TIM
MILLER
ASSOCIATES, INC.

10 North Street, Cold Spring, New York 10516 Phone (845) 265-4400 Fax (845) 265-4418

November 26, 2025

Mr. Ben Astorino, Chairman
Town of Warwick Planning Board
123 Kings Highway
Warwick, NY 10990

RE: Noise Assessment for
US Lumber Facility
Kings Highway and State School Road
Town of Warwick, New York

Dear Mr. Astorino:

Tim Miller Associates, Inc. (TMA) has completed a noise assessment or study as requested by the Planning Board regarding the US Lumber facility, located on Kings Highway, in the Town of Warwick, New York. The US Lumber facility is a wholesale distributor of lumber and wood products. The noise study was completed to assess the operational noise levels resulting from the facility during night-time hours, and specifically whether facility noise adversely impacts residential neighbors near the property.

This noise study was completed after consultation with the Planning Board and its consultants as part of a requested Site Plan Amendment and a special use permit, to modify operating hours from the current 6:30 a.m. to 7:30 p.m. to 24-hour operations. The 24-hour operation for the facility is needed for U.S. Lumber to remain competitive in on-time deliveries to and from Canada, other States, and more locations in New York, including Long Island. The volume of overnight truck operations at the facility are expected to be infrequent, with there being anticipated no more than 5 trucks both entering and leaving the facility per week, during the overnight hours.

The overnight truck transfer operating hours (7:30 p.m. to 6:30 a.m.) would involve the dropping off of loaded trailers and the picking up of loaded trailers for off-site deliveries.

Executive Summary

The noise assessment was conducted in response to the Planning Board and Planning Board noise consultant's recommendations to collect noise measurements over a minimum 7-day period to provide a baseline of ambient (background) conditions, both with US Lumber operations and without activity in the lumber transport yard. A key component of the study was to conduct a test for noise of truck transfer activity at the US Lumber facility during overnight periods on two (2) nights.

Noise measurements were collected from Friday August 16, through August 26, 2024 at two residential receptors (10 days), and from a third residential receptor from August 21 through August 26, 2024 (6 days). The shortened period for the 3rd receptor was due to equipment malfunction.

As expected, noise levels at the three residential receptors were highest during morning and evening commuting periods, generally 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., when traffic along Kings Highway was highest. During evening commuting periods, 4:00 to 6:00 p.m., noise levels ranged from approximately 61 dBA up to 70 dBA at the residential receptors principally due to traffic on Kings Highway.

Noise levels were lowest during late nighttime periods generally between 1:00 and 5:00 a.m. Late night *hourly-average* measurements generally ranged from 55.0 dBA to 38.0 dBA, again primarily due to truck and other vehicular traffic along Kings Highway.

The truck transfer test activity was conducted at the US Lumber yard at approximately the 1:00 a.m. to 2:00 a.m. period on August 21, and August 23, 2024. A TMA representative observed the loading and truck and forklift movement activity and recorded the times of the activity.

Off-site receptor peak *one-minute* noise levels during the test period were generally between 50.0 and 55.0 dBA with the highest one-minute measurement of 55.5 dBA, an imperceptible dBA level above 55 dBA. While traffic volumes are comparatively low in this late-night period, the occasional passage of vehicles results in peaks in noise levels at the residential receptors near Kings Highway.

No noise levels above 55.5 dBA were observed at the resident receptor locations during the truck transfer test period. This level is essentially at the 55-decibel exterior noise goal for exterior uses established by the NYSDEC, HUD, and the EPA (see discussion below).

Noise levels were collected at three residences' yards across Kings Highway from the U.S. Lumber facility and across Kings Highway. We note that the noise levels within the nearby residences can reasonably be expected to be lower due to the shell of the residences reducing the noise. As noted by the Planning Board Noise consultant in the memo of November 15, 2023, and by the DEC in its policy guidance noted above, at page 11, noise within the residences can be expected to be further reduced by up to 15 decibels due to the shell of the residences with windows closed. With windows open, the reduction can reasonably be expected to be reduced by 5 decibels.

Consequently, the findings of this noise report are that during the noise test study period the dBA levels produced from nighttime activities at the U.S. Lumber site are within a range recommended by federal and state authorities (i.e. HUD, NYSDEC, EPA) as being acceptable and so as to be not loud, intrusive, or annoying at any of the residential receptors. Additionally, the noise produced at the lumber transport facility is compliant with the Town Noise Code (Section 100A et seq.), in that noise at the property line of the U.S. Lumber site from on-site operations is not in excess of 75 dBA.

Setting and Background

The US Lumber facility is located on the south side of County Rt. 13, or Kings Highway in the Town of Warwick, NY. The property is approximately 18.6 acres in size with frontage on Kings Highway and on State School Road. An aerial photograph shows the site and surroundings is provided as **Figure 1 Noise Study Location Map**. The primary facility entrance is on Kings Highway and a secondary entrance on State School Road, on the east side of the facility parcel. State School Road would be used as the sole entrance during overnight hours and all overnight truck traffic would arrive and depart from that entrance. The western portion of the site contains

brush and small trees and is undeveloped. The facility operates as a wholesale distributor of lumber and wood products and retail sales are not done at the site.

The local area can be characterized as suburban with a mix of residential, commercial, and agricultural uses. The facility property and land to the west, east and south is zoned OI – Office Industrial district. Property to the north of Kings Highway is zoned SL- Suburban Residential Low Density. The site and nearby land uses are shown in **Figure 1.**

The subject property contains an active lumber and wood products distribution facility. Wood products are delivered to the site on flatbed trailers, unloaded and the products stored in several warehouses, sheds and on pallets in the paved yard. Typically, flatbed trailers arrive onsite to be loaded and unloaded and deliveries made to locations throughout the tri-state metropolitan area and elsewhere.

An active freight rail line, the “Hudson Secondary” line is located at the southern edge of the facility property. According Middletown & New Jersey Railroad staff, different freight train operators run trains approximately twice weekly during the day and three to four trips during night time periods (8:00 p.m. to 2:00 a.m.).

A commercial mulch facility is located east of the site across State School Road. South of the site is undeveloped and partially wooded land. Further to the south is a Town park with baseball fields. Further east of the site along Kings Highway is undeveloped land. A residential subdivision with single-family homes is located north of the site across Kings Highway. Approximately 12 residential properties are north of the facility.

For this analysis, the noise receptors are located near three of those residences closest to the subject U.S. Lumber property, included within approximately 12 residential properties north of the property across Kings Highway. Additional homes are located further to the north (see **Figure 1**).

Noise Background

Noise can be defined as undesirable or "unwanted sound" (see DEC *Assessing and Mitigating Noise Impacts*, Page 2). Levels of noise are measured in units called decibels. Since the human ear cannot perceive all pitches or frequencies equally well, these measures are adjusted or weighted to correspond to human hearing.

This adjusted unit is known as the A-weighted decibel, or dBA. The dBA is useful for gauging and comparing the loudness of sounds as heard by the human ear. **Table 1** provides typical dBA levels for various common sounds.

Table 1 **Relative Loudness of Common Sounds** Expressed in Decibels (dBA)	
Source	**dBA**
Human breathing	5
Rustle of leaves	20
Whisper	30
Quiet library sounds	40
Average office, refrigerator	50
Near freeway auto traffic	60
Washing machine	70
School cafeteria with untreated surfaces	80
Noisy factory	85
Noisy urban street	90
Auto horn at 10 feet	100
Accelerating motorcycle at few feet away	110
Threshold of feeling: hard rock band	120
Threshold of pain	130
Jet engine at 300 feet	140
Source: based on "The Noise Guidebook", U.S. Department of Housing and Urban Development, March 1985.	

Since dBA describes a noise level at just one instant and since ambient noise levels are constantly varying, particularly where the principal cause of sound variation is due to vehicular traffic, other ways of describing noise levels, especially over extended periods, are needed. A commonly used descriptor is the Leq, which stands for “equivalent continuous sound level” and yields a “single decibel value which takes into account total sound energy over the period of time of interest” (see *Sound and Vibration Basics L_{eq} – Equivalent Continuous Sound Levels, Grace & Associates, acoustic-glossary.co.uk*.). The calculated L_{eq} during the test periods are further described below.

The L_{eq} noise level is the level of a constant noise source which has been averaged over a period of time. Additionally, a one decibel change in noise is the smallest change detectable by the human ear under laboratory conditions. Under normal conditions, a change in noise level of two or three decibels is required for the average person to notice a difference. **Table 2** shows the typical perception of noise change. Ten dBA represents a doubling or halving of the perceived loudness of sound.

Table 2 **Perception of Noise Changes**	
Change (dBA)	**Human Perception of Change**
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound
Source: Bolt Beranek and Neuman, Inc., Fundamentals and Abatement of Highway Traffic Noise, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.	

The NYSDEC table below, **Table 3**, discusses the human perceptions to an increase in sound pressure levels, or decibel levels. The table provides a basis to evaluate how off-site receptors are affected by changes in noise levels.

Table 3 **Human Reaction to Increases in Sound Pressure Level (dB)**	
Increase in Sound Pressure (dB)	**Human Reaction**
Under 5	Unnoticed to tolerable
5 - 10	Intrusive
10 - 15	Very noticeable
15 - 20	Objectionable
Over 20	Very objectionable to intolerable
Source: *NYSDEC Assessing and Mitigating Noise, 2001 (taken from Down and Stocks - 1978)*	

According to the NYS Department of Environmental Conservation (NYSDEC) *Assessing and Mitigating Noise Impacts* (Rev. 2001), the goal for any permitted operation should be to minimize increases in sound pressure level above ambient levels at the chosen point of sound reception. "Increases" [in sound pressure level above ambient levels at receptors] ranging from 0-3 dBA should have no appreciable effect on receptors. Increases from 3-6 dBA may have potential for adverse noise impact only in cases where the most sensitive receptors are present." Sensitive refers to schools, hospitals, religious institutions, and the like.

