2 |
| 32.07 | 32 | Residential | B | 1 | 3830 SWEETEN CREEK RD | 54 | 53 | 1 |
| 32.08 | 32 | Residential | B | 1 | 100 YUKON LN | 60 | 57 | 3 |
| 32.09 | 32 | Residential | B | 1 | 3904 SWEETEN CREEK RD | 64 | 59 | 5 |
| 32.10 | 32 | Residential | B | 1 | 3837 SWEETEN CREEK RD | 53 | 52 | 1 |
| 32.11 | 32 | Residential | B | 1 | 3839 SWEETEN CREEK RD | 55 | 52 | 3 |
| 32.12 | 32 | Residential | B | 1 | 3906 SWEETEN CREEK RD | 65 | 60 | 5 |
| 32.13 | 32 | Residential | B | 1 | 3908 SWEETEN CREEK RD | 67 | 61 | 6 |
| 32.14 | 32 | Residential | B | 1 | 3910 SWEETEN CREEK RD | 66 | 61 | 5 |
| 32.15 | 32 | Residential | B | 1 | 101 TOYNBEE PLACE | 52 | 50 | 2 |
| 32.16 | 32 | Residential | B | 1 | 3903 SWEETEN CREEK | 50 | 49 | 1 |
| 32.17 | 32 | Residential | B | 1 | 3912 SWEETEN CREEK | 63 | 60 | 3 |
| 32.18 | 32 | Residential | B | 1 | 3914 SWEETEN CREEK RD | 63 | 61 | 2 |
| 32.19 | 32 | Residential | B | 1 | 3905 SWEETEN CREEK RD | 50 | 49 | 1 |
| 32.20 | 32 | Residential | B | 1 | 4000 SWEETEN CREEK | 61 | 59 | 2 |
| 32.21 | 32 | Residential | B | 1 | 4002 SWEETEN CREEK RD | 61 | 59 | 2 |
| 32.22 | 32 | Residential | B | 1 | 4004 SWEETEN CREEK RD | 61 | 59 | 2 |
| 32.23 | 32 | Residential | B | 1 | 4001 SWEETEN CREEK RD | 50 | 49 | 1 |
| 32.24 | 32 | Residential | B | 1 | 4003 SWEETEN CREEK RD | 53 | 53 | 0 |
| 32.25 | 32 | Residential | B | 1 | 4006 SWEETEN CREEK RD | 62 | 59 | 3 |
| 32.26 | 32 | Residential | B | 1 | 4008 SWEETEN CREEK RD | 64 | 62 | 2 |
| 32.27 | 32 | Residential | B | 1 | 4007 SWEETEN CREEK RD | 57 | 56 | 1 |
| 32.28 | 32 | Residential | B | 1 | 4010 SWEETEN CREEK RD | 65 | 62 | 3 |
| 32.29 | 32 | Residential | B | 1 | 4010 SWEETEN CREEK RD | 66 | 63 | 3 |
| 32.30 | 32 | Residential | B | 1 | 4007 SWEETEN CREEK RD | 60 | 57 | 3 |
| 32.31 | 32 | Residential | B | 1 | 4103 SWEETEN CREEK RD | 62 | 58 | 4 |
| 32.32 | 32 | Residential | B | 1 | 4100 SWEETEN CREEK RD | 69 | 64 | 5 |
| 32.33 | 32 | Residential | B | 1 | 4102 SWEETEN CREEK RD | 71 | 65 | 6 |
| 32.34 | 32 | Residential | B | 1 | 301 KINSALE DR | 64 | 60 | 4 |
| 32.35 | 32 | Residential | B | 1 | 4104 SWEETEN CREEK RD | 71 | 64 | 7 |
| 32.36 | 32 | Residential | B | 1 | 405 MARTIN LUTHER KING JR | 71 | 62 | 9 |
| 32.37 | 32 | Residential | B | 1 | 507 SWEETEN CREEK RD | 65 | 59 | 6 |
| 32.38 | 32 | Residential | B | 1 | 604 PERRY CREEK DR | 68 | 60 | 8 |
| 32.39 | 32 | Residential | B | 1 | 406 SILVER CREEK TRAIL | 63 | 55 | 8 |
| 32.40 | 32 | Residential | B | 1 | 600 PERRY CREEK DR | 67 | 58 | 9 |
| 32.41 | 32 | Residential | B | 1 | 601 PERRY CREEK DR | 61 | 56 | 5 |
| 32.42 | 32 | Residential | B | 1 | 600 PERRY CREEK DR | 66 | 57 | 9 |
| 32.43 | 32 | Residential | B | 1 | 103 HAWKSBILL PL | 67 | 59 | 8 |
| 32.44 | 32 | Residential | B | 1 | 105 HAWKSBILL PL | 66 | 59 | 7 |
| 32.45 | 32 | Residential | B | 1 | 104 HAWKSBILL PL | 66 | 58 | 8 |
| 32.46 | 32 | Residential | B | 1 | 102 HAWKSBILL PL | 65 | 58 | 7 |
| 32.47 | 32 | Residential | B | 1 | 508 PERRY CREEK DR | 62 | 54 | 8 |
| 32.48 | 32 | Residential | B | 1 | 509 PERRY CREEK DR | 60 | 54 | 6 |
| 32.49 | 32 | Residential | B | 1 | 507 PERRY CREEK DR | 58 | 52 | 6 |
| 32.50 | 32 | Residential | B | 1 | 506 PERRY CREEK DR | 62 | 57 | 5 |
| 32.51 | 32 | Residential | B | 1 | 504 PERRY CREEK DR | 63 | 57 | 6 |
| | | | | | **-NW32- Predicted Build Condition With-Wall Benefits**[1] | | | **25** |

Impact = 5 to 6 dB(A) NLR = >=7 dB(A) NLR =

1. A receptor is considered benefited if the predicted Noise Level Reduction (NLR) is at least 5 dB(A).

# APPENDIX E
## FEASIBILITY AND REASONABLENESS WORKSHEETS

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW3- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 2 **# BENEFITS -** 1 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

### A. FEASBILITY:

1. Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? NO
2. Does topography negatively affect the proposed noise wall? NO
3. Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? NO
4. Is there control of access in the vicinity of the proposed noise wall? YES

### B. REASONABLENESS

1. Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? NO
2. Is the quantity per benefited receptor of N/A square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? NO

### C. NOISE WALL PRELIMINARY DECISION

1. Is the noise wall preliminarily feasible? NO
2. Is the noise wall preliminarily reasonable? NO
3. Is the noise wall likely? NO

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 12/23/2018

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW5- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 1 **# BENEFITS -** 1 **NAC:** ☐ **A** ☐ **B** ☑ **C** ☑ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | NO |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | NO |
| 2. | Is the quantity per benefited receptor of N/A square feet less than the maximum allowable quantity per benefited receptor of 2,000 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | NO |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 02/19/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW6- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 19 **# BENEFITS -** 22 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | YES |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of 1,447 square feet less than the maximum allowable quantity per benefited receptor of 2,000 square feet? | YES |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | YES |
| 2. | Is the noise wall preliminarily reasonable? | YES |
| 3. | Is the noise wall likely? | YES |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 1/03/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW9- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 2 **# BENEFITS -** 3 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | YES |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of 2,970 square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | YES |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 12/23/2018

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW10- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 2 **# BENEFITS -** 0 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | NO |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | NO |
| 2. | Is the quantity per benefited receptor of N/A square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | NO |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 12/23/2018

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW12- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 3 **# BENEFITS -** 0 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | NO |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | NO |
| 2. | Is the quantity per benefited receptor of N/A square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | NO |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 02/19/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW13- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 9 **# BENEFITS -** 16 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☑ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | YES |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of 615 square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | YES |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | YES |
| 2. | Is the noise wall preliminarily reasonable? | YES |
| 3. | Is the noise wall likely? | YES |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 1/03/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW14- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 1 **# BENEFITS -** 1 **NAC:** ☐ **A** ☐ **B** ☑ **C** ☐ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | NO |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | NO |
| 2. | Is the quantity per benefited receptor of N/A square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | NO |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 02/19/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW17- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 3 **# BENEFITS -** 2 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | YES |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of 8,146 square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | YES |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 02/19/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW20- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 4 **# BENEFITS -** 5 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | YES |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of 4,176 square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | YES |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 12/23/2018

