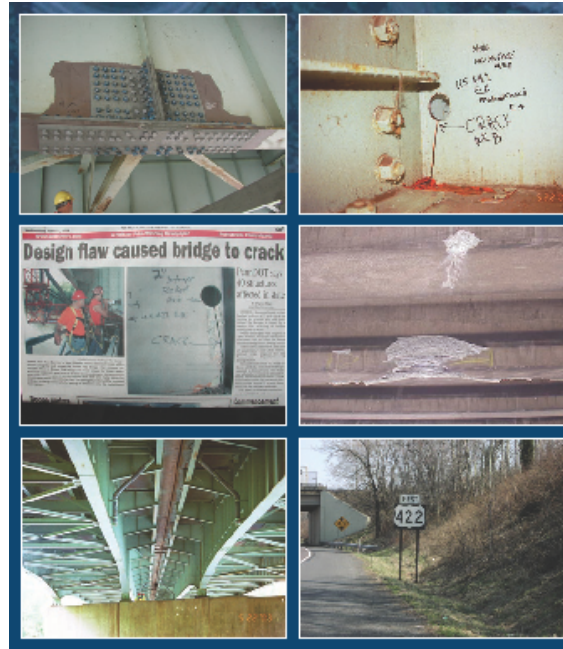


Draft Final Design Noise Study

SR 0422, Section M2B
Pottstown Bypass
North Coventry Township
Chester County
MPMS No. 14698



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1.0 Executive Summary

The Pennsylvania Department of Transportation (PennDOT) and the Federal Highway Administration (FHWA) are finalizing traffic noise abatement options for proposed roadway improvements along the SR 0422 Pottstown Bypass. This specific project, referred to as SR 0422, Section M2B, is one of seven separate construction sections that altogether comprise the SR 0422 Pottstown Bypass Express Reconstruction Project, and includes the total reconstruction of 1.50 miles of SR 0422 from approximately 850 feet east of the Schuylkill River Bridge between Stowe and SR 0100 Interchanges to approximately 2,370 feet west of the Keim Street overpass. This section is located entirely in North Coventry Township, Chester County.

All conceptual data from the 2003 preliminary noise study is superseded by the latest available engineering designs and planning assumptions in this Draft Final Design Noise Study. Traffic noise levels for five noise study areas (NSA) in both the existing year 2018 and the future design year 2049—represented by the year 2049 No Build and Build alternatives—were predicted using the FHWA Traffic Noise Model (TNM) version 2.5 as validated by data collected from a noise monitoring program conducted in July 2020. A total of 252 receiver locations in the TNM representing 286 residences and 86.75 non-residential Equivalent Residential Units (ERU) at one cemetery, three park areas, one church, two sports facilities, and a swim club were analyzed in this Draft Final Design Noise Study to identify and abate traffic noise impacts. See Appendix A for modeled noise levels for each receptor.

Future traffic noise impacts are predicted to be prevalent from SR 0422, Section M2B. Noise increases in the Build alternative primarily stem from the 24% forecasted increase in traffic over the No Build alternative. Under the Build alternative, traffic noise levels are predicted to approach or exceed the FHWA and PennDOT noise abatement criteria at 36 receiver locations representing 32 residences and 33.21 ERU at non-residential locations, thus warranting noise abatement consideration. At these impacted locations, noise barriers were determined to be the most effective noise mitigation measure per the project purpose and need. Three of the five noise barriers evaluated in this Draft Final Design Noise Study were determined to be both feasible and reasonable per the PennDOT three-phased approach to noise abatement determination and, as such, are recommended for implementation. Barrier A is recommended at 26,529 square feet of total area to benefit 31 residences and 31.3 ERU at 426 square feet of abatement per benefited receptor in NSA A. Barrier B benefits 1.5 ERU and would be feasible but not reasonable to implement in NSA B. Barrier C benefits all impacted receptors and would be feasible but not reasonable to implement in NSA C. Barrier D is recommended at 22,442 square feet of total area to benefit 14 residences at 1,603 square feet of abatement per benefited receptor in NSA D. Barrier E is recommended at 19,316 square feet of total area to benefit 13 residences and 0.45 ERU at 1,436 square feet of abatement per benefited receptor in NSA E. All impacted receiver locations would be benefited except for five locations (representing 0.18 ERU approximately 50 feet above roadway grade and one residence) and one park representing 1.5 ERU predicted to be impacted by traffic noise. Nearly all impacted receptors (88 percent) would meet or exceed the desired noise reduction design goal of seven decibels.

2.0 Introduction

The Federal Highway Administration (FHWA) and the Pennsylvania Department of Transportation (PennDOT) plans to reconstruct and improve a seven-mile section of SR 0422 between the Berks County line and the Sanatoga Interchange in Chester and Montgomery Counties. The purpose of this Draft Final Design Noise Study is to identify potential traffic noise impacts stemming from the proposed improvements in SR 0422, Section M2B—one of seven separate construction sections that comprise the SR 0422 Pottstown Bypass Express Reconstruction Project, see Figure 2-1 and Figure 2-2—and recommend noise abatement at impacted locations that would be warranted, feasible, and reasonable based upon FHWA and PennDOT criteria.

This Draft Final Design Noise Study provides a comprehensive analysis which includes a description of the project background, project purpose and need, the alternatives analyzed, characteristics of noise, methods used for conducting a traffic noise impact and abatement analysis, identification of noise sensitive receptors, summary of existing and future traffic noise impacts, traffic noise abatement considerations, construction noise, and public involvement.

Figure 2-1: Corridor Map – Pottstown Bypass Reconstruction Project

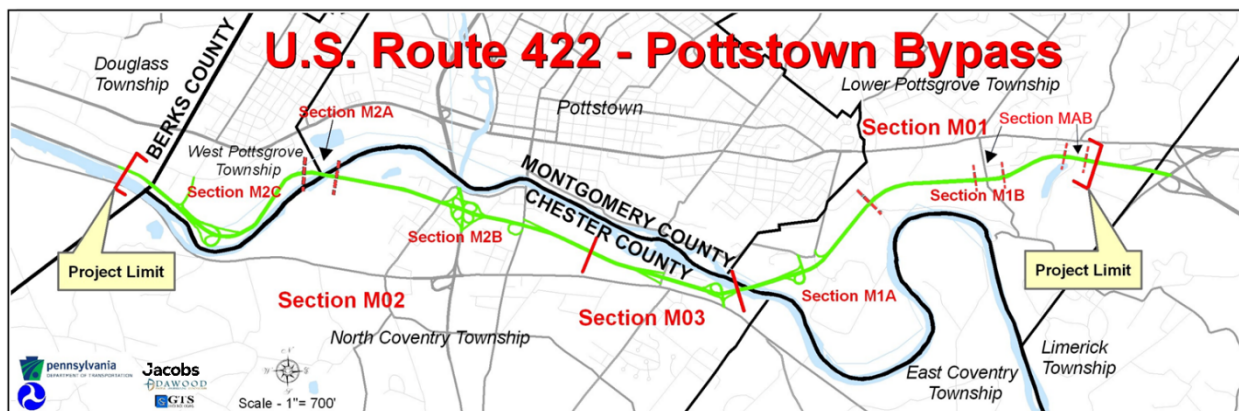
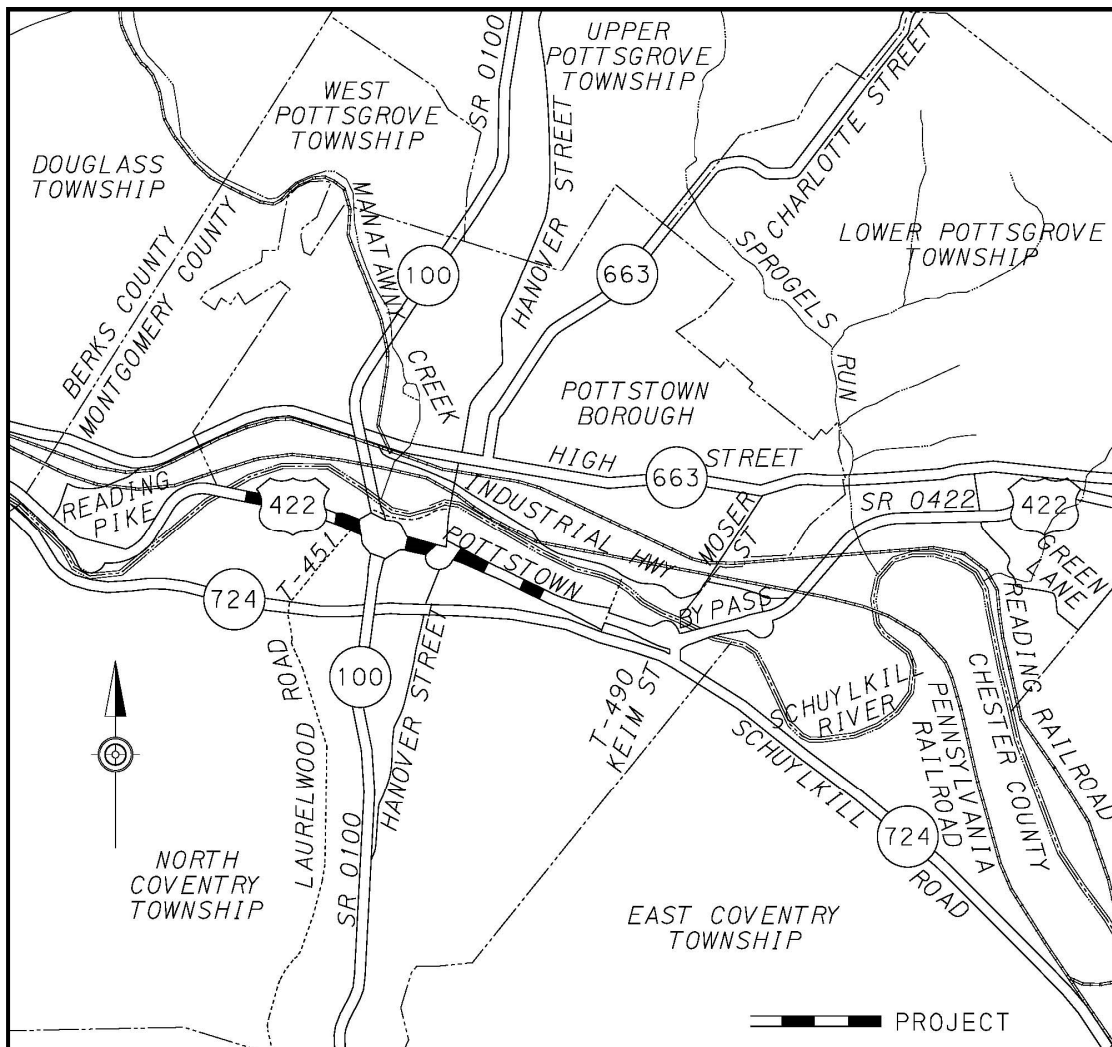


Figure 2-2: Project Location Map



2.1 Project Background

The project, designated as SR 0422, Section M2B, is a Type I transportation improvement project that involves the total reconstruction of 1.50 miles of SR 0422 from approximately 850 feet east of the Schuylkill River Bridge between Stowe and SR 0100 Interchanges to approximately 2,370 feet west of the Keim Street overpass. This section of SR 0422 is located entirely in North Coventry Township, Chester County. To the north of SR 0422, Section M2B is a densely populated residential community with recreational facilities while south of SR 0422, Section M2B predominately consists of single-family residential homes and the Mount Zion Cemetery. The Bellewood Country Club is located adjacent to the Mount Zion Cemetery and will be assessed in Section M03 of the SR 0422 corridor.

A preliminary traffic noise study for SR 0422, Section M2B was performed previously by GTS Technologies (now American Engineers Group, LLC) in 2003. The preliminary study found that all four noise study areas identified within the project area warrant further analysis during Final Design to determine noise abatement meeting the feasibility and reasonableness criteria. As the 2003 preliminary study was based

upon conceptual traffic and engineering data, all conclusions derived therein were considered preliminary in nature.

In contrast to the 2003 preliminary study, the findings in this Draft Final Design Noise Study are based upon final engineering design and the most current available traffic planning information and assumptions. As a result, the findings in this study supersede those of the 2003 preliminary noise study, and several minor revisions have been made to the noise study areas such as the labeling and delineation to provide a comprehensive and clear analysis.