Noise Standards

Town of Warwick Code

The Town of Warwick Code has a noise ordinance in Chapter 100A Noise. The intent of the ordinance is "to prevent unreasonable loud and disturbing noises as they are deemed to be detrimental to the life, welfare, and good order of the people of Warwick" (Town Code Section 100A-1, Legislative intent).

Section 100A-3 **Prohibited Noises** of the code indicates:

*"*The following acts are declared to be examples of loud, raucous, disturbing and unnecessary noises when any such noise exceeds 75 dBA at the adjoining property line or is of such a manner or with such volume as to be plainly audible inside any residence, school or building by those who are not voluntary listeners, thereto or at any time with louder volume than is necessary for the convenient hearing of voluntary listeners thereto in the place, room, or vehicle in which such should producing device is operational and are prohibited*".*

Some prohibited noise under Section 100A-3(A) are:

A: The operation of any sound-producing device in such a manner or with such volume **as to be plainly audible inside any residence** [emphasis added] between the hours of 11:00 p.m. and 7:00 a.m. at a distance of greater than 50 feet from the sound-producing device. Other examples

of prohibited noise are provided in Section 100A-3, but each is impermissible only if it creates plainly audible loud and raucous noise within a residence.

Some permitted noise under Section 100A-5 includes:

" Any sound expressly permitted and approved under Chapter 164 of the Town of Warwick Code, entitled 'Zoning'".

In effect, Section 100A-5 provides for permitted noises without conditions or restrictions, such as no sound beyond the property line, or under 100A-5(E), there being permitted any sound under Chapter 164 of the Town of Warwick Code. Said otherwise, Section 100A-5 lists specified permitted noises that are "as of right" and presumably are approvable without a noise study or other condition.

Chapter 164, Article IV Section 164-48 Performance Standards, C(3) Noise, provides performance standards by any use or facility other than transportation facilities. The Town Code Performance Standards are intended (i) to avoid "dangerous and objectionable elements" or (ii) to [avoid] "adversely affect[ing] the reasonable use of the surrounding area or adjoining premises". The Performance Standards provide specific standards on noise, vibration, odors, and glare, among others.

The Town Code Noise Performance Standard lists octave band ranges and maximum sound pressure levels developed or used in 1944 and 1953, but provides few definitions, context, or references. The Code performance standards are outdated and not consistent with current noise regulations.

For emphasis, HMMH, the acoustics expert retained by U.S. Lumber, has reviewed the Performance Standards for noise in detail and has provided an assessment of the technical provisions of the Code (see attached letter). HMMH is a national consulting firm specializing in the assessment of noise and vibration for transportation and other projects.

Specifically, and additionally, the problems with the Code that make it unworkable, Section 164-48(C)(3), Noise, include:

1) The Town Code Noise Performance Standard indicates the sound pressure level shall be measured with a sound level meter and associated octave band analyzer conforming to the standards prescribed by the American Standards Association. The Performance Standards indicate that a specific 1944 standard for sound level meters and the 1953 specifications for an octave band filter set "shall be used" (emphasis added).

   The referenced electronic radio tube technology cannot be used or reasonably replicated. Current noise monitoring meters, including: microphones, equipment sensitivity, and current, modern digital data capture sound more accurately because analysis has vastly improved over 1940's and 1950's technology.

2) The octave band analyzer standards were developed in 1953 and represent an outdated set of frequency bands that are no longer used by current octave band analyzers. Because the octave band standards on which the permissible sound limits are based are outdated and the ranges very broad, the Town of Warwick performance standards are effectively unenforceable or impossible to comply with.

At the least, this section of the Code, to provide the Planning Board with accurate and modern information, would need to be deleted, amended, possibly subject to a grant of waiver, or brought current consistent with the present standards of acoustics science, or otherwise addressed by the Town.

Federal Noise Guidance

The United States Department of Housing and Urban Development (HUD) has adopted exterior noise goals for determining acceptability of federally assisted projects (24 CFR Part 51 – Environmental Criteria and Standards). According to section 51.101B(8*)*: "It is a HUD goal that exterior noise levels do not exceed a day-night average sound level of 55 decibels. This level is recommended by the EPA as a goal for outdoors in residential areas. The levels recommended by EPA are not standards and do not take into account cost or feasibility. For the purposes of this regulation and to meet other program objectives, sites with a day-night average sound level of 65 and below are acceptable and allowable*".*

The federal noise criteria, are provided here for reference and comparison to the noise study results conducted by U.S. Lumber.

New York State DEC Guidance

The NYSDEC publication *Assessing and Mitigating Noise Impacts (Rev. Feb. 2, 2001),* does not provide specific noise criteria for residential settings but does reference EPA's "Protective Noise Levels" of 55 dBA as sufficient to protect human health. The NYSDEC noise document provides guidance for assessing noise impacts and the recommendations are used and referenced in this noise study.

Noise Study Scope of Work

The Town's noise study scope of work was provided by the Planning Board's consultant Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR), in a memo dated September 23, 2023 (see attached).

The noise assessment was designed to collect noise measurements over a 7-day period to provide a baseline of ambient conditions, both with US Lumber operations and without activity in the lumber yard. A key component of the study was to conduct a test of truck transfer (including loading and unloading of product) activity at the US Lumber facility during late-night periods on two (2) nights.

As indicated in the HDR memo, the goals of the noise study are to:

- Document the existing soundscape, including ambient noise, using noise measurements, including spectral measurements, and digital recorded audio.
- Store calibrated digital audio files throughout the measurement duration so stakeholders and the Planning Board members can hear what it sounds like before, during, and after the proposed activity occurs.
- Process the acoustical measurement data to show how the proposed activity,

including loading and unloading of product, affects the outdoor soundscape at residences, using text, tables, and graphs.

- Summarize the results of these activities in text, tables, and figures.
- Develop an understanding of the incremental increase in traffic volume, and heavy truck volume, on Kings Highway during the nighttime hours associated with the proposed activities.

The following methods were recommended to accomplish the goals:

1. Measure existing noise levels for a continuous 7-day period using LD831c environmental noise monitoring kits from Modal Shop.
2. Perform these measurements at the 3 closest residences to the project site, simultaneously.
3. Have the Applicant perform truck loading and off-loading activity on 2 of the 7 nights. This truck loading activity is referred to as the "test activity" in this report. Have the Applicant's consultants on-site to document the times and nature of specific loading activity and times when the trucks entered and departed the site.
4. Identify the volume and vehicle mix of traffic on Kings Highway during the nights when the noise measurements occur, highlighting the traffic volume and vehicle mix during the hours when the proposed activity occurs.

The HDR noise study scope of work recommendations included sound level meter set-up and settings and power supply. The noise study recommendations included the presentation of data including noise levels and audio files. It was recommended that there should be a comparison of noise metrics during the hours when the proposed on-site activities occurred (test activity) so stakeholders can see what noise levels are like with and without the proposed activities.

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Noise Study

In August, 2024 TMA collected noise measurements at the US Lumber facility to assess existing noise (ambient) conditions and noise from U.S. Lumber truck loading, unloading, and transfer activity including during nighttime hours. The noise study was conducted according to the scope of work recommended by HDR. As recommended by HDR, specialized noise meters were rented from the Modal Shop, of Cincinnati, Ohio. TMA coordinated with HDR and the Modal Shop in the set-up and in conducting the noise study.

Noise measurements were collected from Friday August 16, 2024 through Monday August 26, 2024. Not all noise meters collected data for the entire monitoring period, as described below. Noise monitoring locations are shown in **Figure 1** – Noise Study Location Map.

As noted above, the goal of the noise study was to monitor ambient (existing) noise conditions at noise receptor locations closest to the project site (three residences north of Kings Highway directly opposite the U.S. Lumber site) during periods of no activity at the US Lumber property and compare those ambient noise levels to when late-night operational activity occurs on-site at U.S. Lumber (test activity).

Neighboring residents on the north side of Kings Highway, across from the US Lumber property were asked to volunteer to have noise meters set-up on their property. In placing meters on resident property, both existing noise conditions, as well as noise from activity on the US Lumber property could be measured in real time. Noise monitoring equipment was set up on three properties.

Location 1: 4 4-Corners Road: Lot 33-1-9.311
Location 2: 1 4-Corners Road: Lot 87-2-9
Location 3: 7 Rolling Ridge Road: Lot 87-2-12

A noise meter and weather station were installed in a fourth location at the south side of the US Lumber property, with the goal of collecting noise measurements from the project site, in the vicinity of where loading activity was performed during late-night periods (test activity)(see **Figure 1**).

Noise measurements were collected using Model 831C noise monitoring kits from the Modal Shop. The meters were enclosed in weatherproof pelican cases to protect the instruments from weather and were powered with external batteries and solar panels. Microphones were mounted on tripods, approximately 5 feet above ground surface. The instruments were programmed to collect A-weighted and octave band sound pressure measurements on a continuous basis.

Noise monitoring periods are shown in **Table 4**, below. Noise measurements were collected continuously from Friday August 16, 2024 through Monday August 26 (approximately 10 days) at two off-site receptor locations: Location 1 and 2. The noise meter at Location 3 could not be calibrated at set-up and therefore, another meter was sent by the Modal Shop and installed at 7 Rolling Ridge Road Drive at approximately 11:00 p.m. on August 23, 2024. Therefore, measurements were collected at this location for approximately six days. The meter at the fourth location at the US Lumber property had a malfunction and therefore a Cassella 631 noise meter was installed on August 23 at 12:53 a.m. That meter was installed to capture the on-site noise from the loading activity on Friday August 23, 2024 (test activity).