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW22A- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 2 **# BENEFITS -** 2 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | YES |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of 6,585 square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | YES |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 1/03/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW22b- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 3 **# BENEFITS -** 2 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

### A. FEASBILITY:

1. Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? YES
2. Does topography negatively affect the proposed noise wall? NO
3. Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? NO
4. Is there control of access in the vicinity of the proposed noise wall? YES

### B. REASONABLENESS

1. Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? YES
2. Is the quantity per benefited receptor of 1,755 square feet less than the maximum allowable quantity per benefited receptor of 2,000 square feet? YES

### C. NOISE WALL PRELIMINARY DECISION

1. Is the noise wall preliminarily feasible? YES
2. Is the noise wall preliminarily reasonable? YES
3. Is the noise wall likely? YES

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 02/19/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW24a- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 5 **# BENEFITS -** 7 **NAC:** ☐ **A** ☑ **B** ☑ **C** ☑ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | NO |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of N/A square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | NO |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 03/26/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW24b- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 4 **# BENEFITS -** 5 **NAC:** ☐ **A** ☑ **B** ☐ **C** ☐ **D** ☐ **E**

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | YES |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of 2,491 square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | YES |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 03/26/2019

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW26- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 2 **# BENEFITS -** 4 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | YES |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of 5,303 square feet less than the maximum allowable quantity per benefited receptor of 2,000 square feet? | NO |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | YES |
| 2. | Is the noise wall preliminarily reasonable? | NO |
| 3. | Is the noise wall likely? | NO |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 12/23/2018

*To be used with Traffic Noise Reports only*

# NCDOT NOISE WALL

## FEASIBILITY & REASONABLENESS WORKSHEET

**PROJECT -** I-40 Widening **TIP# -** I-3306A

**NOISE WALL # -** -NW32- **COUNTY(IES) -** ORANGE

**# IMPACTS -** 15 **# BENEFITS -** 25 **NAC:** ☐ A ☑ B ☐ C ☐ D ☐ E

### A. FEASBILITY:

| | | |
|---|---|---|
| 1. | Can a 5-dB(A) reduction in traffic noise levels be achieved for at least two impacted receptors? | YES |
| 2. | Does topography negatively affect the proposed noise wall? | NO |
| 3. | Does the proposed noise wall negatively affect property access, drainage, utilities or maintenance requirements? | NO |
| 4. | Is there control of access in the vicinity of the proposed noise wall? | YES |

### B. REASONABLENESS

| | | |
|---|---|---|
| 1. | Can a 7- dB(A) reduction in traffic noise levels be achieved for at least one benefited receptor? | YES |
| 2. | Is the quantity per benefited receptor of 1,499 square feet less than the maximum allowable quantity per benefited receptor of 1,500 square feet? | YES |

### C. NOISE WALL PRELIMINARY DECISION

| | | |
|---|---|---|
| 1. | Is the noise wall preliminarily feasible? | YES |
| 2. | Is the noise wall preliminarily reasonable? | YES |
| 3. | Is the noise wall likely? | YES |

**PREPARED BY:** Jaret Demcher **DATE PREPARED:** 12/23/2018

# APPENDIX F
TRAFFIC NOISE MODELS

## General

This section summarizes TNM Inputs used in this Traffic Noise Report (TNR).

- Roadways
- Receivers (Receptors)
- Barriers
- Tree Zones (Only Validation)
- Terrain Lines

## Coordinate System

TNM Objects were modeled using the North American Datum 1983 (NAD83) horizontal coordinate system, and North Carolina State Plane 1983 US Feet.

## Modeling Procedure

### *Roadways:*

TNM roadway element on interstate routes and major unlimited access roadways were modeled to represent general purpose lanes, turn lanes and shoulders. Minor roadways (side roads) were modeled with a single TNM roadway representing both directions of travel and included additional width for the shoulders. All adjacent TNM roadways were modeled with a slight overlap consistent with the NCDOT Noise Manual. For the proposed roadway facility, TNM roadway vertices were selected to represent interval lengths that appropriately represented fluctuations in the horizontal and vertical roadway geometry. Design year 2040 peak hour traffic was added to the roadway elements to determine the potential noise impacts. Detailed traffic information is provided in Appendix B.

### *Receivers (Receptors):*

TNM receiver elements were modeled by assigning a point location to the most sensitive likely "area of frequent human use" or the corner of each residence and recreational land use within the project limits. Receivers in the models were assigned a height of 4.92 feet unless designated as a multi-story unit. Due to the ambient nature of this project being proposed on new alignment, noise levels at each discrete receptor were determined by means of modeling individual TNM receivers at all representative location for "Loudest-condition" Existing (2013), No-Build (2040) and Design year (2040) build-condition predicted traffic. Due to the complexity of the model, the project was divided into multiple models for each scenario to analyze traffic noise levels along the project corridor.

***Barriers:***

TNM Barrier elements were used to model buildings throughout the project area. The barriers were assigned heights of 10' per floors below the roof line of the structure.

Traffic noise abatement measures are feasible for the project. Sound barriers were modeled in eight locations and found to be feasible and reasonable in three locations generally parallel to I-40.

***Tree Zones:***

TNM tree zone elements were added in order to model location of dense trees and forested areas. However, since the trees are not evergreens, tree zones were modeled at a height of zero. The tree zones were used to note a large area of trees/terrain. Since the trees will not stay full for the duration of the year, the heights were modeled at zero.

***Terrain Lines:***

Terrain lines were input into TNM to define significant changes in grades and /or slopes throughout the noise study areas. The terrain lines were based on elevation data contained in the downloaded contour data associated with the project. For the design, corridor modeling .tin files provided by the design consultant were used to accurately represent the design elevation.

**TNM Traffic Noise Level Assessment**

The TNM Traffic noise level assessment is divided into five tasks:

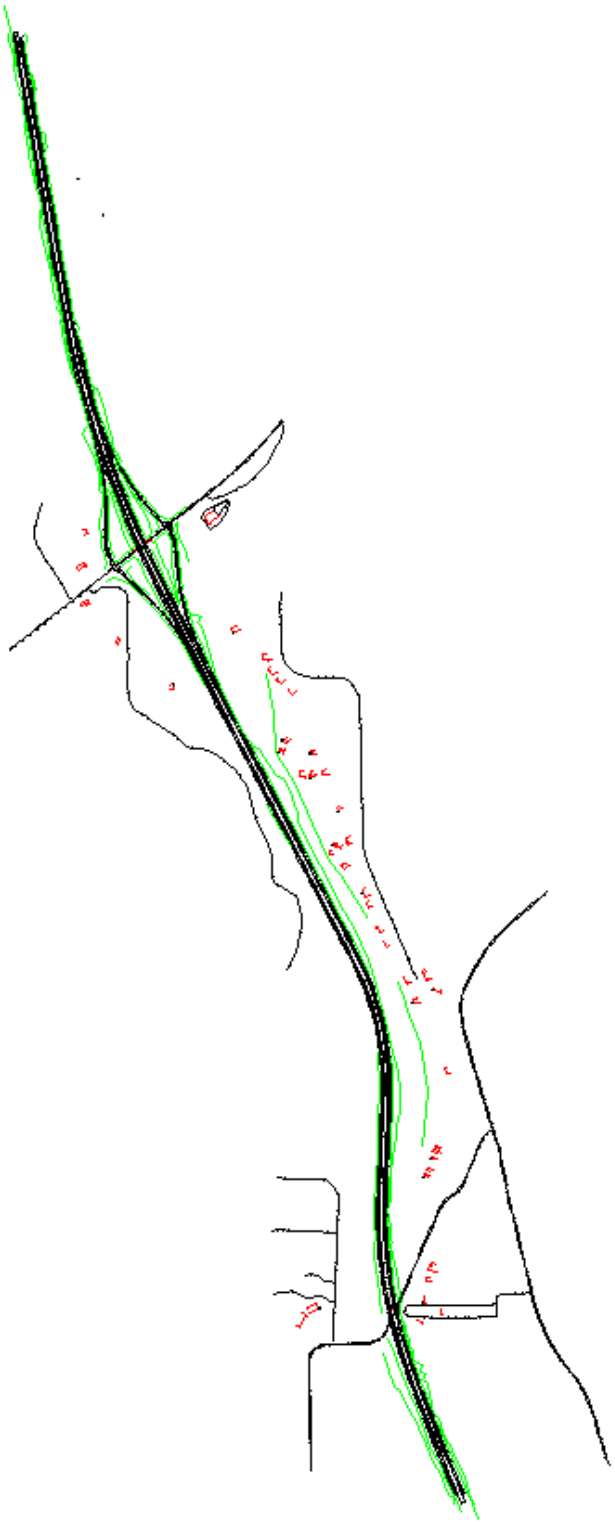
1. Creation of TNM Validation Model.
2. Assessment of Predicted Loudest-Hour Existing (2013) condition levels
3. Assessment of Predicted Loudest-Hour No-Build (2040) condition levels
4. Assessment of Predicted Loudest-Hour Build (2040) condition Without-Barrier levels
5. Assessment of Predicted Loudest-Hour Build (2040) condition With-Barrier levels