2.2 Purpose and Need

The existing SR 0422 Pottstown Bypass Express corridor was constructed in the early 1960s. The existing concrete pavement is deteriorating along with the bituminous overlays. Many geometric features of the existing facility including horizontal radii, superelevation, typical section, acceleration and deceleration lengths, sight distance, vertical clearance, etc. are deficient based on current PennDOT and FHWA design criteria therefore posing significant safety risks to the travelling public. In addition, many of the eighteen structures along the seven-mile corridor are considered Structurally Deficient. An above average crash history has also been identified along the corridor as a result of the deficiencies listed above. The purpose of the SR 0422 Pottstown Bypass Express Reconstruction Project is to evaluate and address the previously mentioned deficiencies by providing consistent roadway typical section to meet current design standards, modifying the mainline horizontal geometry to meet minimum radii, sight distance and superelevation criteria, adjusting the vertical geometry to meet sight distance and minimum vertical clearance criteria for SR 0422 and crossing roadways, and reconstructing all structures along the corridor. Seven interchanges along the corridor will be reconstructed and/or reconfigured to provide the required acceleration and deceleration lane lengths in order to improve traffic operations and provide safer conditions for the travelling public.

The final design noise analysis is performed by construction sections when required. This Draft Final Design Noise Study report documents the noise analysis and recommended improvements for the SR 0422, Section M2B construction section only.

2.3 Alternatives Analyzed

2.3.1 No Build Alternative

For the SR 0422, Section M2B design year of 2049, the No Build alternative would maintain the existing roadway design and geometry in SR 0422, Section M2B as well as allow for any planned maintenance and routine modifications. This alternative also assumes completion of any reasonably foreseeable transportation, development, and infrastructure projects that are already in progress; are programmed by PennDOT or FHWA; or are included in the fiscally constrained Regional Transportation Plan. Improvements from these projects are anticipated to be completed independently from any improvements proposed from the SR 0422, Section M2B project.

2.3.2 Build Alternative

For the SR 0422, Section M2B design year 2049 Build Alternative, the four (4) lane limited access expressway will be reconstructed on the existing horizontal alignment with improvements that include increased shoulder widths and vertical clearances. This also includes reconstruction of three (3) structures carrying SR 0422 over TR 541 (Laurelwood Road), SR 0100 (Pottstown Pike), and SR 1037 (Hanover Street) and one (1) drainage culvert for an unnamed tributary that is to be extended, located just east of Laurelwood Road. A summary of proposed improvements is listed below:

- The mainline vertical alignment will provide stopping sight distance (SSD) of 570' (minimum) for all proposed vertical curves (570' required at 60 MPH).
- Roadside ditches will be added or replaced to meet current standards as outlined in DM-2, Chapter 10.
- The proposed section will provide longer superelevation (SE) transition lengths for the median and shoulders in accordance with current design standards.
- Mainline right shoulder widths will be increased from 10' paved to 12' paved.
- The existing 20' wide median will be reconstructed with concrete median barrier, F-shape, 50" height.
- Three (3) bridges carrying SR 0422 over Laurelwood Road, SR 0100 (Pottstown Pike), and SR 1037 (Hanover Street) are to be replaced and widened. The proposed design will provide a 14'-6" minimum vertical clearance over Laurelwood Road and Hanover Street, and 16'-6" minimum vertical clearance over SR 0100. A design exception is anticipated for the vertical clearance over Hanover Street.
- A signing upgrade will replace existing signs and provide new signs meeting PennDOT Pub. 111 requirements.

2.4 Characteristics of Noise

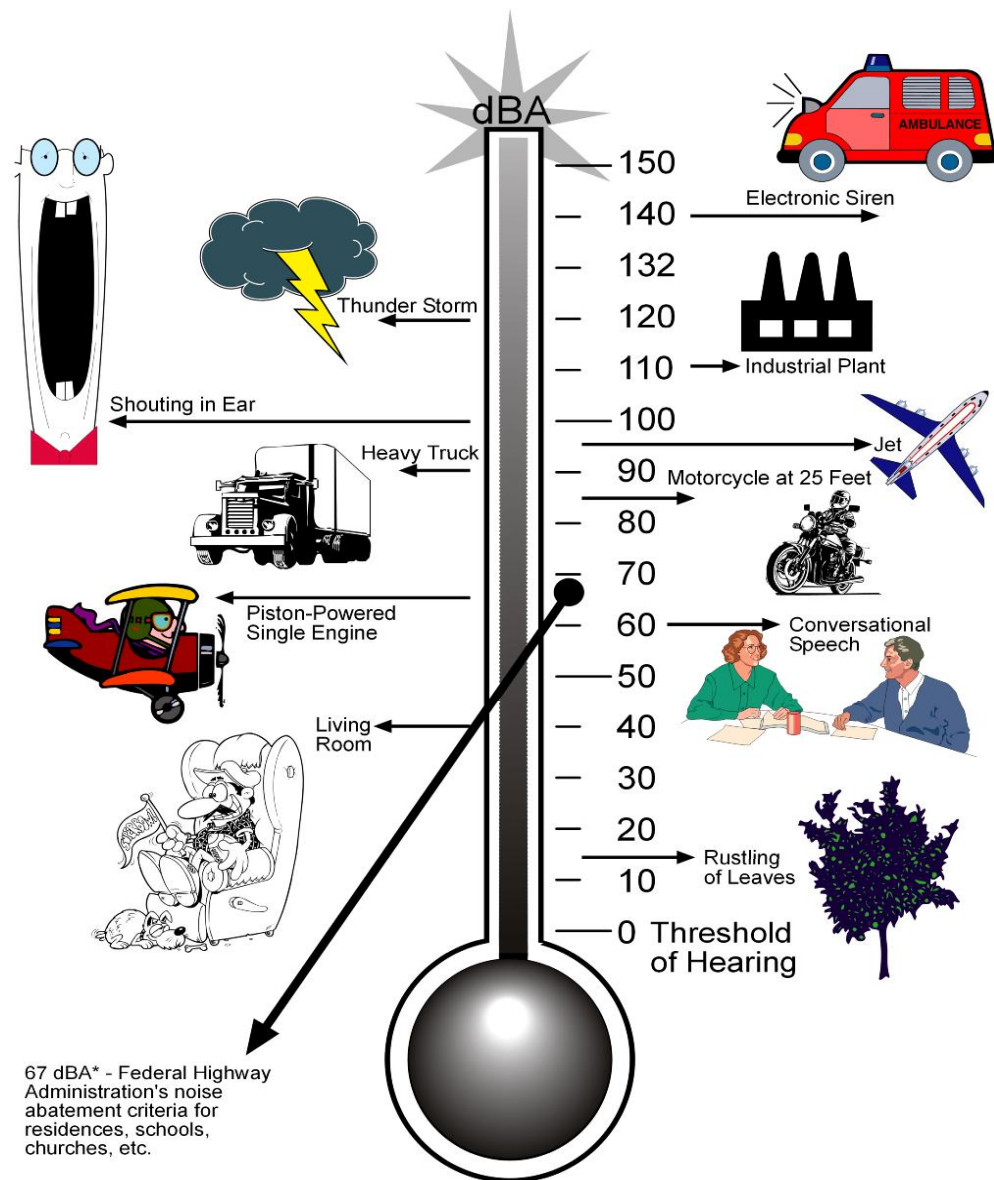
Sound is defined as a form or energy transmitted by vibrations in the air that are received by the ear through sense of hearing. Noise is generally referred to as unwanted sound. The terms noise and sound are used synonymously.

Sound is described as average sound pressure levels (SPL). The most common unit of measurement is decibel, (dB). To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. For the purposes of environmental studies, the A-weighted scale on a common sound level instrument is used because this scale closely approximates the range of frequencies an average human ear can detect. The A-weighted noise levels are defined as dBA. Figure 2-3 shows typical A-weighted noise levels.

In typical noisy environments, changes in noise of 1 dB to 2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typically noisy environments. An increase of 3 dB requires a doubling of existing sound energy, such as doubling the volume of traffic on a highway or halving of distance from a highway. Generally, a 3 dB increase in noise levels is considered barely detectable while a 5 dB increase is perceived as a distinctly noticeable increase and a 10 dB increase is perceived as being twice as loud.

Noise consists of three interrelated elements: the source, the transmission path, and the receptor. All three elements must be present for there to be noise. Without a source to produce sound, there is no noise. Likewise, there is no noise if the sound is not received. Noise may be continuous or intermittent and of high frequency or low frequency. Traffic noise is typically measured over a one-hour time period.

Figure 2-3: Examples of Common Outdoor Noise and dBA Levels



Sound Level Comparisons

* The Federal Highway Administration's noise abatement criteria are listed as dBA. dBA is a time weighted value for noise. dB represents an individual noise event. dBA for a noise source is generally less than dB.

Source: FHWA

3.0 Methodology

3.1 Federal and State Noise Policies

This Draft Final Design Noise Study was completed in accordance with the FHWA *Highway Traffic Noise: Analysis and Abatement Guidelines* (FHWA-HEP-10-025, December 2011) and the PennDOT *Project Level Highway Traffic Noise Handbook*, Publication No. 24 (May 2019.) The Project is defined as Type 1 by 23 Code of Federal Regulations (CFR) 772 as the additional widening proposed for acceleration/deceleration lanes and right shoulder for SR 0422, Section M2B reconstruction project would affect both horizontal alignment and vertical sightlines between the roadway and adjacent noise sensitive areas. Therefore, a detailed traffic noise analysis is required by 23 CFR 772.

The PennDOT Publication No. 24 (PUB 24) has adopted the Noise Abatement Criteria (NAC) that have been established by FHWA under 23 CFR 772 for determining traffic noise impacts for a variety of land uses. The NAC, listed in Table 3-1 for various activities, represent the upper limit of acceptable traffic noise conditions and apply them to land use areas which have regular human activity where lowered noise levels are desired. The NAC is given in terms of the hourly, A-weighted, equivalent sound level in decibels (dBA.)

Table 3-1: Hourly Weighted Sound Levels dB(A) For Various Land Use Activity Categories

Land Use Activity Category	Leq(h) ¹	Description of Land Use Activity Category
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 ²	67 (exterior)	Residential
C ²	67 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care 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, Section 4(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 ²	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A, B or C.
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.

Source: Pennsylvania Department of Transportation, *Project Level Highway Traffic Noise Handbook*, Publication No. 24 (May 2019).

¹ Impact thresholds should not be used as design standards for noise abatement purposes.

² Includes undeveloped lands permitted for this activity category.

3.2 Field Noise Monitoring and Modeling Methods

Traffic noise levels are modeled using the FHWA Traffic Noise Model (TNM) 2.5. To calculate noise levels at receptor locations, the TNM uses acoustical algorithms that account for three-dimensional sound propagation variables such as atmospheric absorption and ground type, as well as intervening obstructions such as terrain, barriers, and building rows. Both existing and proposed roadway geometries are modeled in the TNM along with noise sensitive receptor locations and traffic characteristics such as total volumes, vehicle classification, travel speeds, and flow control devices such as traffic signals and acceleration/deceleration lanes.

To verify the accuracy of the TNM for use in predicting Project noise, an initial validation noise model was developed to match both traffic and acoustical environments observed during a noise monitoring program consisting of short-term measurements of at least twenty minutes in duration. These field data including roadway and terrain geometries were inputted into the TNM and the output modeled noise levels were compared with the monitored noise levels. This was done to ensure that changes between future and existing conditions were due solely to changes in conditions related to the project and did not erroneously reflect discrepancies in the modeling and monitoring techniques. Generally, the difference between the monitored and modeled traffic noise levels should be within 3 dBA.

With the validated noise model, existing year 2018 noise levels were then predicted using existing worst-case noise hour traffic volumes and composition. The model was then revised by replacing the current roadway design with the proposed roadway design along with any associated changes to adjacent terrain while the existing traffic data were replaced with future design year 2049 traffic projections. These two models were then used to predict the future design year (2049) No Build alternative and Build alternative noise levels as well as any potential traffic noise impacts and abatement.

The noise abatement determination is based on PennDOT's three-phased approach. The first phase determines whether noise abatement is warranted by a traffic noise impact which occurs when the predicted traffic noise levels either approach or exceed the NAC or are substantially higher than the existing noise levels. The approach level has been defined by PennDOT as 1 dBA less than the NAC while a substantial noise increase is defined as an increase of 10 dBA or more in highway traffic noise levels from existing noise levels. Receptors that satisfy either the approach or substantial increase condition would be impacted by traffic noise and warrant consideration of traffic noise abatement measures as guided by phases two and three of the PennDOT three-phased approach.