Table 4
Noise Monitoring Periods

Location	Meter No.	Start Date	Time	End Date	Time
Loc. 1 4 4-Corners Rd.	10172	Aug. 16, 2024	15:00	Aug. 26, 2024	10:40
Loc. 2 1 4-Corners Rd.	12579	Aug. 16, 2024	15:56	Aug. 26, 2024	10:55
Loc. 3 7 Rolling Ridge Dr.	12527	Aug 20, 2024	23:07	Aug. 26, 2024	11:10
Loc. 4 US Lumber Property	Cassella	Aug 23, 2024	0:53	Aug. 26, 2024	12:03

Weather

Weather data was not collected on-site, but weather summaries were obtained from the NOAA climate data website (see attached). The temperature ranged from 84 degrees (F) during the daytime hours to 49 degrees (F) during early morning hours with weather ranging from sunny and clear conditions to cloudy and rain conditions, throughout the monitoring period. No noticeable wind occurred during the two late-night test periods and a wind shield was used on each noise instrument microphone.

Traffic Counts

Continuous traffic counts were collected for a seven-day period, from Thursday August 15, 2024 through Wednesday August 21, 2024, including the weekend period of August 17 and 18th. Traffic tube counters were placed directly east of the US Lumber main entrance, capturing the traffic passing the three residential receptor monitoring locations.

Figure 2 shows the 15-minute traffic volumes on Kings Highway from August 15 through August 21, a 7-day period that included a weekend. As shown in the Figure traffic volumes are highest in the 7:00 a.m. to 9:00 a.m. period and in the 3:00 p.m. 6:00 p.m. Volumes range from approximately 400 to 600 vehicles per hour in these peak periods. Traffic volumes are lowest in the 12:00 a.m. to 5:00 a.m. period as shown in **Figure 3.** Volumes during this generally range from 10 to 40 vehicles per hour.

During the August 21st. Truck Activity Test period 11 vehicles passed the site, including two trucks. Traffic data was not collected for the second Truck Activity test on August 23rd. Traffic data for the 1:00 a.m. to 2:00 a.m. test period is shown for three dates on **Table 4** – Test Period Traffic Volumes (see Attachments).

Truck Transfer Activity Test

Truck transfer activity and loading and unloading was done in the US Lumber yard on two nights to assess noise levels from loading, unloading, and trucks and forklifts moving through the yard, and this activities' potential impact on neighbors The activity totaled approximately 45 minutes each night, beginning at approximately 1:00 a.m. on Wednesday August 21 and on Friday August 23, 2024. TMA staff was on-site during the two truck transfer test periods to document exact times of all activity. The activity description logs and times are attached. The loading and transfer activity can be described as follows:

A full-sized flatbed truck and trailer was staged in the southern loading area (see **Figure 1**). Six pallets of lumber were staged near the truck to provide a typical load to transfer to the truck.

- At approximately 1:00 a.m. a forklift was started in an on-site eastern warehouse and driven westerly through the southern portion of the lumber yard to the loading area.
- The truck was loaded with a forklift and the attached back-up beeper was audible on-site as the six pallets were loaded on the truck. The forklift loaded material on both sides of the truck. The forklift was turned off.
- The pallets were strapped to the truck with straps and the straps were ratcheted to secure the load.
- The truck was started, idled for approximately 1-minute while safety systems were checked.
- The truck was moved from west to east through the lumber yard to the eastern warehouse, where the truck pulled into the warehouse and was turned off.
- After an approximately 10 minute period, the loaded truck was backed out into the yard, with the truck back-up beeper audible on-site.
- The truck drove east to west through the yard to the loading area and the truck turned off.
- The load of lumber was un-strapped, the forklift was started and the truck unloaded. Back-up beepers from the forklift were audible on-site as the six pallets were removed from the truck.

- The forklift was moved from the loading area from west to east through the project site to the eastern warehouse.
- The forklift was driven into the warehouse and turned off. Testing completed.

Noise Monitoring Results

Noise measurements were collected from Friday August 16, through August 26, 2024 at two residential locations (10 days), and from a third location from August 21 through August 26, 2024 (6 days). A meter malfunction resulted in a delay in the installation of the third meter.

Sound (noise) levels generally followed a consistent pattern over the monitoring period with noise being principally attributable to traffic along Kings Highway. As expected, noise levels at the three residential receptors were highest during morning and evening commuting periods generally 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., when traffic along Kings Highway was highest. During evening commuting periods (4:00 to 6:00 pm) noise levels ranged from approximately 61 dBA up to 70 dBA at Locations 1 and 3. Noise levels at Location 2 (1 4-Corners Road) were generally 5.0 to 7.0 dBA lower than the levels at Locations 1 and 3. This discrepancy may be due to topography, since Locations 1 and 3 have a clear line-of-sight to Kings Highway and therefore, noise from the highway was unobstructed. The highest hourly average was on August 21, 2024 during the 5:00 p.m. period (Location 3), at 70.14 dBA .

Noise levels from the highway traffic were lowest during nighttime periods generally between 1:00 and 5:00 a.m. Late night hourly-average measurements *generally* ranged from 38.0 dBA to 55.0 dBA at the three receptor locations. The lowest hourly average measurement was 37.6 on August 21, 2024 at Location 2, during the 3:00 a.m. period.

Audible recordings of ambient noise levels are provided to the Planning Board and its consultants as part of this report, which recordings further confirm that the ambient noise levels at the residential receptors are principally attributable to traffic along Kings Highway (see Attached).

Truck Transfer Test Monitoring Results

As described, truck transfer activity was conducted at the US Lumber yard at the approximately 1:00 a.m. to 2:00 a.m. period on August 21, and August 23, 2024. A TMA representative observed the loading, unloading, and truck and forklift movement activity and recorded the times of the activity. The noise meters were all calibrated to electronic time and date. **Table 5** (attached) shows *hourly* average noise levels at the residential receptors over the 12:00 a.m. to 3:00 a.m. period during the monitoring period (39 to 49 dBA on August 21 and 49.1 to 52.7 dBA on August 23, 2024).

August 21, 2024 Test

Table 6 – Truck Test Noise Graphs (attached) provides a graph of *one-minute* average noise levels for the two test dates August 21 and August 23 from 12:00 a.m. to 2:00 a.m. As shown in the graphs, noise levels during this period ranged from approximately 34.0 dBA to 57 dBA on August 21. This 23-dBA change in noise levels is attributed to non-US Lumber traffic on Kings Highway. The 2-hour average ambient noise level at the receptors was calculated at 43.9 dBA on August 21, 2024.

On August 21, the truck transfer test began at 12:58 a.m. with a forklift passing through the yard. The truck passed through the yard at approximately 1:15 to 1:17 and again at 1:27 to 1:29 a.m.

The forklift moved through the yard at 1:44 to 1:45 a.m. These times are shown in **Table 7** Truck Test Noise Graphs. **Table 8** – Truck Test Minute Summary provides noise levels (LeqA) for each one minute during the test.

One-minute average noise levels ranged from approximately 34.0 to 57.0 dBA at the residential receptors prior to, during and after the 45-minute truck transfer test that occurred between 1:00 a.m. and 1:45 a.m. (see **Table 7**). The noise from the on-site truck activity was not clearly audible in the audio files, except for the truck moving through the yard (the electronic audio files are enclosed). That sound was audible as a truck in the distance, but at a level similar to or less than traffic passing on Kings Highway.

August 23, 2024 Test

On August 23, 2024 a Casella noise meter was installed 10 minutes prior to the testing period, approximately 60 feet from the staged loading area. This meter captured the noise levels close to the loading activity and then ran during the remainder of the testing period, until August 26, 2024. The noise levels measured by the on-site Casella meter are shown in yellow on **Table 7**.

The noise graph for the 12:00 a.m. to 2:00 a.m. period show one-minute average noise levels ranging from approximately 37.0 to 64.0 dBA. Peaks in noise levels above 60 dBA were measured at 12:25 p.m. and at 1:40 p.m., prior to and immediately after the truck transfer test period, attributed to highway traffic noise. The 2-hour average ambient noise level at the receptors was calculated at 47.8 dBA (see **Table 7**).

On August 23, the truck transfer test began at approximately 1:00 a.m. with a forklift passing through the yard. As shown in **Table 7**, the truck moved through the yard between approximately 1:15 and 1:17 a.m. and again at 1:25 and 1:28 a.m. The forklift moved through the yard at 1:38 to 1:39 a.m. The truck movements are captured by the on-site noise meters with levels 60 and 62 dBA on-site. The forklift movements at 1:00 and 1:39 am were not clearly audible at off-site receptors (electronic audio files are attached). The truck movements at 1:15 and 1:25 a.m. were audible as a truck in the distance, but at a level similar to or less than traffic passing on Kings Highway.

Peak one-minute noise levels in the US Lumber yard were measured generally between 55.0 and 60.0 dBA with the highest measurements at 62.0 dBA. Off-site receptor peak one-minute noise levels were generally between 50.0 and 55.0 dBA with the highest one-minute measurement of 55.5 dBA during the testing period, an imperceptible dBA level above 55 dBA.

Based on the truck transfer test, the nighttime activity at the project site does not result in any unreasonable, loud, or annoying noise at any residential receptors. Noise inside the associated residences is further reduced by another 5 to 15 dBA due to the residence envelope and depending on whether the residence windows are opened or closed.

Conclusions

The noise assessment was conducted to collect noise measurements over a 7-day period (unless otherwise noted due to machine malfunction) to provide a baseline of ambient conditions, with US Lumber operations and without activity in the lumber transport yard. A key component of the study was to conduct a test of truck transfer activity at the US Lumber facility during late-night periods on two (2) nights. The noise study was conducted according to the scope of work recommended by HDR, the Planning Board's noise consultant.