**Existing 2013, Area 01A**

**Existing 2013, Area 01B**

**Existing 2013, Area 2**

**Existing 2013, Area 3**

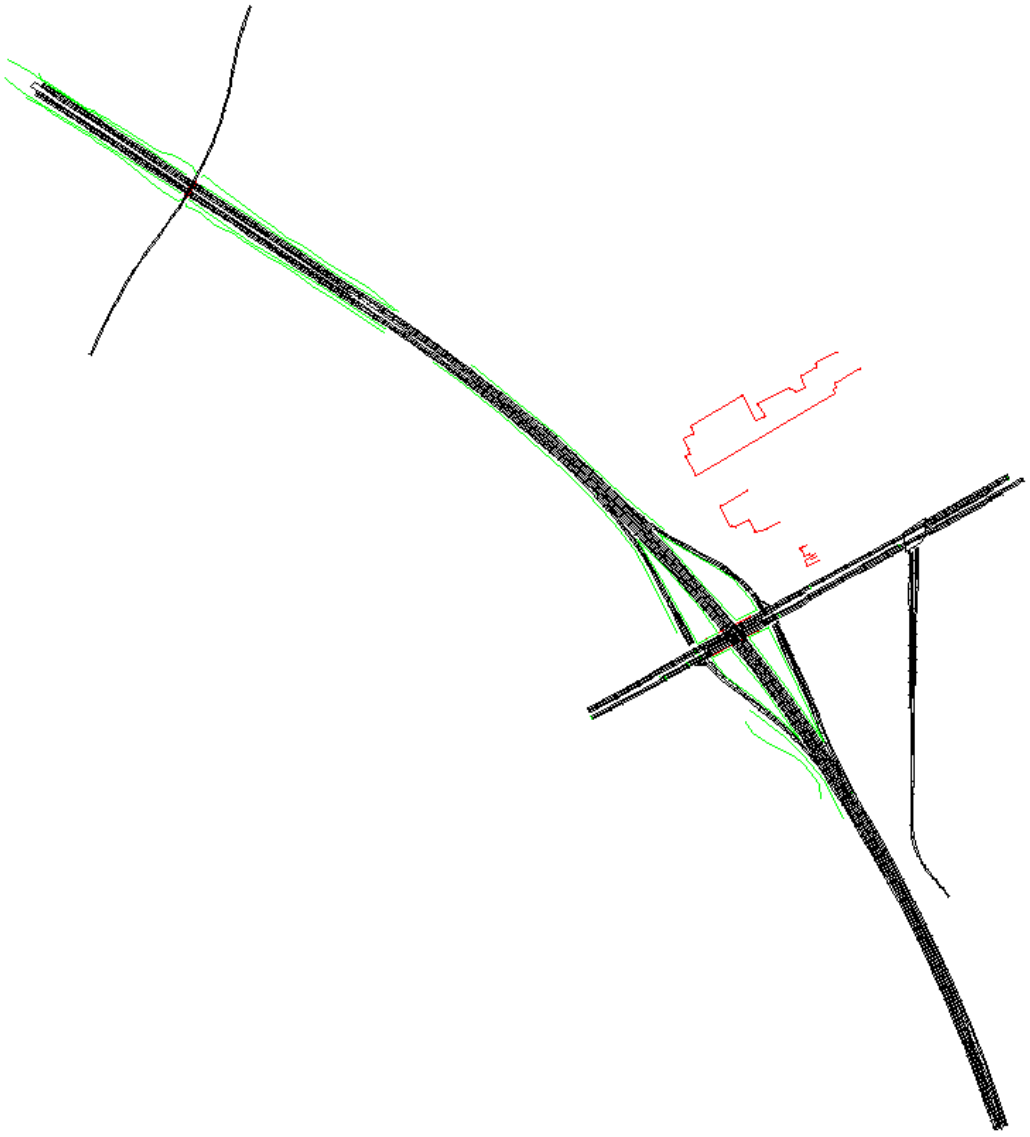


**Existing 2013, Area 4a**

**Existing 2013, Area 4b**

**Existing 2013, Area 5**

**Existing 2013, Area 6**

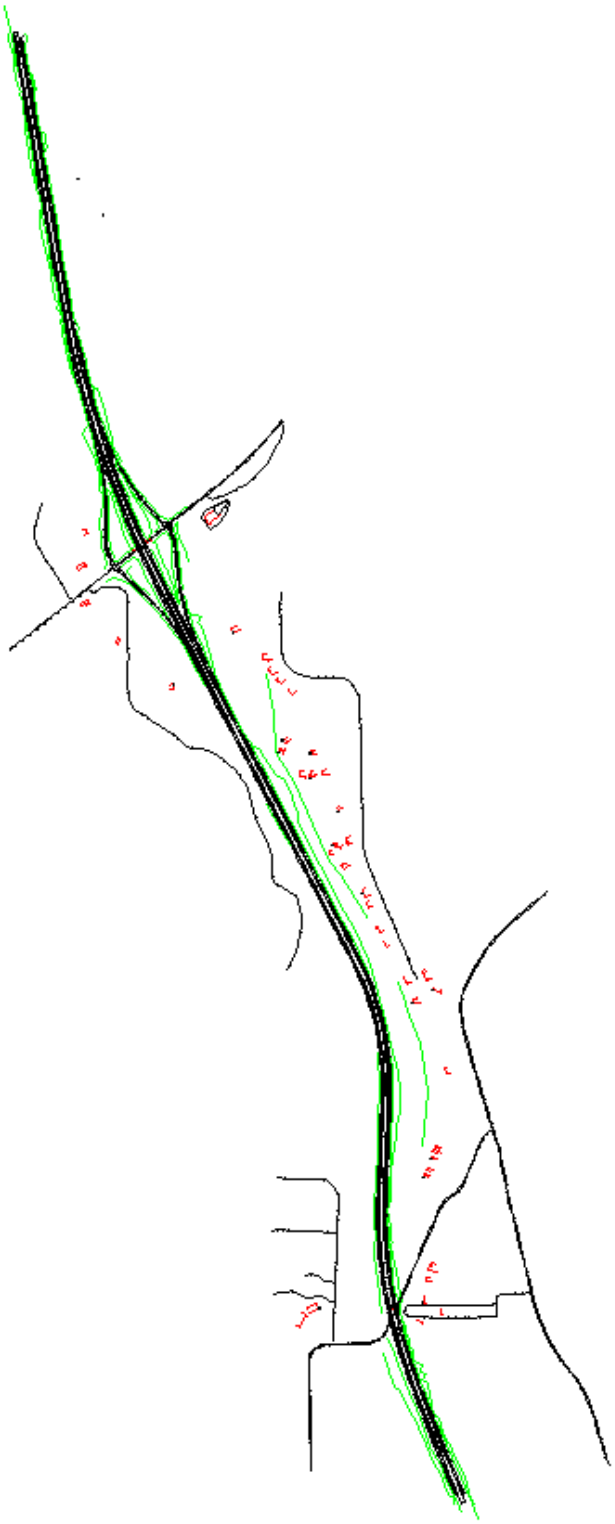


**No-Build, Area 01A**

**No-Build, Area 01B**

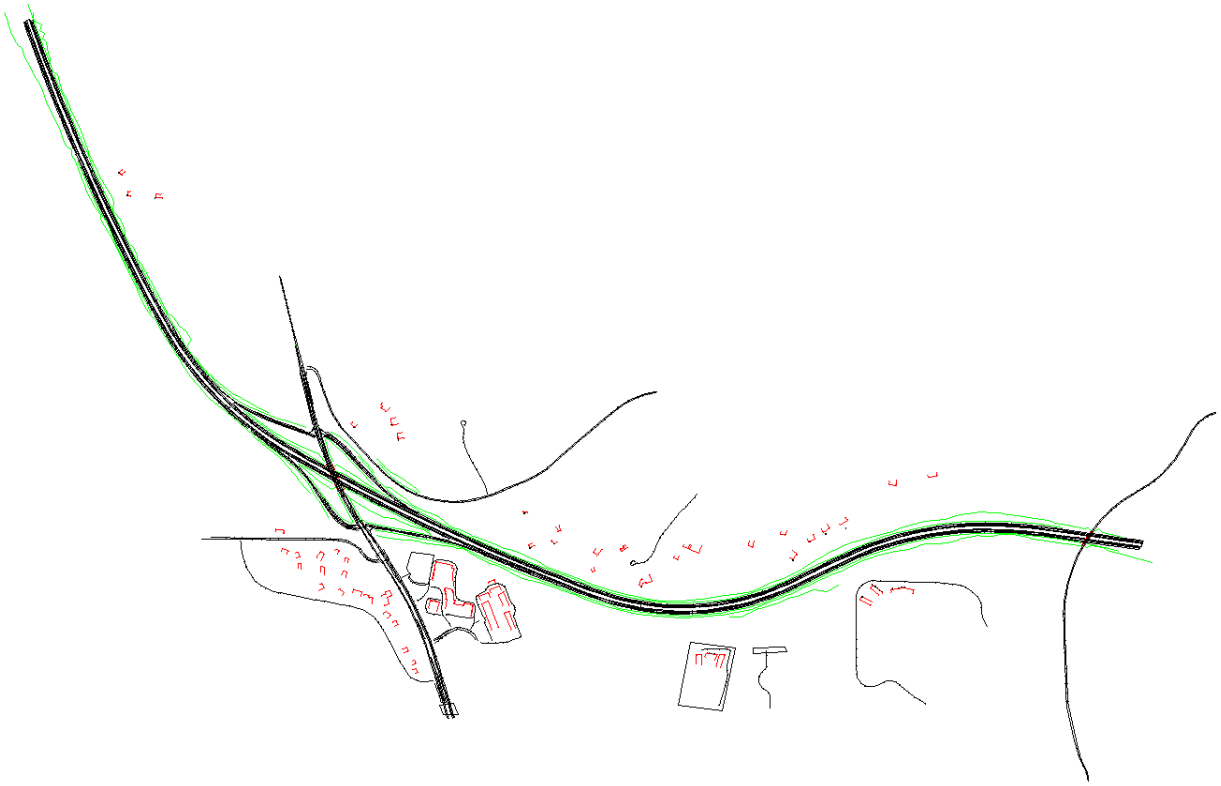
**No-Build, Area 2**

**No-Build, Area 3**



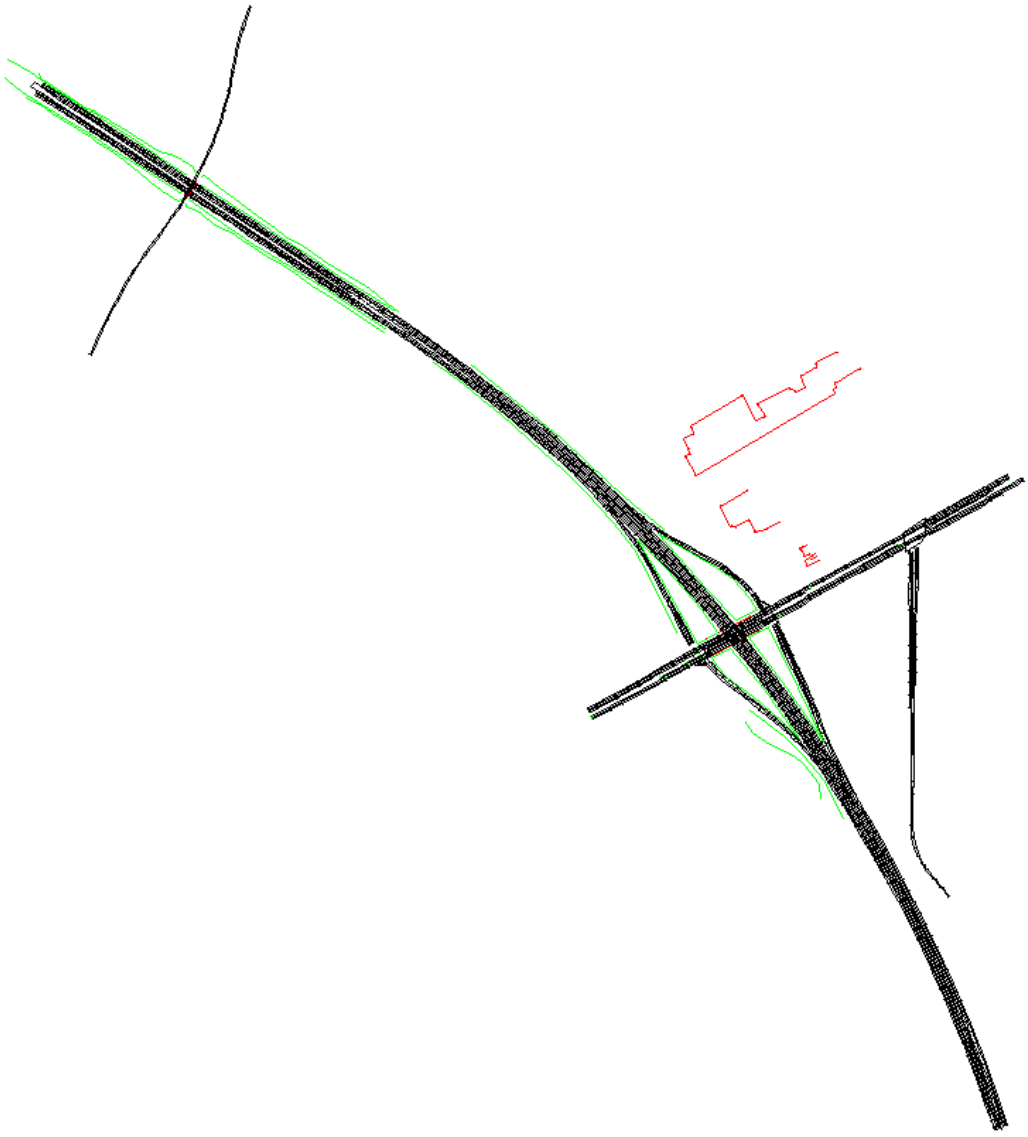
**No-Build, Area 4a**

**No-Build, Area 4b**



**No-Build, Area 5**

**No-Build, Area 6**

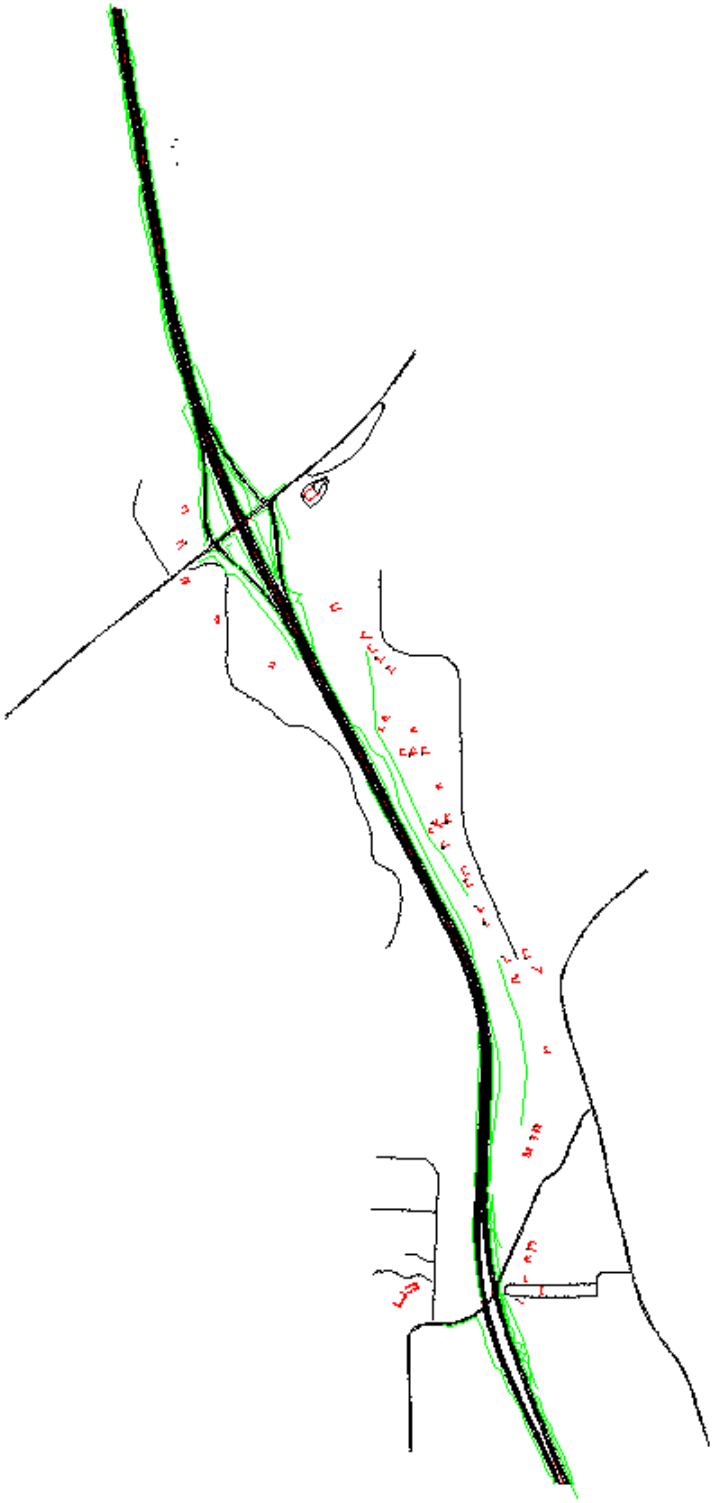


**Build, Area 1a**

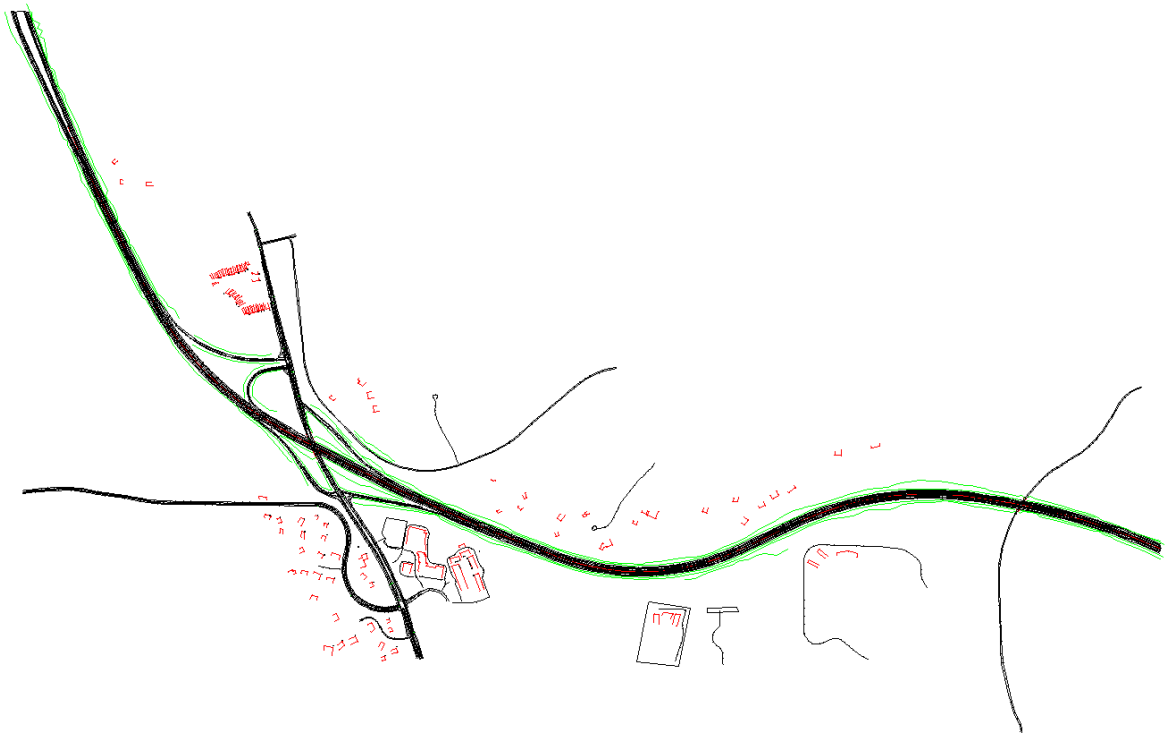
**Build, Area 1b**

**Build, Area 2**

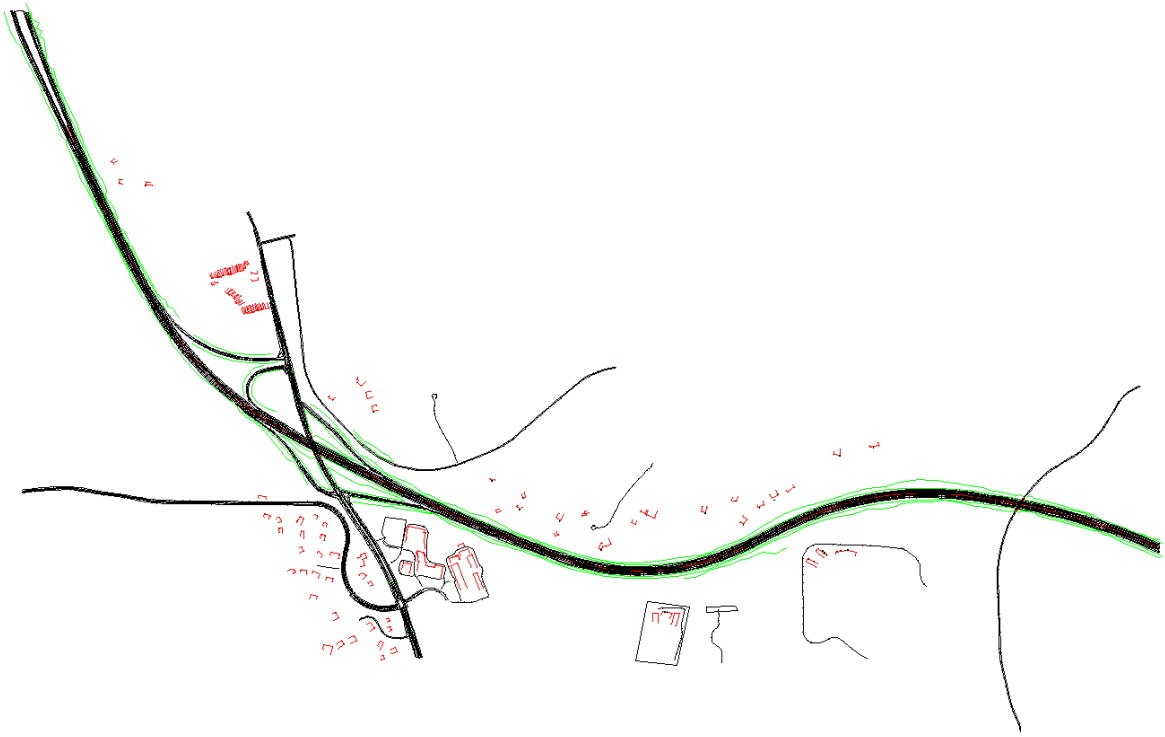
**Build, Area 3**



**Build, Area 4A**

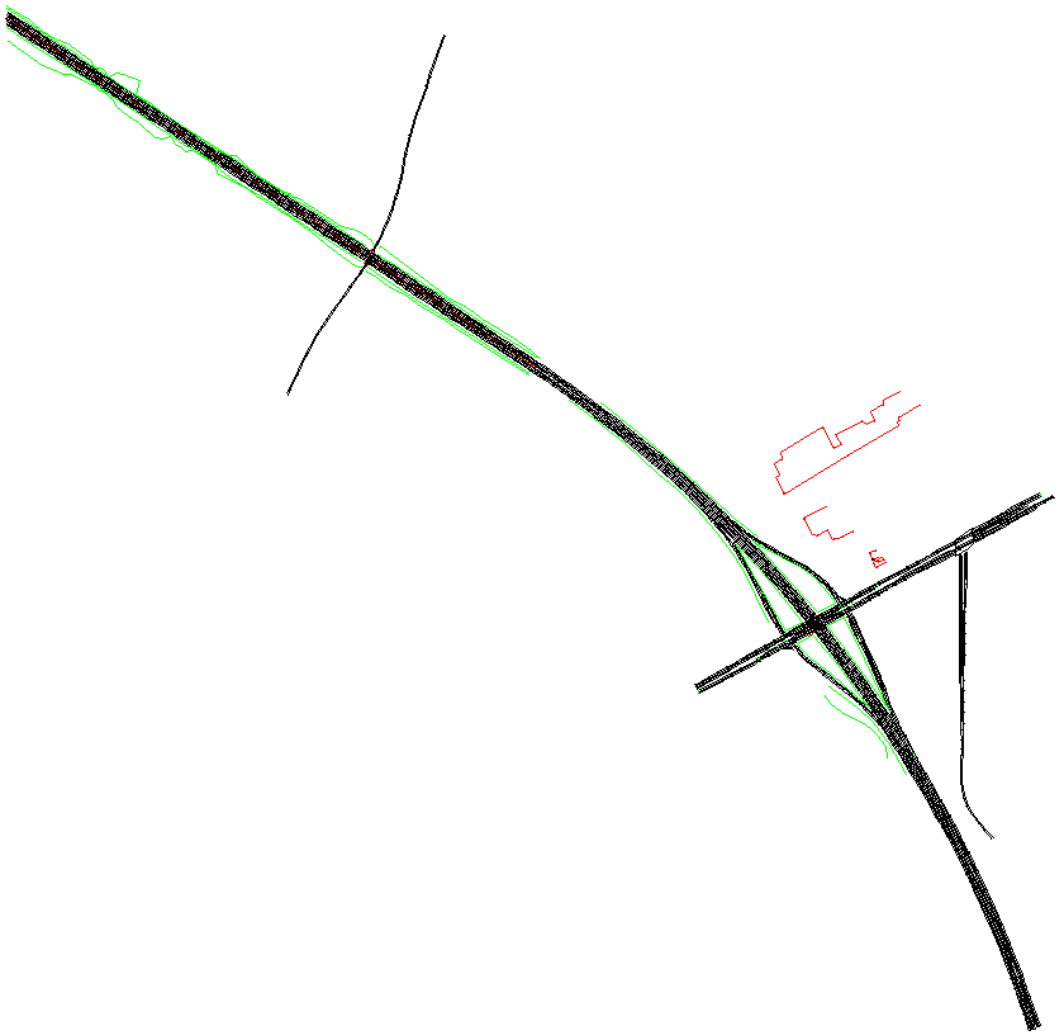


**Build, Area 4B**



**Build, Area 5**

**Build, Area 6**



# APPENDIX G
## NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
## TRAFFIC NOISE ABATEMENT POLICY

# NORTH CAROLINA
# DEPARTMENT OF TRANSPORTATION

# TRAFFIC NOISE POLICY

**Effective Date: October 6, 2016**

**Noise Policy Committee:**

Glenn Mumford, PE .....Roadway Design Unit
Drew Joyner, PE.....Human Environment Section
Brian Hanks, PE.....Structures Management Unit
Daniel Keel, PE.....Division of Highways
Mike Mills, PE.....Division Engineer
Pat Ivey, PE.....Division Engineer
Greg Smith, PE.....Human Environment Section

**Sponsors:**

Clarence Coleman, PE .....Federal Highway Administration
Felix Davila, PE.....Federal Highway Administration
Edward L. Curran.....Board of Transportation

**APPROVED BY:**

10-6-16
Date of Approval

John F. Sullivan, III, PE, Division Administrator
Federal Highway Administration

10.6.16
Date of Approval

Nicholas J. Tennyson