3.3 Traffic and Model Data

Existing and future year traffic volumes were based upon data provided in the US 422 Pottstown Bypass Traffic Forecasts (April 2019) which was developed for PennDOT by the Delaware Valley Regional Planning Commission (DVRPC) to analyze existing traffic conditions, and the effects of potential corridor improvements on future traffic volumes and patterns. The study provided current (2018) traffic counts along with 2025 and 2045 traffic forecasts for both the No Build and Build alternative configurations. The highest of the two projected growth rates utilized in the report's traffic projections—2018 to 2045 and 2025 to 2045—were applied to this study in order to extrapolate traffic volumes on a per-segment basis for the design year 2049.

No new entrance or exit points would be added to the SR 0422 corridor in the Build alternative. Although neither existing nor design year traffic volumes were available for Laurelwood Road traveling under SR 0422, traffic noise contribution from this low volume roadway would be marginal relative to SR 0422 traffic noise and would not meaningfully contribute to the ambient traffic noise environment. See Appendix F for a summary of traffic data used to model traffic noise in this Draft Final Design Noise Study.

As future hourly traffic data were developed by DVRPC, long-term noise monitoring was not required to determine the loudest traffic noise hour. The evening PM peak traffic hour was used in this study as the loudest traffic noise hour during which the highest future volume of traffic and number of heavy trucks may travel at the highest free-flow speeds within the designed future roadway capacity. A review of the DVRPC 24-hour traffic data concluded that the highest volume of hourly traffic would occur in the AM and PM peak hours and would operate at the design speed within the designed roadway capacity at near free flow conditions, in the Build year 2049. In addition, to account for the effect of diurnal traffic patterns on traffic noise, the TNM modeling of SR 0422 in the Build year for both AM and PM peak hours determined that an additional two (2) receptors would be impacted by traffic noise in the PM peak hours, and that traffic noise levels at the PM peak hour would be on average 0.4 dBA higher. As a result, the PM peak hour was selected as the loudest traffic noise hour in this Draft Final Design Noise Study.

Vehicle classifications were determined from PennDOT's *Internet Traffic Modeling System* and PennDOT's *Roadway Management System (RMS)*. As part of routine RMS updates, 24-hr vehicle volume and classification counts were performed for the SR 0422, Section M2B corridor in 2018 which provided classification of the traffic volume data into automobiles, medium trucks, heavy trucks, and motorcycles in conjunction with guidance from the FHWA Office of Highway Policy's *Traffic Monitoring Guide* and the Towing and Recovery Association of America's *Vehicle Identification Guide*. In addition, per FHWA recommendations for multi-lane highway noise abatement projects in the final design stage, the Build traffic volumes and vehicle classifications were divided across each SR 0422 travel lane per a typical non-uniform distribution for four-lane urban highways with typical truck percentage developed for FHWA's *Recommended Best Practices for the Use of FHWA Traffic Noise Model* (December 2015.)

All existing and proposed roadway geometry were exported from the project topographic survey and roadway design model then digitally imported into the TNM at a horizontal and vertical accuracy of one foot. Likewise, terrain data used in the TNM were one-foot derivations of a digital terrain model developed from the project topographic survey and supplemented by 2008 PAMAP LiDAR data for areas

falling outside the project survey. Both roadways and shoulders were modeled in the TNM as single-lane centerlines. Although the existing and future posted SR 0422 speed limit is 55 miles per hour (MPH), both the existing and proposed roadway design speed is 60 MPH; therefore, the more conservative 60 MPH was used in this Draft Final Design Noise Study. Dwelling unit counts for all noise sensitive receptors used in this study were confirmed using the online Chester County's GIS Hub maintained by the Chester County Planning Commission.

4.0 Existing Highway Traffic Noise Environment

4.1 Noise Monitoring Program and Model Validation

The modeling process began with the TNM validation per PennDOT requirements. This was achieved by comparing the monitored noise levels with the noise levels generated by a validation computer model matching the traffic volumes and speeds observed during the noise monitoring program. The traffic data obtained during each monitoring session was converted into one-hour traffic data for use in the validation noise model. Validation ensures that reported changes between existing and future alternatives are due to changes in traffic and not resulting from discrepancies between monitoring and modeling techniques. A difference of 3 dBA or less between the monitored and modeled levels is considered by PennDOT to be an acceptable level of accuracy as this is the limit of change detectable by the typical human ear.

Prior to noise monitoring, a land use review and a windshield survey were performed to identify noise sensitive land uses and any significant sources of acoustical shielding. Sixteen representative locations were chosen for short-term noise monitoring, as shown in Appendix B. Noise monitoring was performed for a minimum of twenty minutes at each monitoring location with simultaneous traffic counts conducted for five vehicle types: automobiles, medium trucks, heavy trucks, buses, and motorcycles. All noise measurements were collected on July 27th, 28th and 29th 2020 between 9 AM and 6:30 PM under meteorologically acceptable conditions specifically dry pavement, calm or light winds, and free-flowing traffic. Measurements were collected using two ANSI Type 1 Quest SoundPro DL-1 noise meters which were field-calibrated before and after each measurement with Quest QC-10 acoustic calibrator units. Laboratory calibration certificates for noise meters are included in Appendix C.

Monitored noise levels in the project area ranged from 59 dBA to 70 dBA. A summary of the short-term monitoring results is presented in Table 4-1 below, while all field data sheets and noise meter output summaries are presented in Appendices D and E, respectively. The noise monitoring program confirmed that SR 0422 traffic noise is the dominant source of noise in the existing noise environment in the project area.

A summary of the model validation process is also shown in Table 4-1. For all sixteen monitoring sites, the difference between the modeled and monitored noise levels range from -2.7 dBA to +2.6 dBA, while the average difference was 1.5 dBA. As the validation process shows less than a 3 dBA difference between the monitored and modeled noise levels, the validation noise model was verified to be representative of existing conditions and was thereby used as the development template for all future year noise prediction models.

Table 4-1: Short-Term Monitoring and Model Validation Results

NSA	Site	Address	Land Use/Activity Category	Noise Levels (dBA)		
				Monitored	Modeled	Difference between Monitored and Modeled
A	M-1	787 Union Ave	Residential / B	65.6	68.2	-2.6
	M-2	751 Union Ave	Residential / B	59.2	56.5	2.7
	M-3	270 Laurelwood Road	Residential / B	64.5	66.8	-2.3
	M-4	751 Union Ave	Residential / B	59.3	59.6	-0.3
B	M-5	Riverbend Park 200 Yerger Lane	Exterior / C	65.6	65.3	0.3
	M-6	220 Yerger Lane	Residential / B	60.7	60.4	0.3
	M-7	239 Laurelwood Road	Residential / B	63.6	66	-2.4
C	M-8	345 Elm Street	Residential / B	61.4	59.6	1.8
	M-9	118 West Main Street	Residential / B	59.8	60.3	-0.5
	M-10	344 South Hanover Street	Residential / B	70.3	69.8	0.5
	M-11	82 East Main Street	Residential / B	60.8	60.1	0.7
D	M-12	255 Root Ave	Residential / B	61.4	62.6	-1.2
	M-13	426 Kline Ave	Residential / B	67.8	69.7	-1.9
	M-14	81 Dorchester Lane	Residential / B	60.1	62.7	-2.6
E	M-15	406 South Hanover Street	Residential / B	65.8	68.4	-2.6
	M-16	Mount Zion Cemetery 225 E Schuylkill Road	Exterior / C	65.3	66.9	-1.6

4.2 Existing Conditions

The project area was divided into five NSA's in order to delineate groups of noise sensitive receptors that are exposed to a common noise environment comprised of similar noise sources and levels such as traffic volumes, traffic mix, traffic speed, and topographic features. To determine traffic noise levels in the existing conditions, each NSA was modeled in the TNM using the 2018 loudest-hour traffic volumes and composition. Below are descriptions of each NSA with a summary of its existing traffic noise environment. See Appendix B for map graphics showing each NSA and Appendix A for modeled noise levels for each receptor.

NSA A

NSA A, located along eastbound SR 0422 and west of SR 0100 Pottstown Pike, consists of residential homes, a swim club and a small park. The residential homes are located along Union Ave, Laurelwood Road, Fisher Ave, and Reiff Ave. The Laurelwood Swim Club, located at the end of Union Ave and Bryton Park, is located adjacent to Bryton Ave. There were four NSA A monitoring sites, located at 787 Union Ave (M1,) 788 Union Ave (M2,) 270 Laurelwood Road (M3) and 751 Union Ave (M4.) In total, 62 noise receivers

(A-01 through A-62) represent 78 residences evaluated under Activity Category B and 32.6 ERU for Laurelwood Swim Club and Bryton Park evaluated under Activity Category C in NSA A. The Activity Category C ERU for Laurelwood Swim Club were determined based on the guidelines in Table E3, Appendix E in PUB 24. Contact was made with a representative of Laurelwood Swim Club who provided average visitor numbers at the swim club (see Appendix G.) Using these data, the ERU for the property were calculated to be 31.3 and applied to a single point. It was determined that since Bryton Park was a small area, the park would be represented by a single point. The ERU of Bryton Park were based on default assumptions in Table E3, Appendix E of PUB 24 and were calculated to be 1.3 ERU.

Existing 2018 condition exterior noise levels in NSA A are predicted to average 59 dBA and range from 47 dBA to 70 dBA with 11 receivers representing 12 residences and 1 receiver representing 31.3 ERU that currently experience traffic noise impacts due to levels approaching or exceeding the NAC.

NSA B

NSA B, located along westbound SR 0422 and west of SR 0100 Pottstown Pike, located mostly in the 100-year floodplain of the Schuylkill River, consists of residential homes and Riverbend Park, which contains several athletics facilities. The residential homes are located along Laurelwood Road, River Road, and Yerger Lane while River Bend Park is located along River Road. There were three NSA B monitoring sites, located at 200 Yerger Lane (M5), 220 Yerger Lane (M6) and 239 Laurelwood Road (M7.) In total, 11 noise receivers (B-01 through B-10) represent 7 residences evaluated under Activity Category B and 3.8 ERU evaluated under Activity Category C for River Bend Park in NSA B. The Activity Category C ERU for River Bend Park were determined based on the guidelines in Table E3, Appendix E in PUB 24. Contact was made with a representative of North Coventry Township who provided the average number of sports events and attendees of the sports facilities at River Bend Park (see Appendix G.) Using these data, the ERU for the property were calculated to be 3.8 and applied to four points, two for the baseball fields, which represent a total of 0.8 ERU, and two for the soccer fields, which represent a total of 3 ERU.

Existing 2018 condition exterior noise levels in NSA B are predicted to average 61 dBA and range from 58 dBA to 64 dBA with no receptors that currently experience traffic noise impacts due to levels approaching or exceeding the NAC.

NSA C

NSA C, located along westbound SR 0422 and east of SR 0100 Pottstown Pike, located mostly in the 100-year floodplain of the Schuylkill River, consists of residential homes, an athletics facility, a public park, public basketball courts, and a church. The residential homes are located along River Road, W Main Street, East Main Street and South Hanover Street. Riverside Park is located along West Main Street and the sports facilities of Coventry Little League and the Penn Street Courts are located along S Penn Street, while Living Hope Mennonite Fellowship is located on East Main Street. In total, NSA C consists of 84 noise receivers (C-01 through C-84) representing 126 residences evaluated under Activity Category B and 47.9 ERU evaluated under Activity Category C for Riverside Park, Coventry Little League, and the Penn Street Courts, and 1 ERU evaluated under Activity Category D for Living Hope Mennonite Fellowship (assumed open-window building reduction of 10 dBA.) There were four NSA C monitoring sites, located at 345 Elm Street (M8), 118 W Main Street (M9), 344 South Hanover Street (M10) and 82 East Main Street (M11.)

The Activity Category C ERU for Riverside Park, Coventry Little League and the Penn Street Courts were determined based on the guidelines in Table E3, Appendix E in PUB 24. Contact was made with a representative of Coventry Little League who provided the average number of sports events and attendees of the sports facilities at the sports fields at the Coventry Little League facility (see Appendix G.) Using these data, the ERU for each property were calculated. Coventry Little League is represented by 39.2 ERU which were applied to four points, one for each sports field. The Riverside Park and the Penn Street Courts were represented by one point each and calculated to be 3.3 ERU and 5.4 ERU, respectively, based on default assumptions present in Table E3, Appendix E of PUB 24.

Existing 2018 condition exterior noise levels in NSA C are predicted to average 57 dBA and range from 48 dBA to 66 dBA with one receiver representing one residence that is currently experiencing traffic noise impacts due to levels approaching or exceeding the NAC.

NSA D

NSA D, located along eastbound SR 0422 and east of SR 0100 Pottstown Pike, consists of residential homes located along South Hanover Street, Mount Zion Ave and Kline Ave. In total, 52 noise receivers (D-01 through D-51) represent 56 residences evaluated under Activity Category B in NSA D. There were three NSA D monitoring sites, located at 255 Root Ave (M12,) 426 Kline Ave (M13) and 81 Dorchester Lane (M14.)