Sound (noise) levels were generally consistent over the monitoring period. As expected, noise levels at the three residential receptors were highest during morning and evening commuting periods generally 8:00 to 10:00 a.m. and 4:00 to 6:00 p.m., when traffic along Kings Highway was highest. During evening commuting periods noise levels ranged from approximately 61 dBA up to 70 dBA.

Hourly average noise levels were lowest during nighttime periods generally between 1:00 and 5:00 p.m. Nighttime measurements generally ranged from 38.0 dBA to 55.0 dBA.

The truck transfer test activity was conducted at the US Lumber yard at the 1:00 a.m. to 2:00 a.m. period on August 21, and August 23, 2024. A TMA representative observed the loading, unloading and truck and forklift movement activity and recorded the times of the activity.

Off-site receptor peak one-minute noise levels during the test period were generally between 50.0 and 55.0 dBA with the highest one-minute measurement of 55.5 dBA, an imperceptible dBA level above 55 dBA. While traffic volumes are comparatively low in this late-night period, the occasional passage of vehicles results in peaks in noise levels at the residential receptors near Kings Highway.

Noise levels at the receptors during the truck test period (1:00 a.m. to 2:00 a.m.) were compared to activity on the site at specific times. A noise meter on the U.S. Lumber property collected measurements during one test period on August 23, 2024. The measured on-site noise levels from loading, unloading, and truck and forklift activity coincided with activity logs. The on-site truck transfer activity such as truck and forklift movement did not result in noise levels above the ambient peak noise levels, which are dominated by traffic on Kings Highway.

No noise levels above 55.5 dBA were observed at the resident receptor locations *during the truck transfer test period*. This level is at or indiscernibly higher than the 55 decibel exterior noise goal for exterior uses established by DEC, HUD and the EPA (see discussion above). Noise inside each affected residence is further reduced by another 5 to 15 dBA attributable to the residence envelope.

Please advise if you require any further information.

Sincerely,

Jon P. Dahlgren

Senior Environmental Geologist
TIM MILLER ASSOCIATES, INC.

Attachments and Tables

US Lumber Noise Assessment

Table of Contents for Attachments

Note: The enclosed audio files are one-hour periods, identified by date and by noise meter number (see Table 4 for Locations). Measurement Period 1: 12:00 a.m. to 12:59 a.m. Measurement Period 2: 1:00 a.m. to 1:59 a.m.

Attachment A
Correspondence and Background

Memo

Date: Wednesday, November 15, 2023

Project: Town of Warwick: US Lumber

To: Ben Astorino, Planning Board Chairman

From: Tim Casey, INCE (HDR)

Subject: Noise Study Scope of Work

Here are my recommendations for the noise study we discussed.

The goals of the noise study are to:

1. Document the existing soundscape using noise measurements, including spectral measurements, and digital recorded audio.
2. Store calibrated digital audio files throughout the measurement duration so stakeholders and the Planning Commission staff can hear what it sounds like before, during, and after the proposed activity occurs. These can be compressed files, they don't have to be *.wav files (which take up a lot of internal data storage space).
3. Process the acoustical measurement data to show how the proposed activity affects the outdoor soundscape at residences, using text, tables, and graphs. Waterfall graphs may be helpful to show how the soundscape changed before, during, and after the proposed activity occurred.
4. Summarize the results of these activities in text, tables, and figures.
5. Develop an understanding of the incremental increase in traffic volume, and heavy truck volume, on Kings Highway during the nighttime hours associated with the proposed activities.

To accomplish these goals, I recommend the Applicant:

1. Measure existing noise levels for a continuous 7-day period using LD831c environmental noise monitoring kits from Modal Shop. Periods of high wind speeds will contaminate the measurement results, so I also recommend using a Vaisala digital weather station with at least one kit so periods of high wind can be removed from the data if needed.
2. Perform these measurements at 3 residences, simultaneously.

3. Have the Applicant perform the proposed activity on 2 of the 7 nights, and have one of the Applicant's consultants on-site to document when the trucks entered and departed the site.
4. Identify the volume and vehicle mix of traffic on Kings Highway during the nights when the noise measurements occur, highlighting the traffic volume and vehicle mix during the hours when the proposed activity occurs.

The sound level meter/real-time analyzer should be configured to store:

1. Spectral time history, with a 1 second sample rate.
2. Store hourly measurement summaries.
3. L10, L50, L90, Lmin, Lmax (all in dBA)
4. Continuously record compressed digital audio files and store them every hour.
5. Store the Vaisala weather station data in the sound level meter.
6. Make sure the clock on the sound level meters shows the correct local time, and make sure all of the sound level meters show the same time (synch them to the same PC/Laptop) while setting them up.

In order to continuously store acoustical measurements, continuously recorded audio, and power the digital weather station, the power supply in the Pelican cases may have to be supplemented with an additional external battery or solar panels. Modal Shop can assist with the configuration of the measurement system and power supply. I recommend a supplemental external battery in a second Pelican case rather than solar panels.

The noise measurement results should be graphed and the hours in which the proposed activities occurred should be highlighted. There should be a comparison of noise metrics during the hours when the proposed activities occurred so stakeholders can see what noise levels are like with and without the proposed activities. This can be graphed.

The noise measurement results should be further processed as needed to isolate when the proposed activities occurred, so stakeholders can see how the proposed activities influenced the ambient soundscape at the measurement locations. It may be prudent to discuss how measurement results will be processed with Town of Warwick and their environmental noise consultant. The audio files should be edited so stakeholders can listen to what it sounded like before, during and after the proposed activities occurred.

These activities and their results should be documented in a report that is submitted to Town of Warwick.

Here is sample text to explain the study to residents, and request permission to perform the unattended noise measurements on their property.

To the Residents of the Town of Warwick

US Lumber wants to be able to receive shipments of lumber 24 hours per day, seven days per week in order to meet customer demands and accommodate the supplier shipment schedules. This includes lumber deliveries, but no unloading, during nighttime hours. Trucks arriving on-site during nighttime hours will drop off their loaded trailers and pickup unloaded trailers. These trucks will enter and depart the US Lumber parcel along the southeast side of their parcel, and the buildings on-site will block some of the noise created by these activities. Lumber will be unloaded and stored during daytime hours.

To address concerns about noise from the proposed nighttime lumber deliveries, US Lumber hired consultants to perform a noise study. The noise study will measure noise levels continuously for a seven day period at three residences close to US Lumber. The sound level meters will also continuously record and store digital audio files. On two of the seven nights, US Lumber will receive a lumber delivery. The delivery trucks will drop off loaded trailers, pick up empty trailers, and leave the site.

The noise measurement results, and recorded audio files provide Town of Warwick with a record of measured noise levels before, during, and after the lumber delivery, and also allow Town of Warwick to hear what that delivery sounds like at the three homes where the noise measurements occurred.

The noise study will also document the vehicle volume and classifications of vehicles driving on Kings Highway during nighttime hours.

Town of Warwick requests your permission to measure noise levels on your property for a continuous seven days. The equipment consists of one or two Pelican cases that will be placed no closer than 20 feet from the outside wall of your home. US Lumber's consultants may perform equipment inspections throughout the week, but the measurements will occur without an attendant present.

Please signify your approval to allow the noise study to be performed on your property... (how do you want them to do this? Sign and return a form, call Town of Warwick and provide verbal approval, etc.?)

11 W. 42nd Street, 2nd Floor
New York, NY 10036
781.229.0707
www.hmmh.com

TECHNICAL MEMORANDUM

To:	Jon Dahlgren, Tim Miller Associates, Inc.
From:	Dayna Bowen
	Christopher Menge
Date:	September 24, 2025
Subject:	Town of Warwick, NY Noise Code and Performance Standards Review
Reference:	HMMH Project Number 25-0311

Harris Miller Miller and Hanson Inc. (HMMH) conducted a review of the Town of Warwick, New York (NY) noise performance standards and township noise ordinance. The following provides our evaluation of the standards and ordinance.

1.0 Noise Performance Standards and Ordinance Review

1.1 Noise Performance Standards

The zoning standards, codified under the Town of Warwick, NY, Part II General Legislation, Chapter 164 Zoning, are intended to "implement the Town's planning goals and objectives" and were adopted to "promote and protect…the general welfare" of the public. Zoning performance standards are established under Article IV which include maximum permissible sound level limits at the property line of the facility or use from which the noise source is emanating. The permissible limits are established for three very broad octave band ranges for smooth, continuous noise sources between 10:00 PM and 7:00 AM. **Table 1** summarizes the permissible limits.

Table 1. Town of Warwick, NY Zoning Performance Standards

Octave Band Range (cycles per second)	Sound Pressure Level (decibels re: 0.0002 dyne/cm^2)
20 to 300	60
300 to 2,400	40
Above 2,400	30

Source: Town of Warwick, NY, Part II General Legislation. Chapter 164. Zoning, Article IV. Regulations, § 164-48. Performance Standards.

The performance standards require compliance to be determined with an octave band analyzer conforming to the *American Standard Specifications for an Octave Band Filter Set for the Analysis of Noise and Other Sounds, Z24, 10-1953, American Standards Association, Inc., New York, New York*. These octave band analyzer standards were developed by the American Standards Association (ASA) in 1953 and represent an outdated set of frequency bands that are no longer used by current octave band analyzers. **Table 2** summarizes the 1953 octave bands.

Table 2. American Standards Association Z24.10-1953 Octave Bands

Center Frequency (Hz)	Lower Cutoff Frequency (Hz)	Upper Cutoff Frequency (Hz)
75	53	106
150	106	212
300	212	425
600	425	850
1200	850	1700
2400	1700	3400
4800	3400	6800
9600	6800	13600

Definitions:
Hz = Hertz in cycles per second.
Source: American Standards Association Z24.10-1953.