Secretary of Transportation

10-5-16
Date of Approval

Edward L. Curran, Chairman
Board of Transportation

Person Responsible
for Policy:

Traffic Noise & Air Quality Supervisor
Human Environment Section
1598 Mail Service Center
Raleigh, North Carolina 27699-1598
(919) 707-6087

## DEFINITIONS

a) Decibel (dB) - The logarithmic unit for measuring sound pressure levels. For traffic noise measurements, decibels are most commonly reported in terms of the A-weighing frequency scale, which best includes the frequencies to which human hearing is typically most sensitive and is denoted by the abbreviation dB(A).

b) Leq – The equivalent steady -state sound level which, in a defined period of time, contains the same amount of acoustic energy as a time-varying sound level during the same period of time.

c) Receptor – Any location that receives traffic noise.

d) Impacted Receptor – A receptor for which the predicted hourly equivalent traffic noise level 1) meets or exceeds the approach criteria value found in Table 1 of this policy or 2) exceeds the existing ambient noise level by 10 dB(A) or more.

e) Benefited Receptor - All receptors, both impacted and non-impacted, that receive a noise level reduction of 5 dB(A) or more through placement of a noise abatement measure.

f) Noise Abatement Measure – Any method used to reduce traffic noise levels, such as noise walls and earthen berms.

g) Worst Noise Hour – The hour within a day in which the highest magnitude hourly equivalent sound level occurs. The worst traffic noise hour typically occurs when traffic is flowing freely at a high volume relative to the peak traffic hour volume, with a high percentage of trucks.

h) Practicable – Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