Existing 2018 condition exterior noise levels in NSA D are predicted to average 57 dBA and range from 46 dBA to 73 dBA with five receivers representing five residences that currently experience traffic noise impacts due to levels approaching or exceeding the NAC.

NSA E

NSA E, located along eastbound SR 0422 and east of South Hanover Road, consists of residential homes and a large cemetery. The residential homes are located along South Hanover Street, and the Mount Zion Cemetery and Mausoleum can be accessed from South Hanover Street. In total, 43 noise receivers (E-01 through E-42) represent 19 residences evaluated under Activity Category B and 1.5 ERU evaluated under Activity Category C for Mt. Zion Cemetery in NSA E. There were two NSA E monitoring sites, located at 406 South Hanover Street (M15) and 225 East Schuylkill Road at Mt Zion Cemetery (M16.) Based on the guidelines in Table E2, Appendix E in PUB 24 and the 9,976 graves present at Mount Zion Cemetery per online research, 33 grid-based receivers with a total of 1.5 ERU representing the cemetery extents.

Existing 2018 condition exterior noise levels in NSA E are predicted to average 62 dBA and range from 57 dBA to 73 dBA with three receivers representing eight residences and six receivers representing 0.27 ERU that currently experience traffic noise impacts due to levels approaching or exceeding the NAC.

5.0 Future Highway Traffic Noise Environment

5.1 Future Traffic Noise Model Input

To complete phase one of the PennDOT three-phased noise abatement approach, future traffic noise impacts in the Build alternative were identified at each receptor location with modeled traffic noise levels that either approach or exceed the NAC, or are substantially higher than the existing noise levels. To predict these noise levels, the existing noise model was revised to reflect conditions in the Build alternative as described in Section 3.3 above.

5.2 Future Noise Impact Assessment

Future traffic noise impacts are predicted to be prevalent on SR 0422, Section M2B in both the No Build and Build alternatives. As the proposed roadway geometry is similar to the existing roadway configuration, the noise increase in the Build alternative over the No Build Noise would average 0.5 dBA and primarily stem from the 24% increase in traffic over the No Build alternative as forecasted by DVRPC. The additional traffic noise is partially offset by the construction of a 50-inch tall concrete median barrier along the length of the SR 0422, Section M2B where none currently exists. All noise impacts in the No Build alternative would also be present in the Build alternative.

All traffic noise impacts were due to modeled noise levels approaching or exceeding the NAC for Activity Category B (i.e., residential,) and none were due to a substantial increase (i.e., 10 dBA) over existing noise levels. All NSA's studied in this Draft Final Design Noise Study are predicted to be impacted by traffic noise. See Appendix B for graphics showing the location of each noise impact, and Appendix A for tables showing the future noise levels predicted at each modeled receptor. Traffic noise impacts were identified in the Build alternative for 16 residences and 31.3 ERU at the Laurelwood Swim Club in NSA A, one residence and 1.5 ERU in River Bend Park in NSA B, one residence in NSA C, six residences in NSA D, and eight residences and 0.41 ERU at the Mount Zion Cemetery in NSA E. As such, noise abatement within SR 0422, Section M2B is warranted.

Per PennDOT guidance, highway traffic noise analyses will be performed for developed lands as well as undeveloped lands if they are considered "permitted." Undeveloped lands are deemed to be permitted when there is a definite commitment to develop land with an approved specific design of land use activities as evidenced by the issuance of at least one building permit. In accordance with PennDOT policy, an undeveloped lot is considered to be planned, designed, and programmed if a building permit has been issued by the local authorities prior to the Date of Public Knowledge for the relevant project. PennDOT considers the "Date of Public Knowledge" as the date that the final NEPA approval is made, and thereafter would have no obligation to provide noise mitigation for any undeveloped land that is permitted or constructed. Coordination with a North Coventry Township Administrative Assistant in November 2020 determined that no undeveloped and permitted land uses would be present within or adjacent to SR 0422, Section M2B. For undeveloped lands with no development permitted, PennDOT policy requires the prediction of future noise levels for use by local planning officials. See Appendix B for graphics showing contours showing the distances at which the NAC for each land use activity category would be approached.

6.0 Highway Traffic Noise Consideration and Abatement Alternatives

6.1 Abatement Alternatives

FHWA and PennDOT noise abatement guidelines recommend a variety of abatement measures that should be considered in response to transportation-related noise impacts. While noise barriers and/or earth berms are generally the most effective form of noise mitigation, additional mitigation measures exist which have the potential to provide considerable noise reductions. Mitigation measures considered for this project include traffic control measures; alteration of horizontal and vertical alignments; acoustical Insulation of public-use and non-profit (i.e. Activity Category D) facilities; acquisition of buffer land; and the construction of earthen berms and/or noise barriers.

Due to the purpose and need of the proposed highway project, traffic control and alignment alteration measures were not deemed to be feasible abatement options. The acquisition of buffer land was also deemed to be not feasible as this option would result in significant residential displacements due to high density of development in the project area. In addition, acoustical insulation was not considered as no Activity Category D noise impacts were identified. As a result, the construction of noise barriers was selected as the noise abatement alternative evaluated for all NSA's where traffic noise impacts were identified in this Draft Final Design Noise Study.

6.2 Feasibility and Reasonableness Criteria

Noise abatement determinations are based on PennDOT's three phased approach: warranted, feasibility, and reasonableness. The first phase determines whether noise abatement is warranted, the results of which are summarized in Section 5.2 above. Under the Build alternative, traffic noise levels are predicted to approach or exceed the FHWA and PennDOT noise abatement criteria at 36 receiver locations representing 32 residences and 33.21 ERU at non-residential locations, thus warranting noise abatement consideration.

The second phase evaluates noise abatement alternatives and determines whether any meet the feasibility criteria. The chosen noise abatement alternative is considered feasible if it provides a noise reduction of at least 5 dBA for a majority (i.e. 50 percent or greater) of the impacted receptors. In addition, a feasible noise abatement measure would not cause unsafe roadway conditions or other engineering constraints such as restricting access to vehicular or pedestrian travel, interfering with maintenance activities, utilities and/or drainage, and incurring extraordinary costs associated with structural reinforcement or right-of-way purchase.

The third phase of noise abatement determination evaluates whether the proposed abatement options meet the reasonableness criteria, as described below. Noise abatement must be both feasible and reasonable to be recommended for implementation.

Cost Reasonableness Value

The reasonable cost value for noise barriers is 2,000 based upon a maximum square footage of abatement per benefited receptor (MaxSF/BR.) The square footage of the barrier is determined based on its length and height from the finished ground elevation at the base of the barrier to its top elevation. The total number of benefited receptors includes all receptors that would receive a 5 dBA or greater insertion loss from the noise barrier.

Noise Reduction Design Criteria and Goals

Per 23 CFR 772, a noise reduction design goal is required for highway traffic noise abatement evaluation. Noise reduction is measured by comparing Build alternative pre- and post-barrier noise levels. This difference between unabated and abated noise levels is known as insertion loss. PennDOT has defined the noise reduction design goal as achieving at least 7 dBA of insertion loss for at least one benefited receptor while insertion losses of 7 dBA or above are desired for additional impacted receptors as justifiable by the point of diminishing acoustical return on increasing barrier height.

In addition to the above criteria and design goals, it is desirable to reduce future exterior noise levels back to existing exterior noise levels as well as reduce future exterior noise levels to the low 60 dBA range (i.e., 60 dBA to 63 dBA) for Activity Category B and Activity Category C receptors, and the upper 60 dBA range (i.e., 65 dBA to 68 dBA) for Activity Category E receptors.

Consideration of Viewpoints

As related to the viewpoints of property owners and residences, the viewpoints of all benefited receptors shall be solicited in order to obtain enough responses to document a decision on either desiring or not desiring a noise abatement measure. Although the public may express opinions regarding the desire for or against particular noise abatement measures at any point in the development of a project, the solicitation of viewpoints does not formally occur until information contained within the draft version of this Draft Final Design Noise Study has been approved for circulation to the public by PennDOT and FHWA. This process assures the public has access to the results of noise analyses prior to making any decision related to the desire for or available choices associated with noise abatement measures.

6.3 Noise Abatement Evaluation

Three of the five noise barriers evaluated in NSA's impacted by traffic noise in the Build alternative were found to be both feasible and reasonable per the PennDOT three-phased approach to noise abatement determination and, as such, are recommended for implementation. The three recommended barriers total 4,272 feet in length and 68,287 square feet in area, and would benefit 31.75 ERU at non-residential locations and 58 residences, including all but four receiver locations in NSA E (representing 0.18 ERU in the east edge of Mount Zion Cemetery approximately 50 feet above roadway grade) predicted to be impacted by traffic noise.

Nearly all impacted residences (88 percent) would also receive the desired noise reduction design goal of 7-dBA insertion loss. The feasibility and reasonableness assessment of each barrier is summarized in Table 6-1.

Table 6-1: Noise Abatement Feasibility and Reasonableness Assessment

Barrier	Average Insertion Loss* (dBA)	Average Height (ft)	Total Length (ft)	Total Area (SF)	Receptors Benefited	Area per Benefited Receptor	Feasible	Reasonable
A	7	12.9	2,075	26,529	62.3	426	Yes	Yes
B	7	19	732	13,898	1.5	9,265	Yes	No
C	7	22.5	199	4,375	1	4,375	Yes	No
D	7	22.0	1,026	22,442	14	1,603	Yes	Yes
E	6	16.2	1,171	19,316	13.45	1,436	Yes	Yes

*For benefited receptors with insertion loss of at least 5 dBA

Each evaluated noise barrier was modeled in the TNM with a wall panel length of 16 feet and shorter as warranted by the one-foot horizontal and vertical accuracy requirement of the modeling environment. The optimization of barrier lengths and heights was performed on a per-panel basis to meet and be consistent with noise reduction targets for impacted receiver locations. For each recommended barrier, acoustical profiles were developed as based on optimized barrier lengths and panel heights and are available for final engineering design as well as for review in the TNM. As developed for and presented in this Draft Final Design Noise Study, the dimensions and locations of all recommended barriers were confirmed to be free of conflict with all constructability aspects of the feasibility criteria such as vehicle and pedestrian safety, utilities and drainage, and access for maintenance purposes as well as to adjacent properties. Furthermore, a sightline analysis was performed in the TNM as well as third-party modeling software to confirm that all recommended noise barriers as designed in this Draft Final Design Noise Study would have sufficient height to obstruct all visual sightlines that are acoustically relevant between residences and traffic noise sources. Each barrier will be described below in turn and presented graphically in Appendix B which also show minimum heights comprising the acoustical profile of the proposed noise barriers. Per PennDOT and FHWA guidelines, warranted, feasible, and reasonable worksheets are required to be completed for all impacted noise sensitive receptors within the study area and are included in Appendix H.

Barrier A

Barrier A was evaluated as a single continuous wall along eastbound SR 0422 to provide noise abatement for 16 residences and 31.3 ERU at the Laurelwood Swim Club predicted to be impacted by traffic noise in NSA A. At an average height of 12.9 feet and a length of 2,075 feet, Barrier A is predicted to average 7 dBA of insertion loss at benefited receptors and benefit 31 residences and 31.3 non-residential ERU including all receptors impacted in the Build alternative. The maximum panel height of the bridge-mounted section of Barrier A over Laurelwood Road would be limited to 13.5 feet, and not more than 10 feet above designed bridge parapet.

With an optimized surface area of 26,529 square feet, Barrier A would achieve a cost reasonableness value of 426 square feet of abatement per benefited receptor as well as achieve the noise reduction design goal of 7-dBA insertion loss for 17 residences and 31.3 non-residential ERU which includes 98 percent of all

receptors impacted in NSA A. All future noise levels are predicted to be reduced to the low 60 dBA range as well as back to existing noise levels.

Barrier A would be feasible and reasonable per PennDOT noise abatement determination policy and is therefore recommended for construction.

Barrier B

Barrier B was evaluated as a single continuous wall along westbound SR 0422 to provide noise abatement for one residence and 1.5 ERU in River Bend Park predicted to be impacted by traffic noise in NSA B. At an average height of 19 feet and a length of 732 feet and an optimized surface area of 13,898 square feet, Barrier B is predicted to average 7 dBA of insertion loss at benefited receptors and benefit 1.5 non-residential ERU in the Build alternative that are impacted by traffic noise.