In 1960, these standards were updated by the International Organization for Standardization (ISO) and the American National Standards Institute (ANSI). The octave bands were adjusted to new center frequencies and octave band ranges (i.e., the range covers the center frequency and an upper and lower cutoff frequency above and below the octave band center frequency, respectively) that are used today by current octave band analyzers.

The octave band ranges shown in **Table 1** are very broad ranges of the outdated octave bands shown in **Table 2** used by early octave band analyzers (i.e., circa 1953). Because the octave band standards on which the permissible limits are based are outdated and the ranges are very broad, the Town of Warwick, NY performance standards are effectively unenforceable.

1.2 Town of Warwick, NY Noise Ordinance

In addition to the zoning performance standards, the Town Board of the Town of Warwick, NY adopted a noise ordinance in March 2009 (Local Law No. 2-2009) codified under Chapter 100A of the Town's General Legislation.[1] The noise ordinance prohibits certain noise sources, which are deemed 'loud, raucous, disturbing and unnecessary' when these noise sources exceed 75 dBA at the adjoining property line. Prohibited noise sources are detailed under §100A-3 of the noise ordinance.

While the noise ordinance provides a reasonable permissible sound level limit during daytime hours, it fails to define the noise metric on which the permissible limit is based, such as maximum level, average level, or median level. The ordinance also does not define the manner in which measurements shall be conducted to determine compliance, including the measurement duration. Since the noise ordinance lacks critical information, it is difficult to enforce.

[1] https://ecode360.com/13558204#13558240

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Local Climatological Data
Daily Summary
August 2024

Generated on 02/04/2025

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 355 ft. Lat: 41.5091° N Lon: 74.2646° W

Station: **MONTGOMERY ORANGE CO AIRPORT, NY US WBAN:04789 (ICAO:KMGJ)**

Date	Temperature (F)							Degree Days (base 65F)		Sun (LST)		Weather	Precipitation (in)			Pressure (inHg)		Wind	Maximum Wind Speed = MPH / Direction = Degrees			
	Max	Min	Avg	Dep	ARH	ADP	AWB	Heat	Cool	Rise	Set	Weather Type	TLC	Snow Fall	Snow Depth	Avg Stn	Avg SL	Avg Speed	Peak Speed	Peak Dir	Sust. Speed	Sust. Dir
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	91*	66	79	7.1				0	14	0452	1914	BR				29.54		4.5	21	250	13	250
02	87	67	77	5.1				0	12	0453	1912	TS RA BR	T			29.49		3.3	30	260	21	280
03	87	70	79	7.1				0	14	0454	1911	TS RA FG BR				29.43		4.9	21	190	16	180
04	83	68	76	4.2				0	11	0455	1910	TS RA BR				29.49		5.0	19	300	14	310
05	87	64	76	4.2				0	11	0456	1909	RA BR				29.59		3.8	22	230	15	220
06	83	65	74	2.3				0	9	0457	1908	RA BR				29.55		6.9	23	010	18	020
07	67	62	65	-6.7				0	0	0458	1906	RA BR	1.28			29.59		6.6	22	030	15	030
08	67	63	65	-6.6				0	0	0459	1905	RA BR	0.31			29.70		5.8	14	050	10	050
09	82	66	74	2.4				0	9	0500	1904	TS RA FG BR	1.76			29.47		9.4	41	160	24	180
10	83	60	72	0.5				0	7	0501	1902		T			29.50		4.8	22	300	15	270
11	80	55	68	-3.4				0	3	0502	1901		T			29.58		5.2	20	210	15	210
12	78	54	66	-5.4				0	1	0503	1900		T			29.57		5.8	29	310	17	340
13	81	56	69	-2.3				0	4	0505	1858		0.00			29.62		3.4	15	300	12	310
14	84	55	70	-1.2				0	5	0506	1857	TS RA BR	0.22			29.67		1.8	31	060	24	170
15	84	54	69	-2.1				0	4	0507	1855	TS RA FG BR	0.16			29.65		2.7	36	320	25	320
16	84	58	71	0.0				0	6	0508	1854	RA FG BR	T			29.64		1.1	10	230	7	160
17	81	64	73	2.1				0	8	0509	1853	RA BR HZ	0.01			29.59		5.1	23	160	16	170
18	79	66	73	2.3				0	8	0510	1851	TS RA BR	0.55			29.44		4.2	20	070	16	070
19	81	63	72	1.4				0	7	0511	1850	TS RA	0.04			29.31		5.8	26	320	17	300
20	69	54	62	-8.5				3	0	0512	1848		0.00			29.49		9.9	23	330	17	350
21	71	49	60	-10.3				5	0	0513	1847		0.03			29.63		7.2	27	310	20	300
22	74	49*	62	-8.1				3	0	0514	1845		0.00			29.75		5.6	23	350	16	340
23	79	50	65	-5.0				0	0	0515	1843		0.00			29.85		3.6	15	240	10	190
24	80	52	66	-3.8				0	1	0516	1842	BR	T			29.84		1.2	16	200	13	210
25	84	54	69	-0.6				0	4	0517	1840	RA BR	T			29.80		2.5	17	210	12	020
26	84	58	71	1.7				0	6	0518	1839	TS RA FG BR	T			29.75		1.6	21	320	15	310
27	83	59	71	1.9				0	6	0519	1837	RA FG BR	T			29.69		1.4	12	240	8	160
28	89	66	78	9.1				0	13	0520	1835		0.00			29.56		5.8	20	330	14	320
29	75	64	70	1.4				0	5	0521	1834	TS RA BR	0.26			29.80		5.9	17	050	13	030
30	70	60	65	-3.4				0	0	0522	1832	RA BR	0.41			29.86		2.5	12	070	10	080
31	76	62	69	0.9				0	4	0523	1831	RA	T			29.69		3.4	14	230	10	220
	80.1	59.8	70.0							Monthly Averages | Totals			5.03			29.62	30.01	4.5				
	-1.9	0.8	-0.5	Departure from Normal (1981-2010)									1.03s									

Degree Days

	Monthly		Season-to-date	
	Total	Departure	Total	Departure
Heating	13	0	13	
Cooling	166	-17	639	

Number of days with...

	Temperature				Precipitation		Snow	Weather	
	Max		Min						
	>=90°	<=32°	<=32°	<=0°	>=0.01"	>=0.1"	>=1"	T-Storms	Heavy Fog
Heating									
Cooling	1	0	0	0	10s	7s		3	1

Date of 5-sec to 3-sec wind equipment change

2009-07-15

Sea Level Pressure

		Date	Time
Maximum	30.31	23	0917
Minimum	29.62	19	1457

Greatest...

24-Hr...		Snow Depth
Precip	Snowfall	
1.76		
Date		
09-09		

Station Augmentation

Name:N/A Lat: N/A Lon: N/A Elevation: N/A Distance: N/A Elements: N/A Equipment: N/A

Truck Test Activity Log – US Lumber

Wednesday 8/21/24

12:58:00 AM Start forklift in East warehouse, travel to loading area

12:59:30 Forklift at loading area

1:00:45 Backup beeper

1:02:07 “”

1:03:20 “”

1:04:30 “”

1:05:30 “”

1:05:50 Scraping metal

1:06:20 Backup beeper

1:07:05 Forklift off

1:07:53 Metal straps

1:08:40 “”

1:09:43 “”

1:10:20 “”

1:10:50 “”

1:12:20 Tighten straps

1:12:55 Car on Kings Hwy

1:14:32 Truck start

1:15:30 Moving truck

1:16:25 Truck pass office aisle

1:17:00 Truck pull into warehouse

-BREAK-

1:27:23 Truck start

1:27:30 Truck backup beeper

1:28:40 Truck backup beeper stop

1:28:45 Truck moving through yard

1:29:13 Truck off - airbrakes

1:32:00 Metal drop

1:32:20 “”

1:32:42 “”

1:32:52 “”

1:34:55 Winch strap

1:36:23 Start forklift

1:37:19 Forklift Backup beeper

1:38:34 “”

1:39:20 “”

1:40:02 to 1:42:05 Backup beeper

1:43:45 Forklift moving through yard

1:44:50 Forklift in warehouse

END

Truck Test Activity Log – US Lumber

Friday 8/23/24

1:00:10 AM Forklift start

1:01:15 Forklift in loading area

1:02:14 Forklift Backup beeper

1:03:13 “”

1:03:58 “”

1:04:56 “”

1:05:55 “”

1:06:55 “”

1:07:32 Forklift off

1:09:45 Pulling strap

1:10:00 Metal straps

1:10:24 “”

1:11:15 “”

1:12:40 Tighten straps

1:13:25 Tighten straps

1:14:24 Truck start

1:14:47 Truck move through yard

1:16:00 Truck passes office aisle

1:16:50 Truck air brakes in warehouse

-BREAK-

1:25:03 Truck start

1:25:20 Truck backup beeper

1:26:05 Beeper stop, truck moving through yard

1:27:40 Air brakes, truck off

1:29:30 Strap clank

1:30:00 Strap clank

1:30:40 Wind strap

1:30:55 “‘

1:31:05 “”

1:31:25 “”

1:31:55 “”

1:32:20 “”

1:32:50 Start forklift

1:33:42 Forklift backup beeper

1:34:17 “”

1:34:27 “”

1:34:55 “”

1:35:48 “”

1:36:33 “”

1:36:55 “”

1:37:21 “”

1:37:50 “”