## INTRODUCTION

This document represents the North Carolina Department of Transportation (hereinafter NCDOT) policy on highway traffic noise and construction noise and describes the implementation of the requirements of the Federal Highway Administration (hereinafter FHWA) Noise Standard at 23 Code of Federal Regulations Part 772 (23 CFR 772) as they relate to federal-aid and select state-funded highway construction in North Carolina. This policy was developed by the NCDOT and reviewed and approved by the FHWA.

The North Carolina Department of Transportation Traffic Noise Manual and 23 CFR 772 are intended to be companion documents to this policy.

## PURPOSE

This policy describes the NCDOT process that is used in determining traffic noise impacts and abatement measures and the equitable and cost-effective expenditure of public funds for noise abatement. Where the FHWA has given highway agencies flexibility in implementing the 23 CFR 772 standards, this policy describes the NCDOT approach to implementation.

## APPLICABILITY

Projects with a Date of Public Knowledge on or after the effective date of this policy shall comply with the criteria of this policy.

### Federal–Aid Projects

This policy applies to all "Type I" federal or federal-aid highway projects in the State of North Carolina, including federal projects that are administered by local public agencies. Therefore, this policy applies to any highway project that is funded with federal-aid highway funds or requires FHWA approval regardless of funding sources. NCDOT does not participate in nor fund Type II (retrofit) projects along existing transportation facilities. Noise analyses are not required for Type III projects. Each of these project types are defined below. This policy shall be applied uniformly and consistently to all Type I federal projects throughout North Carolina.

### Type I Project

(a) The construction of a highway on new location; or,

(b) The physical alteration of an existing highway where there is either:
   (i) Substantial Horizontal Alteration. A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition; or,
   (ii) Substantial Vertical Alteration. A project that removes shielding, therefore exposing the line-of-sight between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor; or,

(c) The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a HOV lane, High-Occupancy Toll (HOT) lane, bus lane, or truck climbing lane; or,

(d) The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane; or,

(e) The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange; or,

(f) Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane; or,

(g) The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot or toll plaza.

(h) If a project is determined to be a Type I project under this definition then the entire project area as defined in the environmental document is a Type I project.

### Type II Project.

A Federal or Federal-aid highway project for noise abatement on an existing highway. For a Type II project to be eligible for Federal-aid funding, the highway agency must develop and implement a Type II program in accordance with 23 CFR 772.7(e).

**Type III Project**

A Federal or Federal-aid highway project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

The highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials in 23 CFR 772 and this policy constitute the noise standards mandated by 23 U.S.C. 109(1). All federally-funded highway projects which are developed in conformance with this policy shall be deemed to be in accordance with the FHWA noise standards.