Although Barrier B would benefit the impacted receiver B-01 at River Bend Park as well as meet the design goal of 7 dBA insertion loss, Barrier B would have a cost reasonableness value of 9,265 square feet of abatement per benefited receptor, which exceeds the 2,000 MaxSF/BR cost reasonableness criteria. Due to the setback of and wide spacing between residences in this NSA, attempts to reduce the noise barrier area and decrease the cost reasonableness value by benefiting additional receptors, including impacted receiver B-04, were unsuccessful. As such, Barrier B would be feasible but not reasonable per PennDOT noise abatement determination policy and is therefore not recommended for construction.

Barrier C

Barrier C was evaluated as a single continuous wall along the SR 0422 westbound off-ramp to South Hanover Street to provide noise abatement for receiver C-20 predicted to be impacted by traffic noise in NSA C. At an average height of 22.5 feet and a length of 199 feet and an optimized surface area of 4,375 square feet, Barrier C is predicted to average 7 dBA of insertion loss at benefited receiver C-20 in the Build alternative that is impacted by traffic noise.

Although Barrier C would benefit the impacted receiver C-20 and meet the design goal of 7 dBA insertion loss, Barrier C would have a cost reasonableness value of 4,375 square feet of abatement per benefited receptor, which exceeds the 2,000 MaxSF/BR cost reasonableness criteria. As such, Barrier C would be feasible but not reasonable per PennDOT noise abatement determination policy and is therefore not recommended for construction.

Barrier D

Barrier D was evaluated for NSA D as a system of two overlapping walls that are gapped to accommodate drainage requirements. A maximum panel height of Barrier D of 26 feet was required to break all acoustically relevant lines of sight between impacted receiver D-01 and the top of heavy trucks on the roadway, as well as accommodate stormwater drainage requirements of SR 0422 which is on embankment in this area. At an average height of 22.0 feet and a length of 1,026 feet, Barrier D is predicted to average 7 dBA of insertion loss at benefited receptors and benefit 14 residences in the Build alternative, including all impacted receptors. Receiver D-08 is not benefited by the proposed noise barrier due to a greater degree of acoustical shielding from existing first-row structures, compared to adjacent benefited receivers.

With an optimized surface area of 22,442 square feet, Barrier D would achieve a cost reasonableness value of 1,603 square feet of abatement per benefited receptor as well as achieve the noise reduction design goal of 7-dBA insertion loss for three impacted residences which includes 50 percent of impacted locations in NSA D. All future noise levels are predicted to be reduced to the low 60 dBA range as well as back to existing noise levels.

A berm has been proposed underneath Barrier D west of the South Hanover Street to 0422 eastbound on-ramp. However, this berm is not an element of the noise abatement design. Instead, it is incorporated for purposes such as re-grading or corridor waste balancing, and it contributes to the overall design by potentially decreasing the barrier panel heights required to meet the top-of-wall height profile. For a detailed breakdown of heights between the berm and the barrier, refer to the Barrier D graphic in Appendix B.

Barrier D would be feasible and reasonable per PennDOT noise abatement determination policy and is therefore recommended for construction.

Barrier E

Barrier E was evaluated for NSA E as a single continuous wall along eastbound SR 0422. At an average height of 16.2 feet and a length of 1,171 feet, Barrier E is predicted to average 6 dBA of insertion loss at benefited receptors and benefit 13 residences and 0.45 ERU in the Mount Zion Cemetery in the Build alternative, including nearly all (98 percent) impacted receptors except for the east edge of Mount Zion Cemetery located approximately 50 feet above roadway elevation. The maximum panel height of the bridge-mounted section of Barrier E over South Hanover Street would be limited to 13.5 feet, and not more than 10 feet above designed bridge parapet.

With an optimized surface area of 19,316 square feet, Barrier E would achieve a cost reasonableness value of 1,436 square feet of abatement per benefited receptor as well as achieve the noise reduction design goal of 7-dBA insertion loss for eight impacted residences and 0.09 ERU which includes 96 percent of impacted locations in NSA E. At the east edge of Mount Zion Cemetery, Barrier E does not extend to cover impacted receivers E-06, E-07, E-16 and E-17 as noise abatement would not be feasible at the maximum allowable barrier height of 30 feet due to their locations approximately 50 feet above roadway elevation. Except for these Mount Zion Cemetery receivers that would remain impacted, all future noise levels are predicted to be reduced to the low 60 dBA range as well as back to existing noise levels.

Barrier E would be feasible and reasonable per PennDOT noise abatement determination policy and is therefore recommended for construction.

7.0 Construction Noise Consideration and Abatement Opportunities

It is anticipated that construction of this project will result in increased noise levels, though temporary, throughout the project area. The increase in noise within the adjacent communities are generated from construction activities which include but are not limited to the clearing of land, the construction of roadways and related features, and the moving of construction equipment such as diesel-powered earth-moving equipment (i.e. dump trucks and bulldozers), compressors, and pile drivers.

Noise levels from diesel-powered equipment range between 80 to 95 dBA at a distance of 50 feet according to the FHWA Construction Noise Handbook (FHWA, August 2006). Impact equipment, such as pile drivers, can potentially generate louder noise levels. However, noise levels during construction are difficult to predict since the type of construction activity and the equipment used varies during each stage of work. Additionally, construction activities are not usually located at one location for very long or are consistently generating noise for a specific duration.

While that may be the case, it is necessary to provide reasonable abatement measures for construction noise to minimize any potential impacts for the adjacent communities despite their temporary nature. The contractor shall use equipment adapted to operate with the least possible noise and shall conduct work so that any annoyance to occupants of nearby property and the general public will be minimized during construction.

8.0 Public Involvement Process

As part of the noise mitigation process and the PennDOT noise policy, consideration of the public's needs and preference must be taken into account when determining the reasonableness of noise mitigation within the project area. In order to do so, outreach to the local community through a public meeting is necessary to allow for public input. The noise analysis and proposed mitigation information will be presented to the public at a scheduled virtual public meeting following the approval of this report. Coordination with local officials is necessary to ensure participation from both residents and property owners within the adjacent communities who may be potentially affected by this project have the opportunity to provide their input.

The purpose of the public meeting is also to determine the desires of benefitted receptors. Whether or not noise barriers that satisfy all feasible and reasonable criteria of the PennDOT noise policy will be constructed as well as the barrier's color and texture will be determined by the community through a voting process. Of all the votes tallied, a 50% or great margin must be in favor of the proposed noise barrier in order for the noise barrier to be considered reasonable per PennDOT noise policy. Voting results will be assessed by the project team as well as the Engineering District for votes not in favor of the proposed noise wall on an individual proposed noise barrier basis in order to provide a comprehensive assessment of the overall proposed noise mitigation. Once a determination is made on the recommended noise barriers, the results will be documented and included in the Final Design Noise Report.

Appendix A

Traffic Noise Modeling and Abatement Results

Table 1 - Traffic Noise Modeling and Abatement Results

Noise level approaching or exceeding the NAC								
Noise level exceeding 63-dBA secondary design goal								
Noise reduction of 5+ dBA								
Noise reduction of 7+ dBA								
Receptor	NAC	Land Use	Receptor / ERU	Modeled Noise Levels (dBA)				
				Existing	No Build	Build Alternative		
						No Barrier	With Barrier	Insertion Loss*
A-01	C	Laurelwood Swim Club	31.3	70	70	70	63	7
A-02	B	Residence	1	67	68	69	61	8
A-03	B	Residence	1	67	68	69	61	8
A-04	B	Residence	1	67	68	69	61	8
A-05	B	Residence	1	68	68	69	60	8*
A-06	B	Residence	1	68	68	69	60	9
A-07	B	Residence	1	67	67	68	60	8
A-08	B	Residence	1	67	67	68	60	8
A-09	B	Residence	1	66	67	68	59	8*
A-10	B	Residence	2	67	68	68	59	10*
A-11	B	Residence	1	67	68	67	59	9*
A-12	B	Residence	1	67	68	68	60	7*
A-13	B	Residence	1	65	65	66	62	5*
A-14	B	Residence	1	63	64	64	58	6
A-15	B	Residence	1	65	65	67	57	10
A-16	B	Residence	2	65	65	66	56	10
A-17	B	Residence	4	63	64	64	59	6*
A-18	B	Residence	1	61	62	62	58	4
A-19	B	Residence	1	59	60	60	57	3
A-20	B	Residence	1	58	59	59	55	3*
A-21	B	Residence	1	59	60	60	56	4
A-22	B	Residence	1	58	58	59	55	4
A-23	B	Residence	1	59	60	61	56	5
A-24	B	Residence	1	61	61	61	55	7*
A-25	B	Residence	1	60	60	61	55	6
A-26	B	Residence	1	61	61	62	58	6*
A-27	B	Residence	1	60	60	60	55	7*
A-28	B	Residence	2	58	59	59	55	5*
A-29	B	Residence	2	56	57	57	55	3*
A-30	B	Residence	1	60	60	60	58	3*
A-31	B	Residence	1	56	56	56	54	4*
A-32	B	Residence	1	58	59	59	53	6
A-33	B	Residence	1	57	58	57	53	4
A-34	B	Residence	1	59	59	60	56	5*
A-35	B	Residence	1	57	57	57	55	3*
A-36	B	Residence	2	55	56	56	54	3*
A-37	B	Residence	1	55	55	55	54	1

*Noise values, comparisons, and insertion losses are calculated to the tenth of a dBA and then rounded for presentation purposes.

Noise level approaching or exceeding the NAC								
Noise level exceeding 63-dBA secondary design goal								
Noise reduction of 5+ dBA								
Noise reduction of 7+ dBA								
Receptor	NAC	Land Use	Receptor / ERU	Modeled Noise Levels (dBA)				
				Existing	No Build	Build Alternative		
						No Barrier	With Barrier	Insertion Loss*
A-38	B	Residence	1	57	58	58	53	5
A-39	B	Residence	1	52	52	53	51	2
A-40	B	Residence	1	54	55	55	53	2
A-41	B	Residence	1	56	56	56	54	2
A-42	B	Residence	1	56	56	57	54	3
A-43	B	Residence	1	55	56	56	52	4
A-44	B	Residence	2	53	53	54	51	3
A-45	B	Residence	1	54	55	55	54	2*
A-46	B	Residence	1	54	55	55	54	2*
A-47	B	Residence	1	54	55	55	52	3
A-48	B	Residence	1	53	54	54	53	2*
A-49	B	Residence	2	54	54	55	53	2
A-50	B	Residence	1	50	51	52	50	1*
A-51	B	Residence	1	52	52	53	49	3*
A-52	B	Residence	1	52	52	53	52	1
A-53	B	Residence	1	56	56	56	55	2*
A-54	C	Bryton Park	1.3	52	53	54	53	1
A-55	B	Residence	3	52	52	53	53	1*
A-56	B	Residence	5	52	52	53	51	2
A-57	B	Residence	2	51	52	53	50	3
A-58	B	Residence	2	54	55	55	54	1
A-59	B	Residence	1	47	47	49	47	2
A-60	B	Residence	1	54	54	55	54	1
A-61	B	Residence	1	51	51	52	50	1*
A-62	B	Residence	1	65	65	65	65	0
B-01	C	River Bend Park	1.5	64	65	66	60	7*
B-01a	C	River Bend Park	0.38	61	61	63	59	3*
B-02	B	Residence	1	61	62	63	60	3
B-03	B	Residence	1	61	62	63	60	3
B-04	B	Residence	1	63	64	66	62	4
B-05	B	Residence	1	61	61	63	61	2
B-06	B	Residence	1	62	63	64	64	0
B-07	B	Residence	1	60	61	62	62	1*
B-08	B	Residence	1	61	62	63	63	0
B-09	C	River Bend Park	0.38	58	59	60	58	2
B-10	C	River Bend Park	1.5	60	61	62	61	1
C-01	B	Residence	1	63	64	65	65	0

*Noise values, comparisons, and insertion losses are calculated to the tenth of a dBA and then rounded for presentation purposes.