1:38:25 Forklift through yard

1:39:10 Pass office aisle

1:39:35 Forklift in warehouse

END

Attachment B
Noise Data Tables

Table 5
Truck Test Period Traffic Volumes
US Lumber - Kings Highway

Date	15 Minutes Starting	Vehicles Eastbound	Vehicles Westbound	Vehicles **Total**
08/19/2024	01:00 AM	4	3	7
08/19/2024	01:15 AM	2	0	2
08/19/2024	01:30 AM	1	0	1
08/19/2024	01:45 AM	0	2	2
	total	7*	5*	**12**
08/20/2024	01:00 AM	1	2	3
08/20/2024	01:15 AM	0	3	3
08/20/2024	01:30 AM	1	2	3
08/20/2024	01:45 AM	1	1	2
	total	3*	8***	**11**
08/21/2024	01:00 AM	2	2	4
08/21/2024	01:15 AM	2	3	5
08/21/2024	01:30 AM	0	1	1
08/21/2024	01:45 AM	1	0	1
	total	5*	6**	**11**

*No trucks
** One truck
*** Two trucks

Table 6
Hourly Average Noise Levels August 16 to August 26, 2024

	Hourly Average Laeq							
	8/16/2024				8/17/2024			
Hour	10172	12579	12527	Casella	10172	12579	12527	Casella
0:00					59.13	56.77		
1:00					58.57	56.47		
2:00					57.66	55.91		
3:00					56.42	54.73		
4:00					55.04	52.95		
5:00					52.64	48.77		
6:00					54.26	48.20		
7:00					58.81	50.85		
8:00					60.57	70.11		
9:00					63.83	67.57		
10:00					60.35	57.14		
11:00					60.68	56.56		
12:00					60.87	54.17		
13:00					61.81	53.80		
14:00					62.30	54.28		
15:00	62.07	61.49			60.86	53.39		
16:00	62.14	54.74			64.55	55.91		
17:00	62.57	55.00			59.56	52.19		
18:00	61.41	56.41			59.93	51.98		
19:00	61.07	53.89			59.51	51.79		
20:00	65.75	58.72			60.28	56.49		
21:00	66.54	59.43			59.55	57.06		
22:00	60.97	58.09			59.00	56.59		
23:00	59.95	57.37			57.83	56.11		

	Average Laeq							
	8/18/2024				8/19/2024			
Hour	10172	12579	12527	Casella	10172	12579	12527	Casella
0:00	56.41	55.37			55.22	52.37		
1:00	56.58	55.35			53.74	52.07		
2:00	55.37	55.06			52.93	50.73		
3:00	54.40	54.37			52.61	50.09		
4:00	53.35	52.92			52.22	49.05		
5:00	51.95	48.65			55.12	49.21		
6:00	54.01	48.88			60.37	51.68		
7:00	55.88	49.62			61.93	54.32		
8:00	57.86	50.32			62.13	54.04		
9:00	59.88	52.24			61.57	53.74		
10:00	60.42	52.41			60.51	53.47		
11:00	61.30	53.26			61.38	56.26		
12:00	60.63	53.37			60.65	54.12		
13:00	61.00	54.13			59.50	53.10		
14:00	59.86	52.74			59.97	53.39		
15:00	61.13	54.58			61.92	57.79		
16:00	59.89	52.90			62.96	56.10		
17:00	59.98	53.68			61.39	53.87		
18:00	61.76	58.16			61.54	53.35		
19:00	61.36	56.17			58.95	52.11		
20:00	60.38	56.69			59.18	56.49		
21:00	58.89	55.46			59.86	56.68		
22:00	57.35	54.58			58.22	55.48		
23:00	56.75	54.55			56.57	54.42		

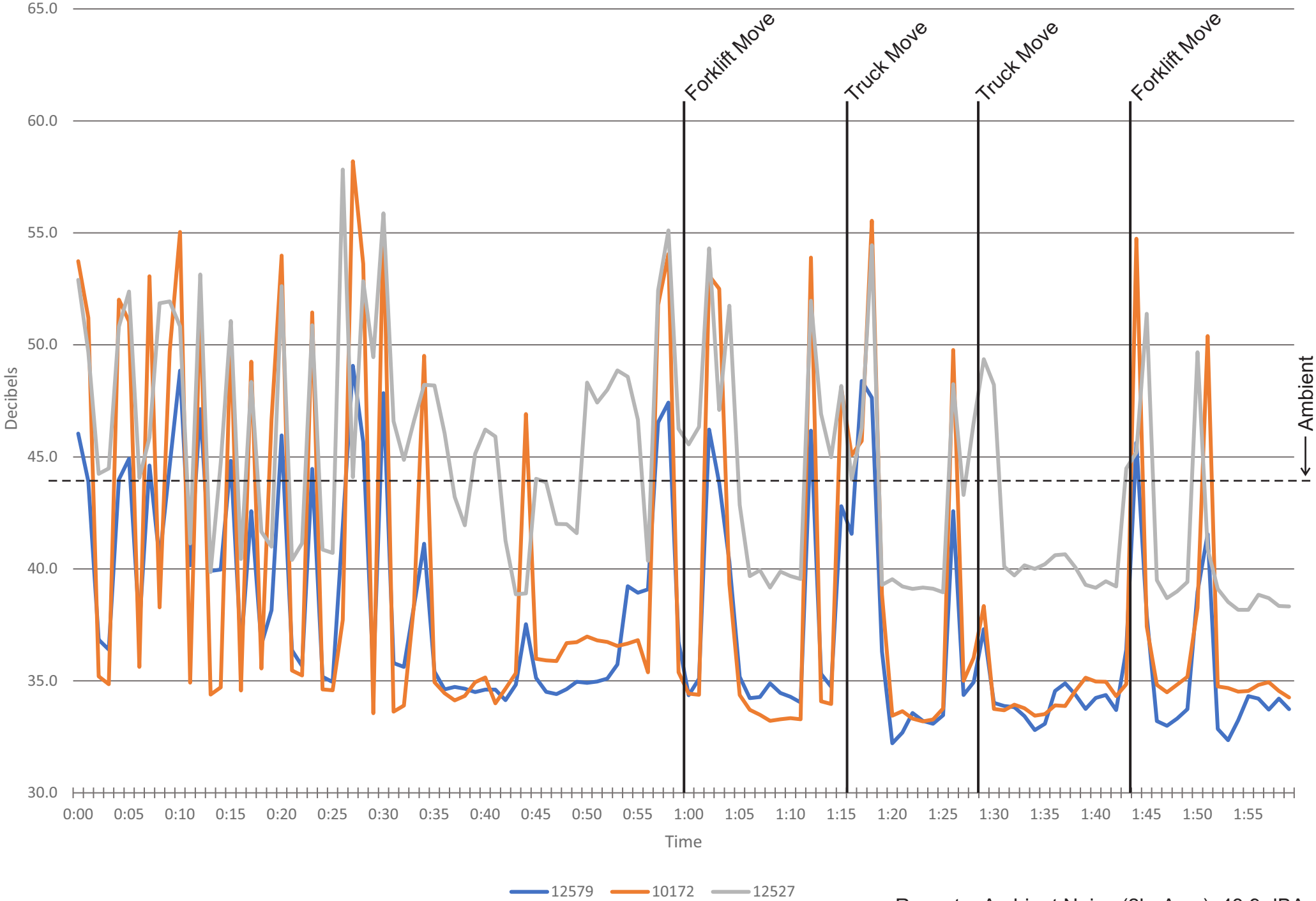
	Average Laeq							
	8/20/2024				8/21/2024			
Hour	10172	12579	12527	Casella	10172	12579	12527	Casella
0:00	54.99	53.23			48.25	41.87	49.01	
1:00	53.81	51.37			44.71	39.07	45.46	
2:00	50.04	48.02			47.26	40.41	47.57	
3:00	48.28	45.06			44.80	37.60	45.13	
4:00	50.34	45.42			53.15	45.83	51.92	
5:00	54.21	47.26			54.58	47.35	53.94	
6:00	57.30	50.15			58.46	50.72	57.30	
7:00	60.58	53.40			60.85	53.51	59.84	
8:00	60.81	53.61			61.29	53.71	60.82	
9:00	60.62	53.88			61.22	54.37	60.77	
10:00	60.81	54.07			60.32	52.99	60.13	
11:00	59.79	53.73			59.75	52.55	59.81	
12:00	60.14	53.46			60.52	55.35	61.03	
13:00	59.33	53.36			61.06	56.07	61.82	
14:00	59.47	52.84			62.09	56.70	61.91	
15:00	60.97	54.78			65.84	57.81	64.72	
16:00	62.37	54.68			65.24	54.20	61.03	
17:00	61.10	53.73			67.71	55.32	70.14	
18:00	60.14	53.36			64.42	53.02	63.16	
19:00	59.92	52.94			59.84	52.93	59.39	
20:00	57.71	51.67			61.32	53.96	58.94	
21:00	55.96	50.33			55.97	51.04	56.85	
22:00	52.96	47.09			54.54	48.51	54.31	
23:00	50.66	44.63	51.37		52.31	46.60	53.08	