**State-Funded Projects**

Projects that are State funded do not use the federal project type designation for applicability.

This policy will apply to State funded projects located on a US or Interstate route that is full control of access where the project involves adding a through-traffic lane.

All other State-funded projects for which a State Environmental Assessment (EA) or State Environmental Impact Statement (EIS) is prepared will comply with the North Carolina Environmental Policy Act (SEPA) and the North Carolina Administrative Code. For these projects, noise barriers will be considered where practicable.

## DATE OF PUBLIC KNOWLEDGE

The Date of Public Knowledge of the location and potential noise impacts of a proposed highway project is the approval date of the final environmental document, e.g., Categorical Exclusion (CE), State or Federal Finding of No Significant Impact (FONSI) or State or Federal Record of Decision (ROD).

NCDOT is not responsible for evaluating or implementing any noise barriers to protect developed lands that were not permitted before the Date of Public Knowledge.

The criterion for determining when undeveloped land is permitted for development is the approval date of a building permit for an individual lot or site. Approval of a development plat or any other development plan does not meet the permitted criteria.

NCDOT advocates use of local government authority to regulate land development, planning, design and construction in such a way that noise impacts are minimized.

## TRAFFIC NOISE PREDICTION

All traffic noise analyses performed by or for NCDOT must utilize the most current version of the FHWA Traffic Noise Model (TNM®) or any other model determined by the FHWA to be consistent with the methodology of the TNM® model, pursuant to 23 CFR 772.9.

Average pavement type shall be used in the FHWA TNM® for future noise level prediction.

Noise contour lines may be used only for project alternative screening or for providing information to local officials for their land use planning efforts associated with undeveloped lands as per 23 CFR 772.17. Noise contours shall not be used for determining highway traffic noise impacts or assessing noise barriers.

Traffic characteristics that yield the worst noise hour equivalent traffic noise levels, expressed in Leq(h), for the Design Year shall be used in predicting noise levels and assessing noise impacts.

Traffic noise prediction must adhere to all direction contained in the NCDOT Traffic Noise Manual.

## NOISE IMPACT DETERMINATION

Noise abatement measures for NCDOT highway projects must be considered when traffic noise impacts are created by either of the following two conditions:

(a) The predicted worst noise hour Leq(h) traffic noise levels for the Design Year approach (reach one decibel less than) or exceed the Noise Abatement Criteria (NAC) contained in 23 CFR 772 and in Table 1 of this policy, OR

(b) The predicted worst noise hour Leq(h) traffic noise levels for the Design Year substantially exceed existing noise by 10 dB(A) or more.

A receptor is a discrete or representative location within a noise sensitive area(s) for any of the land uses listed in Table 1. For multifamily dwellings, each residence shall be counted as one receptor when determining impacted and benefited receptors. Non-residential receptors shall be represented by Equivalent Receptors calculated according to direction contained in the NCDOT Traffic Noise Manual.

Primary consideration shall be given to exterior areas where frequent human use occurs in the determination of traffic noise impacts.

A traffic noise analysis shall be completed for each project alternative under detailed study and for all receptors and Equivalent Receptors defined to represent land use activities A, B, C, D, and E listed in Table 1 that are present in the study area. FHWA approval is required for designating a Category A Activity on federally-funded projects. Traffic noise analyses are not required for Activity Category F land uses. Noise predictions are required for Activity Category G land uses to the extent needed to develop estimated noise levels to provide to local officials for planning purposes.

**Table 1**

**Noise Abatement Criteria**

Hourly Equivalent A-Weighted Sound Level (decibels (dB(A))

| Activity Category | Activity Criteria[1] Leq(h)[2] | Evaluation Location | Activity Description |
|---|---|---|---|
| A | 57 | Exterior | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| B [3] | 67 | Exterior | Residential |
| C [3] | 67 | Exterior | Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section4(f) sites, schools, television studios, trails, and trail crossings |
| D | 52 | Interior | Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios |
| E [3] | 72 | Exterior | Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F |
| F | -- | -- | Agriculture, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing |
| G | -- | -- | Undeveloped lands that are not permitted |

[1] The Leq(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

[2] The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with Leq(h) being the hourly value of Leq.

[3] Includes undeveloped lands permitted for this activity category.

## ANALYSIS OF NOISE ABATEMENT MEASURES

When traffic noise impacts are identified, noise abatement measures shall be considered and evaluated for feasibility for all impacted receptors and reasonableness for all benefited receptors. All of the following conditions must be met in order for noise abatement measures to be justified and incorporated into project design, as applicable. Failure to achieve any single element of feasibility or reasonableness will result in the noise abatement measure being deemed not feasible or not reasonable, whichever applies.

NCDOT will provide noise barriers for all possible impacted receptors that meet the feasibility and reasonableness criteria found in this policy. Noise barriers will not be extended solely to provide noise reduction for non-impacted receptors. Benefits for non-impacted receptors will only occur when they are incidental in noise barriers designed for impacted receptors.

### Feasibility

The combination of acoustical and engineering factors considered in the evaluation of a noise barrier.

(a) Any receptor that receives a minimum noise level reduction of five dB(A) due to a noise barrier shall be considered a benefited receptor. Noise reduction of five dB(A) must be achieved for at least two impacted receptors.

(b) Engineering feasibility of noise barriers shall consider adverse impacts created by or upon property access, drainage, topography, utilities, safety, and maintenance requirements.

### Reasonableness

The combination of social, economic, and environmental factors considered in the evaluation of a noise barrier.

(a) Property owners and tenants of all benefited receptors shall be solicited to obtain their preferences for or against a proposed noise barrier. No tenant ballots are distributed for vacant rental property. Points per ballot shall be distributed in the following weighted manner:

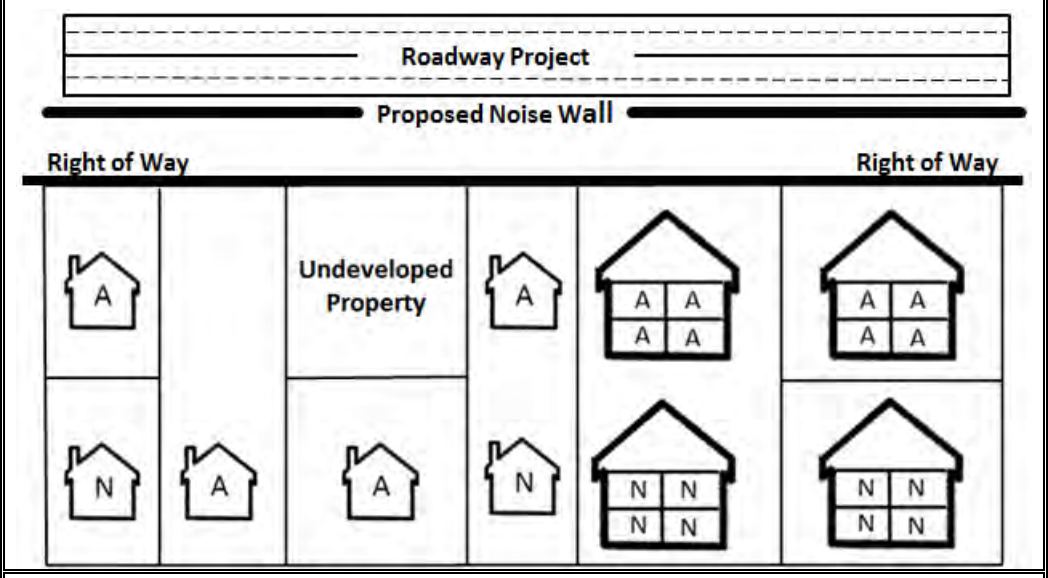
- 5 points/ballot for adjacent property owners who reside at property
- 4 points/ballot for adjacent property owners who rent property to others
- 3 points/ballot for all non-adjacent property owners who reside at property
- 2 points/ballot for all non-adjacent property owners who rent property to others
- 1 point/ballot vote for all tenants of rental property

Adjacent Receptor is a benefited receptor that 1) represents a property that abuts the highway right of way or 2) has no benefited receptor between it and the highway. Where multiple buildings containing benefited receptors are on the same property, such as an apartment or condominium complex, only the building closest to the highway is an adjacent receptor. Adjacent receptors will most often, but not always, be part of the front row of benefited receptors. Figure 1 provides graphic examples of Adjacent Receptors.