Noise level approaching or exceeding the NAC								
Noise level exceeding 63-dBA secondary design goal								
Noise reduction of 5+ dBA								
Noise reduction of 7+ dBA								
Receptor	NAC	Land Use	Receptor / ERU	Modeled Noise Levels (dBA)				
				Existing	No Build	Build Alternative		
						No Barrier	With Barrier	Insertion Loss*
C-02	B	Residence	2	62	62	63	63	0
C-03	B	Residence	2	58	59	60	60	0
C-04	B	Residence	1	59	59	60	60	0
C-05	B	Residence	1	61	62	63	63	0
C-06	B	Residence	1	60	61	62	62	0
C-07	B	Residence	1	62	62	63	63	0
C-08	B	Residence	1	60	61	62	62	0
C-09	B	Residence	2	61	61	62	62	0
C-10	B	Residence	1	61	61	62	62	0
C-11	B	Residence	2	60	60	61	61	0
C-12	B	Residence	1	60	61	62	62	0
C-13	B	Residence	1	61	61	62	62	0
C-14	B	Residence	1	61	61	62	62	0
C-15	B	Residence	1	61	62	63	63	0
C-16	B	Residence	1	61	61	62	62	0
C-17	B	Residence	2	59	59	60	60	0
C-18	B	Residence	2	65	65	65	65	0
C-19	B	Residence	2	63	64	64	64	0
C-20	B	Residence	1	66	67	67	60	7
C-21	B	Residence	1	62	63	63	60	3
C-22	B	Residence	1	61	61	62	60	2
C-23	B	Residence	3	61	62	62	62	0
C-24	B	Residence	3	57	58	58	58	0
C-25	B	Residence	2	60	61	62	61	0*
C-26	B	Residence	2	61	61	62	62	0
C-27	B	Residence	2	61	61	62	61	0*
C-28	B	Residence	2	56	57	57	57	0
C-29	B	Residence	2	57	57	58	58	0
C-30	B	Residence	2	57	58	58	58	0
C-31	B	Residence	2	57	58	59	58	0*
C-32	B	Residence	2	59	60	60	60	0
C-33	B	Residence	1	61	61	62	62	0
C-34	B	Residence	1	62	62	63	63	0
C-35	B	Residence	1	62	62	63	63	0
C-36	B	Residence	2	58	58	59	59	0
C-37	B	Residence	1	59	59	60	60	0
C-38	B	Residence	1	58	58	59	59	0
C-39	B	Residence	2	57	57	58	58	0

*Noise values, comparisons, and insertion losses are calculated to the tenth of a dBA and then rounded for presentation purposes.

Noise level approaching or exceeding the NAC								
Noise level exceeding 63-dBA secondary design goal								
Noise reduction of 5+ dBA								
Noise reduction of 7+ dBA								
Receptor	NAC	Land Use	Receptor / ERU	Modeled Noise Levels (dBA)				
				Existing	No Build	Build Alternative		
						No Barrier	With Barrier	Insertion Loss*
C-40	B	Residence	2	55	56	57	57	0
C-41	B	Residence	1	56	57	56	56	0
C-42	B	Residence	1	55	55	55	55	0
C-43	B	Residence	1	54	54	55	55	0
C-44	B	Residence	1	55	56	56	56	0
C-45	B	Residence	2	56	56	57	57	0
C-46	B	Residence	1	56	56	57	57	0
C-47	B	Residence	3	62	63	63	63	0
C-48	B	Residence	2	62	63	63	63	0
C-49	B	Residence	3	61	61	62	62	0
C-50	D	Living Hope Mennonite Fellowship	1	43	43	43	43	0
C-51	B	Residence	2	52	53	53	53	0
C-52	B	Residence	1	52	52	53	53	0
C-53	B	Residence	2	52	53	53	53	0
C-54	B	Residence	1	52	53	53	53	0
C-55	B	Residence	2	54	54	54	54	0
C-56	B	Residence	1	55	55	55	55	0
C-57	B	Residence	2	55	56	56	56	0
C-58	B	Residence	1	56	57	58	58	0
C-59	C	Coventry Little League	9.8	58	59	60	60	0
C-60	B	Residence	2	51	52	52	53	0*
C-61	B	Residence	1	53	53	54	54	0
C-62	B	Residence	1	53	53	54	54	0
C-63	B	Residence	1	54	54	54	54	0
C-64	B	Residence	2	51	51	52	52	0
C-65	B	Residence	1	52	53	53	53	0
C-66	B	Residence	1	52	53	53	53	0
C-67	C	Riverside Park	3.3	56	56	57	57	0
C-68	B	Residence	1	55	56	56	56	0
C-69	B	Residence	4	57	57	58	58	0
C-70	B	Residence	1	48	48	49	49	0
C-71	B	Residence	2	57	57	58	58	0
C-72	B	Residence	2	59	60	61	61	0
C-73	B	Residence	3	59	59	60	60	0
C-74	B	Residence	2	58	59	60	60	0
C-75	B	Residence	1	53	54	54	54	0
C-76	B	Residence	2	52	53	53	53	0

*Noise values, comparisons, and insertion losses are calculated to the tenth of a dBA and then rounded for presentation purposes.

Noise level approaching or exceeding the NAC								
Noise level exceeding 63-dBA secondary design goal								
Noise reduction of 5+ dBA								
Noise reduction of 7+ dBA								
Receptor	NAC	Land Use	Receptor / ERU	Modeled Noise Levels (dBA)				
				Existing	No Build	Build Alternative		
						No Barrier	With Barrier	Insertion Loss*
C-77	B	Residence	2	52	53	53	53	0
C-78	B	Residence	2	48	49	49	49	0
C-79	C	Penn Street Courts	5.4	52	52	53	53	0
C-80	C	Coventry Little League	9.8	54	54	55	55	0
C-81	B	Residence	3	53	53	54	54	0
C-82	B	Residence	3	49	50	50	50	0
C-83	C	Coventry Little League	9.8	51	51	52	52	0
C-84	C	Coventry Little League	9.8	56	57	58	58	0
D-01	B	Residence	1	71	72	73	63	10
D-02	B	Residence	1	73	74	74	60	15*
D-02a	B	Residence	1	73	74	75	60	15
D-03	B	Residence	1	67	67	67	63	5*
D-04	B	Residence	1	66	66	66	61	5
D-05	B	Residence	1	65	65	66	60	6
D-06	B	Residence	1	64	64	64	59	6*
D-07	B	Residence	1	61	61	62	57	5
D-08	B	Residence	1	60	61	62	57	4*
D-09	B	Residence	1	58	59	60	59	1
D-10	B	Residence	1	59	60	60	59	0*
D-11	B	Apartments at Dorchester Lane	1	58	59	58	53	5
D-12	B	Apartments at Dorchester Lane	1	56	56	56	50	6
D-13	B	Apartments at Dorchester Lane	1	54	54	54	48	5*
D-14	B	Apartments at Dorchester Lane	2	53	54	53	48	5
D-15	B	Apartments at Dorchester Lane	1	64	65	64	63	1
D-16	B	Apartments at Dorchester Lane	1	64	65	64	64	0
D-17	B	Apartments at Dorchester Lane	1	64	65	64	64	0
D-18	B	Apartments at Dorchester Lane	1	65	65	65	65	0
D-19	B	Residence	1	63	63	63	62	2*
D-20	B	Residence	1	59	60	60	59	1
D-21	B	Residence	1	58	58	59	57	2
D-22	B	Residence	1	57	58	58	55	3
D-23	B	Residence	1	59	59	60	55	5
D-24	B	Residence	1	57	58	58	53	4*
D-25	B	Residence	1	59	60	60	60	0
D-26	B	Residence	1	58	59	59	58	1
D-27	B	Residence	1	60	60	60	60	0
D-28	B	Residence	1	56	57	57	56	0*
D-29	B	Residence	1	50	51	51	50	1

*Noise values, comparisons, and insertion losses are calculated to the tenth of a dBA and then rounded for presentation purposes.

Noise level approaching or exceeding the NAC								
Noise level exceeding 63-dBA secondary design goal								
Noise reduction of 5+ dBA								
Noise reduction of 7+ dBA								
Receptor	NAC	Land Use	Receptor / ERU	Modeled Noise Levels (dBA)				
				Existing	No Build	Build Alternative		
						No Barrier	With Barrier	Insertion Loss*
D-30	B	Residence	1	55	56	55	54	1
D-31	B	Residence	1	54	54	54	53	1
D-32	B	Residence	1	52	52	52	51	1
D-33	B	Residence	2	56	56	56	55	0*
D-34	B	Residence	1	57	57	57	56	0*
D-35	B	Residence	1	58	58	57	57	1*
D-36	B	Residence	1	57	58	57	57	1*
D-37	B	Residence	2	58	59	59	59	0
D-38	B	Residence	1	54	55	55	55	0
D-39	B	Residence	1	50	51	51	51	0
D-40	B	Residence	1	46	46	47	45	1*
D-41	B	Residence	1	48	49	50	50	0
D-42	B	Residence	1	49	50	50	50	1*
D-43	B	Residence	2	51	52	52	51	1
D-44	B	Residence	1	50	50	51	50	1
D-45	B	Residence	1	50	51	52	51	0*
D-46	B	Residence	1	53	53	54	53	0*
D-47	B	Residence	1	54	55	55	54	1
D-48	B	Residence	1	55	56	55	55	1*
D-49	B	Residence	1	50	51	51	51	0
D-50	B	Residence	1	52	52	51	51	1*
D-51	B	Residence	1	54	54	54	54	0
E-01	B	Residence	1	67	68	68	60	8
E-01a	B	Residence	2	67	68	68	61	7
E-02	B	Residence	5	67	68	68	61	7
E-03	C	Mt Zion Cemetery	0.045	69	70	71	63	7*
E-04	C	Mt Zion Cemetery	0.045	69	69	70	65	5
E-05	C	Mt Zion Cemetery	0.045	69	69	70	65	5
E-06	C	Mt Zion Cemetery	0.045	69	70	72	70	1*
E-07	C	Mt Zion Cemetery	0.045	73	74	75	75	0
E-08	B	Residence	1	64	65	65	60	5
E-09	B	Residence	4	63	64	64	59	5
E-10	C	Mt Zion Cemetery	0.045	64	65	65	59	6
E-11	C	Mt Zion Cemetery	0.045	65	65	66	59	7
E-12	C	Mt Zion Cemetery	0.045	64	65	66	60	6
E-13	C	Mt Zion Cemetery	0.045	64	65	65	60	5
E-14	C	Mt Zion Cemetery	0.045	63	64	65	61	3*
E-15	C	Mt Zion Cemetery	0.045	63	63	64	63	1

*Noise values, comparisons, and insertion losses are calculated to the tenth of a dBA and then rounded for presentation purposes.

Noise level approaching or exceeding the NAC								
Noise level exceeding 63-dBA secondary design goal								
Noise reduction of 5+ dBA								
Noise reduction of 7+ dBA								
Receptor	NAC	Land Use	Receptor / ERU	Modeled Noise Levels (dBA)				
				Existing	No Build	Build Alternative		
						No Barrier	With Barrier	Insertion Loss*
E-16	C	Mt Zion Cemetery	0.045	65	65	68	67	0*
E-17	C	Mt Zion Cemetery	0.045	66	67	70	70	0
E-18	B	Residence	1	61	61	61	57	4
E-19	C	Mt Zion Cemetery	0.045	62	63	63	58	5
E-20	C	Mt Zion Cemetery	0.045	62	63	63	59	5*
E-21	C	Mt Zion Cemetery	0.045	62	63	63	59	5*
E-22	C	Mt Zion Cemetery	0.045	62	62	63	59	4
E-23	C	Mt Zion Cemetery	0.045	61	61	62	59	3
E-24	C	Mt Zion Cemetery	0.045	60	60	61	59	2
E-25	C	Mt Zion Cemetery	0.045	59	59	60	59	1
E-26	C	Mt Zion Cemetery	0.045	59	60	61	60	1
E-27	B	Residence	2	59	60	60	56	4
E-28	B	Residence	1	57	57	58	55	2*
E-29	C	Mt Zion Cemetery	0.045	61	61	61	57	4
E-30	C	Mt Zion Cemetery	0.045	61	61	62	57	4*
E-31	C	Mt Zion Cemetery	0.045	60	61	61	57	4
E-32	C	Mt Zion Cemetery	0.045	59	60	60	57	3
E-33	C	Mt Zion Cemetery	0.045	58	59	59	57	3*
E-34	C	Mt Zion Cemetery	0.045	57	58	59	56	2*
E-35	C	Mt Zion Cemetery	0.045	57	57	58	56	2
E-36	C	Mt Zion Cemetery	0.045	57	57	57	56	1
E-37	B	Residence	1	57	57	58	56	2
E-38	B	Residence	1	57	58	58	56	2
E-39	C	Mt Zion Cemetery	0.045	59	59	59	56	4*
E-40	C	Mt Zion Cemetery	0.045	58	59	59	56	4*
E-41	C	Mt Zion Cemetery	0.045	58	58	59	55	4
E-42	C	Mt Zion Cemetery	0.045	57	58	58	55	3

*Noise values, comparisons, and insertion losses are calculated to the tenth of a dBA and then rounded for presentation purposes.