	Average Laeq							
	8/22/2024				8/23/2024			
Hour	10172	12579	12527	Casella	10172	12579	12527	Casella
0:00	46.70	41.20	48.09		52.69	47.62	51.82	47.26
1:00	48.93	45.19	49.11		48.60	42.71	49.56	51.05
2:00	44.82	38.52	45.66		49.60	41.91	48.27	35.77
3:00	48.00	42.10	48.09		46.86	40.14	52.18	33.30
4:00	49.40	42.77	49.62		55.15	45.85	49.77	45.13
5:00	56.07	48.45	53.87		54.09	46.70	53.69	40.05
6:00	59.73	50.93	57.19		57.63	50.17	56.71	46.87
7:00	61.47	53.89	60.48		60.76	52.94	59.46	53.05
8:00	61.85	54.87	61.10		61.06	53.98	60.01	55.25
9:00	62.13	54.48	60.57		60.46	53.45	60.06	50.54
10:00	61.13	53.96	60.70		60.14	53.24	60.64	51.11
11:00	60.80	53.98	60.65		60.04	53.22	59.74	53.08
12:00	60.67	53.94	60.95		60.99	53.80	60.45	54.32
13:00	61.98	56.44	61.09		60.46	56.24	60.27	51.79
14:00	60.86	54.92	60.55		59.90	53.73	60.36	53.74
15:00	61.11	54.11	60.63		61.53	55.17	61.19	51.43
16:00	62.25	54.64	60.92		60.64	54.30	60.54	56.50
17:00	61.27	54.09	60.97		60.65	56.83	60.48	57.03
18:00	60.51	54.12	60.16		60.55	53.79	60.27	47.23
19:00	61.08	55.66	59.78		60.08	53.81	59.65	43.99
20:00	59.17	55.58	59.13		60.25	57.27	60.45	47.52
21:00	58.27	54.94	57.65		58.93	56.13	59.34	47.00
22:00	56.05	53.65	55.80		62.14	55.39	59.44	46.13
23:00	54.86	51.74	54.47		55.82	52.40	56.14	43.41

	Average Laeq							
	8/24/2024				8/25/2024			
Hour	10172	12579	12527	Casella	10172	12579	12527	Casella
0:00	53.52	50.21	54.37	41.88	56.00	53.52	56.25	44.20
1:00	51.34	47.22	52.34	41.72	54.26	52.24	55.23	43.06
2:00	47.56	44.49	49.25	40.36	51.92	49.07	51.63	42.12
3:00	42.19	40.52	47.94	38.47	49.88	44.78	49.26	42.78
4:00	46.83	40.87	50.24	37.54	46.99	43.43	50.57	41.49
5:00	46.03	39.89	49.62	34.39	47.76	43.57	51.63	37.61
6:00	52.89	45.30	52.22	38.29	53.64	44.91	51.78	38.42
7:00	56.68	48.93	55.82	40.85	54.22	47.08	54.38	44.27
8:00	59.16	67.95	58.33	44.04	58.36	50.62	57.27	42.63
9:00	59.46	68.66	59.04	44.75	59.25	53.49	59.00	49.33
10:00	60.68	58.72	60.27	46.65	60.21	53.16	60.12	46.77
11:00	64.73	58.73	61.95	46.28	60.40	53.98	61.31	45.22
12:00	60.12	53.43	60.39	46.46	59.34	53.08	59.99	46.29
13:00	60.26	54.07	60.06	46.48	60.02	53.56	60.00	46.30
14:00	60.05	54.95	59.99	45.51	64.63	54.43	60.55	45.51
15:00	60.15	57.90	60.10	45.00	60.38	54.33	60.23	47.91
16:00	59.91	56.84	59.22	45.11	60.58	54.15	60.03	46.90
17:00	59.08	55.42	59.21	45.79	58.64	52.65	58.59	46.54
18:00	59.64	54.93	59.63	46.03	60.26	53.01	59.17	46.08
19:00	59.23	53.33	58.94	44.01	60.10	54.00	59.87	45.17
20:00	60.59	58.10	60.83	48.59	62.19	59.03	62.37	49.18
21:00	60.76	57.84	60.48	48.14	59.43	58.53	60.82	47.89
22:00	58.21	56.24	58.81	46.08	58.57	57.46	60.06	47.68
23:00	57.22	54.88	57.77	44.82	57.69	56.75	60.27	47.31

	Average Laeq			
	8/26/2024			
Hour	10172	12579	12527	Casella
0:00	56.19	55.55	59.37	46.14
1:00	54.91	53.86	58.18	45.63
2:00	53.05	52.05	57.03	43.92
3:00	50.99	50.36	52.66	45.98
4:00	54.14	50.15	52.59	44.88
5:00	53.61	50.16	53.86	47.50
6:00	57.71	50.75	56.58	51.97
7:00	60.52	53.51	59.89	53.82
8:00	61.55	54.66	61.24	55.52
9:00	60.58	53.91	59.94	52.23
10:00	61.16	54.01	60.11	54.35
11:00			67.07	55.60
12:00				57.70
13:00				
14:00				
15:00				
16:00				
17:00				
18:00				
19:00				
20:00				
21:00				
22:00				
23:00				

Table 7 - Truck Test Noise Graphs
August 21, 2024



Receptor Ambient Noise (2hr Ave.): 43.9 dBA

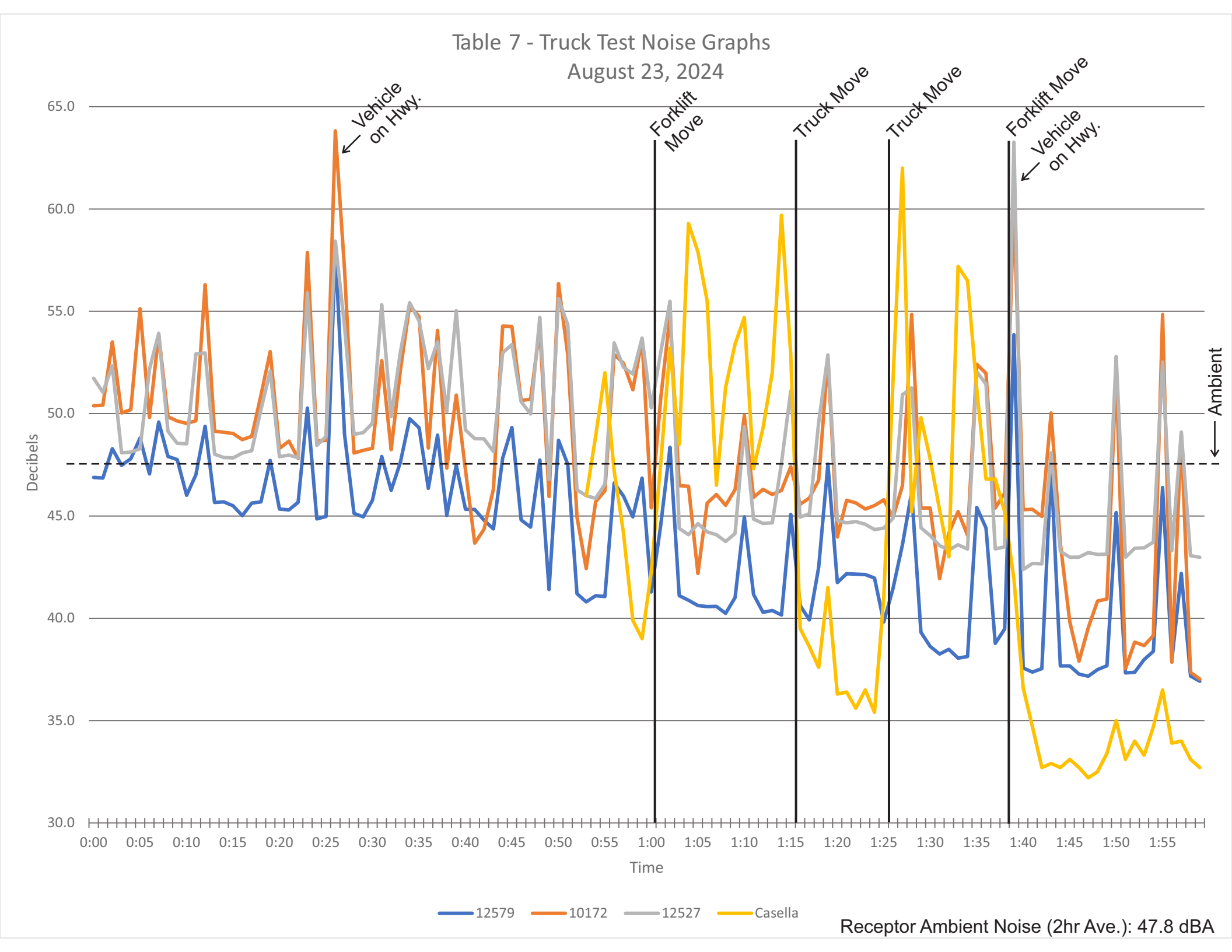


Table 7 - Truck Test Noise Graphs
August 23, 2024
Vehicle on Hwy.
Forklift Move
Truck Move
Truck Move
Forklift Move
Vehicle on Hwy.
Ambient
65.0
60.0
55.0
50.0
45.0
40.0
35.0
30.0
Decibels
0:00
0:05
0:10
0:15
0:20
0:25
0:30
0:35
0:40
0:45
0:50
0:55
1:00
1:05
1:10
1:15
1:20
1:25
1:30
1:35
1:40
1:45
1:50
1:55
Time
12579
10172
12527
Casella
Receptor Ambient Noise (2hr Ave.): 47.8 dBA

Table 8 - Truck Test Noise Summary (One-Minute Ave.)