Owners of multi-unit rental locations will receive the applicable number of owner points for each individual benefited receptor (rental unit) owned.

**Figure 1**

**Examples of Adjacent Receptors**




A = Adjacent Receptor N = Non-Adjacent Receptor
Undeveloped Property = Vacant property for which no building permit has been issued and is not a park or recreation area

If 50% or greater of all possible voting points from benefited receptors for each noise barrier are received on the first solicitation, a simple majority of voting points cast will be used to determine if the proposed noise barrier will be constructed.

If less than 50% of all possible points for each noise barrier are received on the first solicitation, a second solicitation will be sent to benefited receptors who did not respond to the first solicitation.

If a second solicitation is conducted and 50% or greater of all possible voting points for each noise barrier are received after the second solicitation, a simple majority of voting points cast will be used to determine whether or not the proposed noise barrier will be constructed.

If less than 50% of total possible points for a noise barrier are received after the second solicitation, the noise barrier will not be constructed.

Noise barriers will be constructed in the case of a tie (equal number of points for and against a noise barrier).

All balloting soliciting the viewpoints of benefited property owners and applicable residents/tenants that occurs after the effective date of this policy, regardless of the Date of Public Knowledge, shall comply with the criteria of this policy.

(b) The allowable quantities for noise barriers per benefited receptor, with allowances for incremental increases based upon existing and predicted noise levels of all impacted receptors within each noise study area, are shown in Table 2.

For the purpose of calculating the incremental increase, the Noise Abatement Criteria (NAC) values for Activity Categories A, B, C, D, and E, as shown in Table 1, are to be used and not the NCDOT "approach" values used in traffic noise impact determinations.

**Table 2**

**Allowable Noise Barrier Base Quantities**

| Maximum Allowable Base Quantity | Noise Level Consideration | Noise Wall | Earthen Berm |
|---|---|---|---|
| | | 1,500 $ft^2$ | 4,200 $yd^3$ |
| Average dB(A) Increase Between Existing and Future Build for All Impacted Receptors | < 5 dB(A) | + 0 $ft^2$ | + 0 $yd^3$ |
| | 5-10 dB(A) | + 500 $ft^2$ | + 1,400 $yd^3$ |
| | > 10 dB(A) | + 1,000 $ft^2$ | + 2,800 $yd^3$ |
| Average Exposure to Absolute Noise Levels for All Impacted Receptors | < 5 dB(A) Over NAC Activity Category | + 0 ft2 | + 0 $yd^3$ |
| | 5-10 dB(A) Over NAC Activity Category | + 500 $ft^2$ | + 1,400 $yd^3$ |
| | > 10 dB(A) Over NAC Activity Category | + 1,000 $ft^2$ | + 2,800 $yd^3$ |

(c) A noise reduction design goal of at least 7 dB(A) must be evaluated for all benefited receptors. At least one benefited receptor must achieve the noise reduction design goal of 7 dB(A) to indicate the proposed noise barrier effectively reduces traffic noise.

**Other Considerations**

Prior to CE approval or issuance of a FONSI or ROD, NCDOT shall identify in all applicable environmental documents:

(a) Noise barriers that are feasible and reasonable,

(b) Noise impacts for which no noise barrier appears to be feasible and reasonable;

(c) Locations where noise impacts will occur, where noise barriers are feasible and reasonable, and the locations that have no feasible and reasonable noise barriers.

(d) Whether it is “likely” or “unlikely” that noise barriers will be installed for each noise sensitive area identified. "Likely" does not mean a firm commitment. The final decision on the installation of noise barriers shall be made upon completion of the project design, the public involvement process, compliance with the NCDOT Policy, and FHWA approval.

**Third Party Participation**

(a) Third party funding of noise barriers cannot be used to make up the difference between the reasonable quantity allowance and the actual quantity of noise barriers. Third party funding is allowed only by local, state and federal government agencies, and can only be used to pay for additional features such as landscaping and aesthetic treatments for noise barriers that meet all feasible and reasonable criteria previously detailed in this policy. Private parties may freely enter into agreements with government agencies to develop noise barrier enhancements; however, all funding for enhancements paid to NCDOT must come from government agencies

(b) Traditional highway construction resources pay for required noise barriers. Should a local government request that materials be used that are more costly than the standard materials proposed by NCDOT, the requesting entity must assume 100% of the actual additional construction cost.

(c) If a local government insists on the provision of a noise barrier deemed not reasonable by NCDOT, a noise barrier may be installed provided the local government assumes 100% of the costs and obtains an encroachment permit from NCDOT to perform the work. These costs include, but are not limited to, preliminary and final engineering, actual construction and all related maintenance. In addition, local governments must ensure that NCDOT's material, design and construction specifications are met. The local government must also assume 100% of the liability associated with the measure and hold harmless the NCDOT.

(d) For (b) and (c) above, the settlement agreement shall be signed before third party noise barrier design begins and payment shall be made to NCDOT in accordance with N.C.G.S. 136-66.3(e).

## ARCHITECTURAL TREATMENT OF NOISE WALLS

The standard noise wall architectural treatment consists of:

(a) Concrete columns; Steel piles may be used when necessary to address site conditions adverse to the use of concrete columns;

(b) Precast concrete panels textured on both sides;

(c) No texture on the uppermost foot of each wall segment;

(d) A single color of stain in brown or gray tones applied to both sides of textured panels;

(e) No stain applied to the uppermost foot of each wall segment and the concrete columns.

All enhancements to this standard noise wall must be paid for in accordance with Third Party Participation provisions in this policy.

NCDOT Division Engineers are responsible for determining noise wall textures and colors in their respective Divisions.

## PUBLIC INVOLVEMENT

Communication with the community regarding noise impacts and possible noise abatement shall occur at the start of the noise study process and continue throughout the development of the project. NCDOT will communicate with citizens to present information on the nature of highway traffic noise and discuss the effects of noise abatement and how public preferences for noise abatement is solicited via a balloting process.

Noise study areas showing "likely" noise barriers and/or proposed locations of any "recommended" noise barriers will be presented and discussed when holding Public Hearings and Public Meetings. Likely noise barriers are based on preliminary design traffic noise analyses and are described in environmental documents. Recommended noise barriers are based on final design noise analyses and are usually identified after the environmental document is completed. Property owners and tenants who are being balloted for a recommended noise barrier will be provided a visual of the noise barrier location prior to their casting a ballot.

## COORDINATION WITH LOCAL OFFICIALS

NCDOT will provide all traffic noise analyses to local government officials within whose jurisdiction a highway project is proposed as early in the project planning process as possible to protect future development from becoming incompatible with traffic noise levels. Specifically, environmental documents and design noise reports will contain information identifying areas that may be impacted by traffic noise, predicted noise level contour information, the best estimation of future noise levels for developed and undeveloped lands or properties in the immediate vicinity of the project and other appropriate design information. If requested, NCDOT will assist local officials with coordination and distribution of this information to residents, property owners and developers. NCDOT will provide information to assist local jurisdictions in the development of local noise controls, when requested. NCDOT strongly advocates the planning, design and construction of noise-compatible development and encourage its practice among planners, building officials, developers and others.

## CONSTRUCTION NOISE

To minimize the impacts of construction noise on the public, NCDOT shall:

(a) Identify land uses or activities that may be affected by noise from construction of the project.

(b) Determine the measures that are needed in the plans and specifications to minimize or eliminate adverse construction noise impacts to the community. This determination shall consider the benefits achieved and the overall adverse social, economic, and environmental effects and costs of the abatement measures.

(c) Consider construction techniques and scheduling to reduce construction noise impacts to nearby receptors and incorporate the needed abatement measures in the project plans and specifications.

## FEDERAL PARTICIPATION

The costs of noise barriers may be included in federal-aid participating project costs with the federal share being the same as that for the system on which the project is located when:

(a) Traffic noise impacts have been identified; and

(b) Noise barriers have been determined to be feasible and reasonable pursuant to 23 CFR 772 and this policy.

## REVIEW OF POLICY

This policy shall be reviewed by the NCDOT Board of Transportation at least every five years.