Appendix B

Noise Study Areas and Abatement Locations

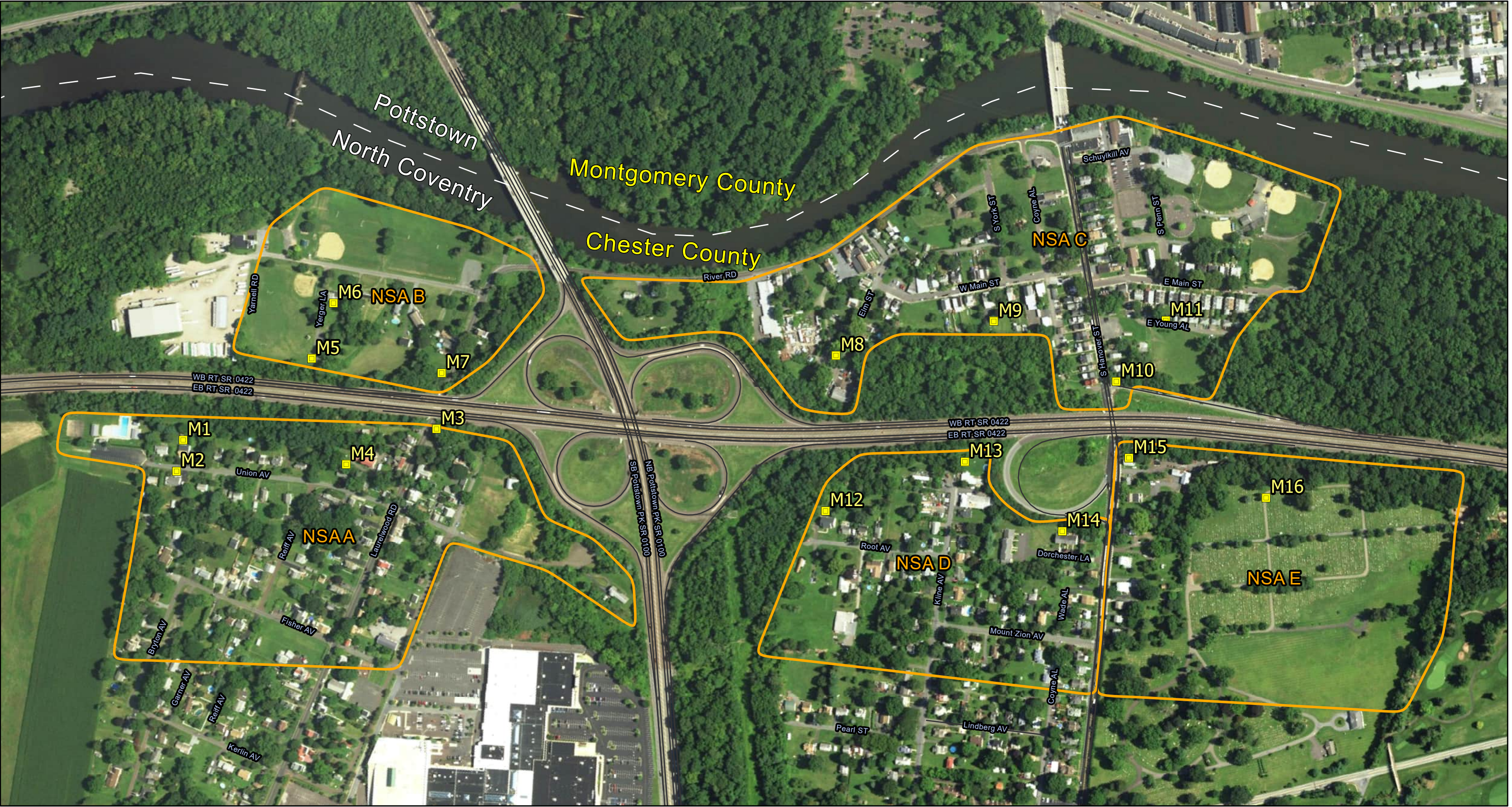


Figure 1 Noise Study Area Overview

SR 0422, SECTION M2B
SR 0422 POTTSTOWN BYPASS EXPRESSWAY RECONSTRUCTION PROJECT
NORTH COVENTRY TOWNSHIP, CHESTER COUNTY

- Legend: Features**
- Noise Study Area (NSA)
 - Noise Monitoring Sites
 - Proposed Roadway Lane Centerlines





Figure 2 Noise Sensitive Area A

SR 0422, SECTION M2B
SR 0422 POTTSTOWN BYPASS EXPRESSWAY RECONSTRUCTION PROJECT
NORTH COVENTRY TOWNSHIP, CHESTER COUNTY

0 125 250 500 US Feet

Scale: 1:2,200

Legend: Features

- Noise Study Area (NSA)
- Noise Monitoring Sites
- Proposed Roadway Lane Centerlines
- NOISE BARRIERS STUDIED**
 - Feasible and Reasonable
 - Feasible and Not Reasonable
- NOISE IMPACT CONTOUR**
 - Activity Category B & C - 66 dBA
 - Activity Category E - 71 dBA

NOISE RECEPTORS

- Impacted & Benefited
- Not Impacted & Benefited
- Impacted & Not Benefited
- Not Impacted & Not Benefited

BERM

- Berm Footprint
- Height of Berm
- Height of Barrier



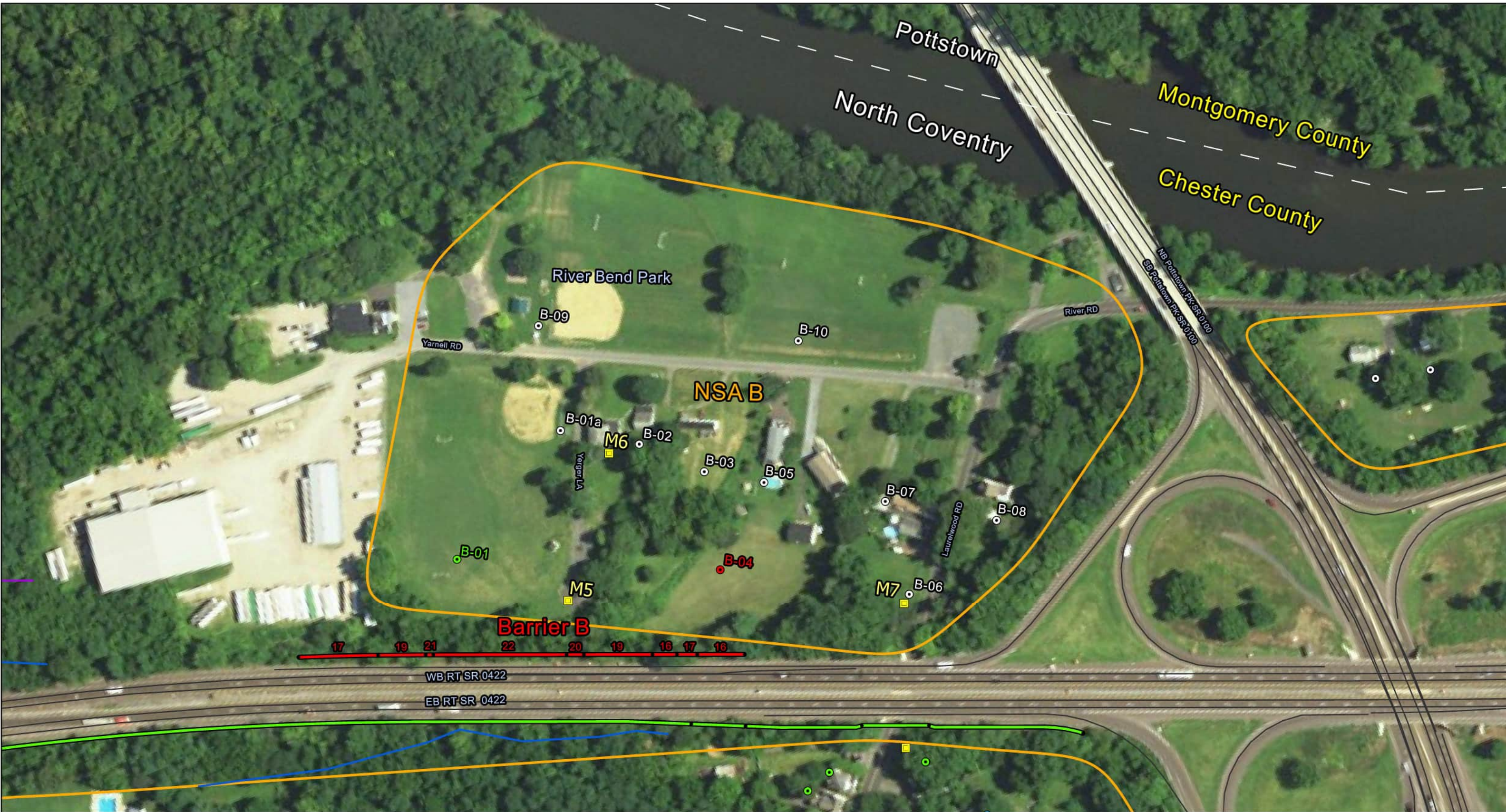


Figure 3 Noise Sensitive Area B

SR 0422, SECTION M2B
SR 0422 POTTSTOWN BYPASS EXPRESSWAY RECONSTRUCTION PROJECT
NORTH COVENTRY TOWNSHIP, CHESTER COUNTY

0 125 250 500 US Feet
Scale: 1:1,800

Legend: Features

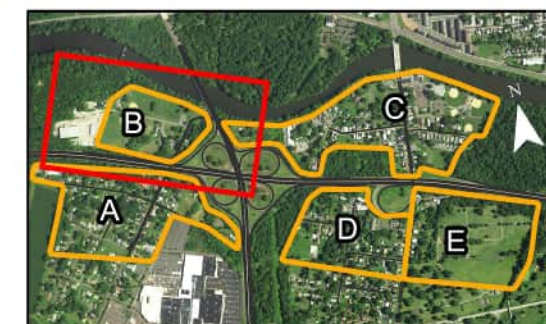
- Noise Study Area (NSA)
- Noise Monitoring Sites
- Proposed Roadway Lane Centerlines
- NOISE BARRIERS STUDIED
 - Feasible and Reasonable
 - Feasible and Not Reasonable
- NOISE IMPACT CONTOUR
 - Activity Category B & C - 66 dBA
 - Activity Category E - 71 dBA

NOISE RECEPTORS

- Impacted & Benefited
- Not Impacted & Benefited
- Impacted & Not Benefited
- Not Impacted & Not Benefited