21-Aug			
	12579	10172	12527
Time	Dcb	Dcb	Dcb
0:00	46.0	53.7	52.9
0:01	43.9	51.2	49.7
0:02	36.8	35.2	44.2
0:03	36.4	34.9	44.5
0:04	44.0	52.0	50.8
0:05	44.9	51.0	52.4
0:06	37.5	35.6	44.1
0:07	44.6	53.1	45.9
0:08	40.4	38.3	51.9
0:09	44.6	49.7	51.9
0:10	48.8	55.0	50.8
0:11	40.2	34.9	41.1
0:12	47.1	52.1	53.1
0:13	39.9	34.4	39.9
0:14	40.0	34.7	44.7
0:15	44.8	50.5	51.1
0:16	36.4	34.6	40.4
0:17	42.6	49.2	48.4
0:18	36.6	35.6	41.7
0:19	38.1	46.7	41.0
0:20	46.0	54.0	52.6
0:21	36.4	35.5	40.4
0:22	35.7	35.2	41.1
0:23	44.5	51.4	50.9
0:24	35.2	34.6	40.9
0:25	34.9	34.6	40.7
0:26	41.9	37.7	57.8
0:27	49.1	58.2	44.1
0:28	45.7	53.6	52.8
0:29	35.3	33.6	49.5
0:30	47.8	55.6	55.9
0:31	35.8	33.6	46.6
0:32	35.6	33.9	44.9
0:33	38.4	38.4	46.6
0:34	41.1	49.5	48.2
0:35	35.4	34.9	48.2
0:36	34.6	34.4	46.1
0:37	34.7	34.1	43.2
0:38	34.7	34.3	41.9
0:39	34.5	34.9	45.1
0:40	34.6	35.1	46.2
0:41	34.6	34.0	45.9
0:42	34.1	34.6	41.3
0:43	34.8	35.3	38.9

23-Aug				
	12579	10172	12527	Casella
Time	Dcb	Dcb	Dcb	Dcb
0:00	46.9	50.4	51.7	
0:01	46.9	50.4	51.0	
0:02	48.3	53.5	52.3	
0:03	47.5	50.0	48.1	
0:04	47.8	50.2	48.1	
0:05	48.8	55.1	48.3	
0:06	47.1	49.8	52.2	
0:07	49.6	53.9	53.9	
0:08	47.9	49.8	49.1	
0:09	47.8	49.6	48.6	
0:10	46.0	49.5	48.5	
0:11	47.0	49.7	52.9	
0:12	49.4	56.3	53.0	
0:13	45.7	49.1	48.0	
0:14	45.7	49.1	47.9	
0:15	45.5	49.0	47.8	
0:16	45.0	48.7	48.1	
0:17	45.6	48.9	48.2	
0:18	45.7	50.9	50.2	
0:19	47.7	53.0	52.1	
0:20	45.3	48.3	47.9	
0:21	45.3	48.7	48.0	
0:22	45.7	47.8	47.8	
0:23	50.3	57.9	55.9	
0:24	44.9	48.7	48.4	
0:25	45.0	48.7	48.9	
0:26	58.1	63.8	58.4	
0:27	49.0	57.0	54.3	
0:28	45.1	48.1	49.0	
0:29	45.0	48.2	49.1	
0:30	45.8	48.3	49.5	
0:31	47.9	52.6	55.3	
0:32	46.2	48.2	49.8	
0:33	47.6	52.1	53.0	
0:34	49.7	55.3	55.4	
0:35	49.3	54.7	54.5	
0:36	46.3	48.3	52.2	
0:37	48.9	54.1	53.5	
0:38	45.0	47.3	50.1	
0:39	47.5	50.9	55.0	
0:40	45.3	47.2	49.2	
0:41	45.3	43.7	48.8	
0:42	44.8	44.3	48.8	
0:43	44.4	46.3	48.2	

0:44	37.5	46.9	38.9
0:45	35.1	36.0	44.0
0:46	34.5	35.9	43.9
0:47	34.4	35.9	42.0
0:48	34.6	36.7	42.0
0:49	35.0	36.7	41.6
0:50	34.9	37.0	48.3
0:51	35.0	36.8	47.4
0:52	35.1	36.7	48.0
0:53	35.7	36.6	48.9
0:54	39.2	36.7	48.6
0:55	38.9	36.8	46.7
0:56	39.1	35.4	40.4
0:57	46.5	51.8	52.4
0:58	47.4	54.1	55.1
0:59	36.7	35.4	46.2
1:00	34.4	34.4	45.6
1:01	35.1	34.4	46.3
1:02	46.2	53.1	54.3
1:03	43.8	52.5	47.1
1:04	40.3	39.3	51.7
1:05	35.2	34.4	42.9
1:06	34.2	33.7	39.7
1:07	34.3	33.5	39.9
1:08	34.9	33.2	39.2
1:09	34.5	33.3	39.9
1:10	34.3	33.3	39.7
1:11	34.0	33.3	39.5
1:12	46.2	53.9	52.0
1:13	35.3	34.1	46.9
1:14	34.7	34.0	45.0
1:15	42.8	48.1	48.2
1:16	41.6	45.1	44.0
1:17	48.4	45.7	46.3
1:18	47.6	55.5	54.4
1:19	36.3	38.9	39.3
1:20	32.2	33.4	39.5
1:21	32.7	33.6	39.2
1:22	33.6	33.3	39.1
1:23	33.2	33.2	39.2
1:24	33.1	33.3	39.1
1:25	33.5	33.8	39.0
1:26	42.6	49.8	48.2
1:27	34.4	35.0	43.3
1:28	34.9	36.0	46.5
1:29	37.3	38.3	49.4
1:30	34.0	33.7	48.2

0:44	47.8	54.3	53.0	
0:45	49.3	54.3	53.4	
0:46	44.8	50.6	50.6	
0:47	44.5	50.7	50.0	
0:48	47.7	54.2	54.7	
0:49	41.4	45.9	46.8	
0:50	48.7	56.4	55.6	
0:51	47.5	52.9	54.3	
0:52	41.2	44.9	46.3	
0:53	40.8	42.4	46.0	46.0
0:54	41.1	45.7	45.9	48.9
0:55	41.1	46.2	46.5	52.0
0:56	46.6	52.9	53.5	47.2
0:57	46.0	52.5	52.3	44.2
0:58	45.0	51.2	51.9	39.9
0:59	46.9	53.6	53.7	39.0
1:00	41.3	45.4	50.3	42.3
1:01	44.6	50.8	53.0	47.6
1:02	48.4	54.8	55.5	53.2
1:03	41.1	46.5	44.4	48.5
1:04	40.9	46.5	44.1	59.3
1:05	40.6	42.2	44.6	57.9
1:06	40.6	45.6	44.2	55.5
1:07	40.6	46.1	44.1	46.5
1:08	40.2	45.5	43.8	51.3
1:09	41.0	46.3	44.1	53.4
1:10	45.0	49.9	49.4	54.7
1:11	41.2	45.9	44.8	47.3
1:12	40.3	46.3	44.6	49.3
1:13	40.4	46.0	44.7	52.0
1:14	40.2	46.2	47.6	59.7
1:15	45.1	47.4	51.1	52.9
1:16	40.6	45.6	44.9	39.5
1:17	39.9	45.9	45.1	38.6
1:18	42.5	46.8	49.6	37.6
1:19	47.5	52.7	52.9	41.5
1:20	41.7	44.0	44.8	36.3
1:21	42.2	45.8	44.7	36.4
1:22	42.2	45.6	44.7	35.6
1:23	42.1	45.3	44.6	36.5
1:24	42.0	45.5	44.3	35.4
1:25	39.8	45.8	44.4	41.0
1:26	41.5	44.9	44.9	51.6
1:27	43.6	46.5	50.9	62.0
1:28	46.2	54.8	51.3	45.2
1:29	39.3	45.4	44.4	49.8
1:30	38.6	45.4	44.0	47.8

1:31	33.9	33.7	40.1
1:32	33.8	33.9	39.7
1:33	33.4	33.8	40.2
1:34	32.8	33.4	40.0
1:35	33.1	33.5	40.2
1:36	34.5	33.9	40.6
1:37	34.9	33.9	40.6
1:38	34.4	34.6	40.1
1:39	33.7	35.1	39.3
1:40	34.2	35.0	39.2
1:41	34.4	35.0	39.4
1:42	33.7	34.3	39.2
1:43	36.4	34.9	44.5
1:44	45.6	54.7	45.2
1:45	37.9	37.4	51.4
1:46	33.2	34.8	39.5
1:47	33.0	34.5	38.7
1:48	33.3	34.8	39.0
1:49	33.7	35.2	39.4
1:50	39.0	38.3	49.7
1:51	41.6	50.4	40.9
1:52	32.9	34.7	39.1
1:53	32.3	34.7	38.5
1:54	33.2	34.5	38.2
1:55	34.3	34.5	38.2
1:56	34.2	34.8	38.8
1:57	33.7	34.9	38.7
1:58	34.2	34.5	38.3
1:59	33.7	34.3	38.3

1:31	38.2	41.9	43.6	45.3
1:32	38.5	44.2	43.3	43.0
1:33	38.0	45.2	43.6	57.2
1:34	38.1	44.0	43.4	56.5
1:35	45.4	52.4	52.1	51.2
1:36	44.4	52.0	51.4	46.8
1:37	38.8	45.4	43.4	46.8
1:38	39.5	46.1	43.5	45.2
1:39	53.9	60.2	63.3	41.9
1:40	37.6	45.3	42.4	36.6
1:41	37.4	45.3	42.7	34.7
1:42	37.5	45.0	42.7	32.7
1:43	47.5	50.0	48.1	32.9
1:44	37.7	43.7	43.3	32.7
1:45	37.7	39.8	43.0	33.1
1:46	37.3	37.9	43.0	32.7
1:47	37.2	39.5	43.2	32.2
1:48	37.5	40.8	43.1	32.5
1:49	37.7	40.9	43.1	33.4
1:50	45.2	52.1	52.8	35.0
1:51	37.3	37.5	43.0	33.1
1:52	37.4	38.8	43.4	34.0
1:53	38.0	38.7	43.4	33.3
1:54	38.4	39.2	43.7	34.7
1:55	46.4	54.9	52.5	36.5
1:56	38.0	37.8	43.3	33.9
1:57	42.2	49.1	49.1	34.0
1:58	37.2	37.4	43.1	33.1
1:59	36.9	37.0	43.0	32.7