BERM

- Berm Footprint
- Height of Berm
- Height of Barrier



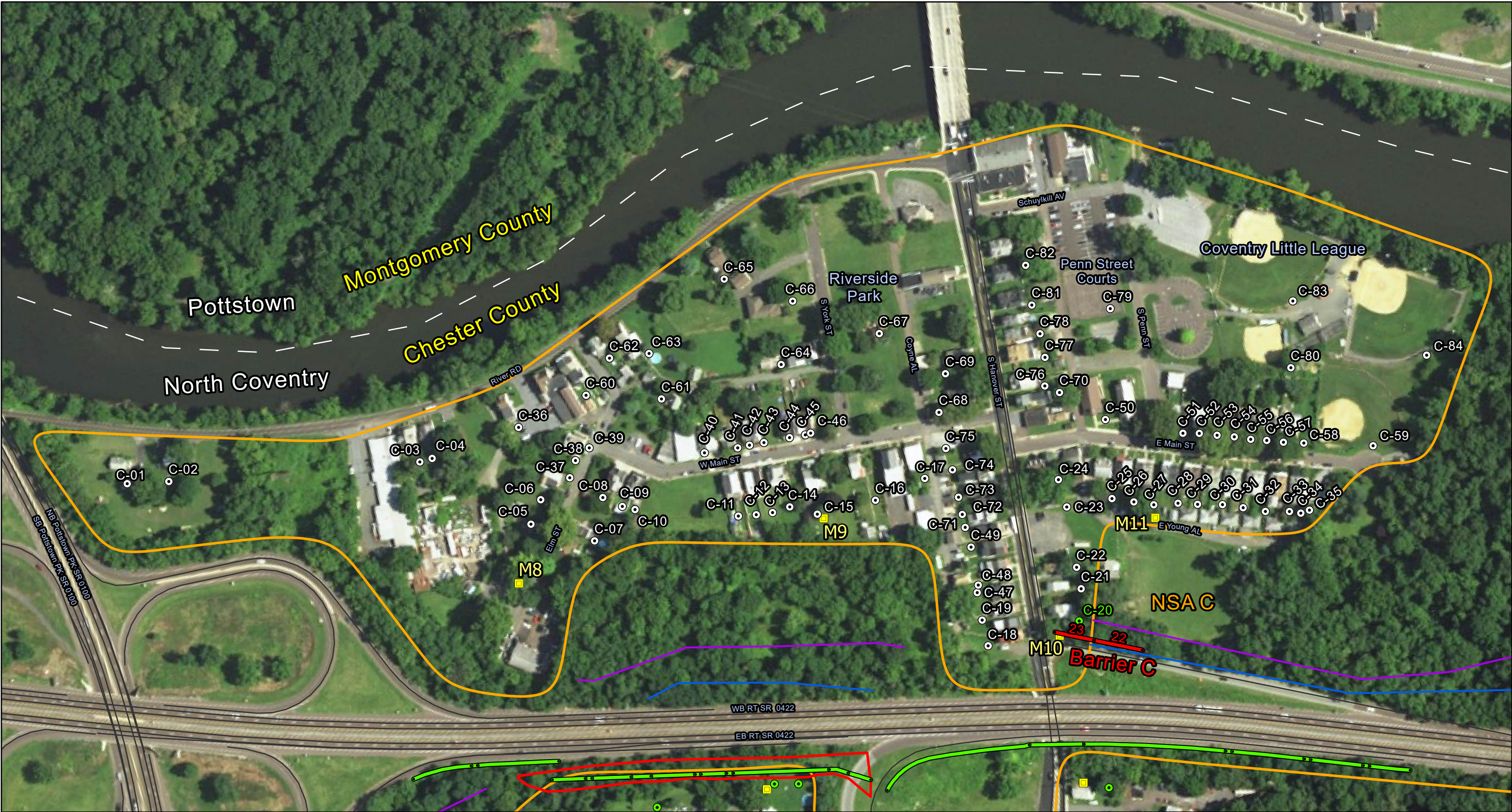


Figure 4 Noise Sensitive Area C

SR 0422, SECTION M2B
SR 0422 POTTSTOWN BYPASS EXPRESSWAY RECONSTRUCTION PROJECT
NORTH COVENTRY TOWNSHIP, CHESTER COUNTY

0 125 250 500 US Feet

Scale: 1:2,400

Legend: Features

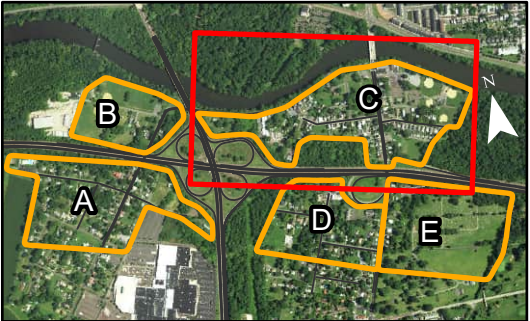
- Noise Study Area (NSA)
- Noise Monitoring Sites
- Proposed Roadway Lane Centerlines
- NOISE BARRIERS STUDIED**
- Feasible and Reasonable
- Feasible and Not Reasonable
- NOISE IMPACT CONTOUR**
- Activity Category B & C - 66 dBA
- Activity Category E - 71 dBA

NOISE RECEPTORS

- Impacted & Benefited
- Not Impacted & Benefited
- Impacted & Not Benefited
- Not Impacted & Not Benefited

BERM

- Berm Footprint
- Height of Berm
- Height of Barrier



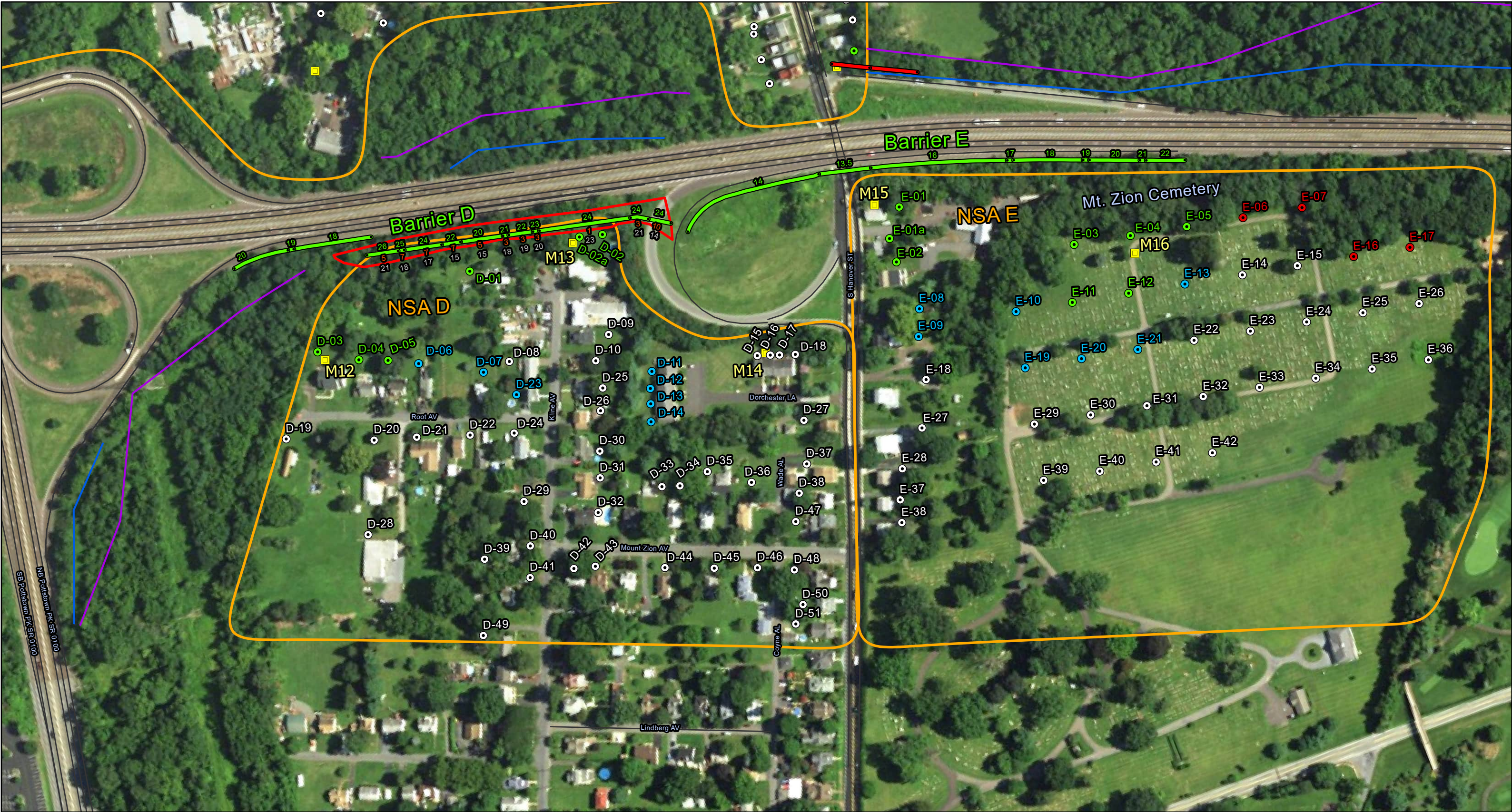


Figure 5 Noise Sensitive Area D and E

SR 0422, SECTION M2B
SR 0422 POTTSTOWN BYPASS EXPRESSWAY RECONSTRUCTION PROJECT
NORTH COVENTRY TOWNSHIP, CHESTER COUNTY

0 125 250 500 US Feet

Scale: 1:2,500

Legend: Features

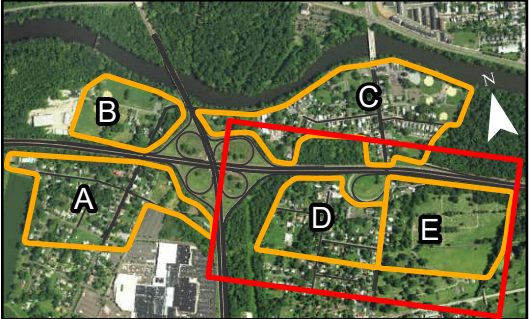
- Noise Study Area (NSA)
- Noise Monitoring Sites
- Proposed Roadway Lane Centerlines
- NOISE BARRIERS STUDIED**
 - Feasible and Reasonable
 - Feasible and Not Reasonable
- NOISE IMPACT CONTOUR**
 - Activity Category B & C - 66 dBA
 - Activity Category E - 71 dBA

NOISE RECEPTORS

- Impacted & Benefited
- Not Impacted & Benefited
- Impacted & Not Benefited
- Not Impacted & Not Benefited

BERM

- Berm Footprint
- Height of Berm
- Height of Barrier



Appendix C

Noise Meter Laboratory Calibration Certificates

INSTRUMENT CALIBRATION REPORT



Advanced Labs, Inc.

Pine Environmental Services, Inc

Instrument ID R3314
Description Quest QC-10 Acoustic Calibrator
Calibrated 7/9/2020

Manufacturer Quest
Model Number QC-10
Serial Number Q19070022
Location New Jersey
Temp 75

Classification
Status pass
Frequency Yearly EOM
Department Lab
Humidity 44

Calibration Specifications

Group # 1

Group Name Acoustic Tests Performed

Test Performed: Yes

As Found Result: Fail

As Left Result: Pass

Test Instruments Used During the Calibration

Test Instrument ID	Description	Manufacturer	Serial Number	(As Of Cal Entry Date)	
				Last Cal Date	Next Cal Date
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	7/2/2020	7/2/2021
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	7/2/2020	7/2/2021
SOUNDPRO DL-1-1/3	3M SoundPro DL-1-1/3	Quest Technologies	BLL070002	1/31/2020	1/31/2021

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Kevin Cole

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.

INSTRUMENT CALIBRATION REPORT



Pine Environmental Services LLC

92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID R3314
Description QC-10
Calibrated 7/23/2020 9:06:21AM

Manufacturer Quest
Model Number QC-10
Serial Number/ Lot Number Q19070022
Location New Jersey
Department

State Certified
Status Pass
Temp °C 20
Humidity % 30

Calibration Specifications

Group # 1
Group Name
Test Performed: Yes As Found Result: Pass

As Left Result: Pass

Test Instruments Used During the Calibration

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	(As Of Cal Entry Date)	
					Last Cal Date / Opened Date	Next Cal Date / Expiration Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated David Galego

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

INSTRUMENT CALIBRATION REPORT



Advanced Labs

Pine Environmental Services, Inc

Instrument ID 25506
Description Quest SoundPro DL-1-1/3
Calibrated 7/16/2020

Manufacturer Quest
Model Number SoundPro DL-1-1/3
Serial Number BLN040003
Location New Jersey
Temp 74

Classification
Status pass
Frequency Yearly EOM
Department Lab
Humidity 36

Calibration Specifications

Group # 1

Group Name Acoustic Tests Performed

Test Performed: Yes

As Found Result: Fail

As Left Result: Pass

Test Instruments Used During the Calibration

Test Instrument ID	Description	Manufacturer	Serial Number	(As Of Cal Entry Date)	
				Last Cal Date	Next Cal Date
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	7/2/2020	7/2/2021
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	7/2/2020	7/2/2021

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Kevin Cole

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.

INSTRUMENT CALIBRATION REPORT



Advanced Labs, Inc.

Pine Environmental Services, Inc

Instrument ID 36854
Description Quest SoundPro DL-1-1/3
Calibrated 7/9/2020

Manufacturer Quest
Model Number SoundPro DL-1-1/3
Serial Number BL1050006D
Location New Jersey
Temp 76

Classification
Status pass
Frequency Yearly
Department Lab
Humidity 46

Calibration Specifications

Group # 1
Group Name Acoustic Tests Performed
Test Performed: Yes As Found Result: Fail As Left Result: Pass

Test Instruments Used During the Calibration

Test Instrument ID	Description	Manufacturer	Serial Number	(As Of Cal Entry Date)	
				Last Cal Date	Next Cal Date
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	7/2/2020	7/2/2021
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	7/2/2020	7/2/2021

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Kevin Cole

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.

INSTRUMENT CALIBRATION REPORT



Pine Environmental Services LLC

92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID 36854

Description Quest SoundPro DL-1-1/3

Calibrated 7/10/2020 8:11:55AM

Manufacturer Quest

Model Number SoundPro DL-1-1/3

Serial Number/ Lot Number BLI050006D

Location New Jersey

Department

State Certified

Status Pass

Temp °C 25

Humidity % 42

Calibration Specifications

Group # 1

Group Name Calibrated to 114db w/ Quest
Sound Source

Test Performed: Yes **As Found Result: Pass**

As Left Result: Pass

Test Instruments Used During the Calibration

<u>Test Standard ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number / Lot Number</u>	<u>(As Of Cal Entry Date)</u>	
					<u>Last Cal Date/ Opened Date</u>	<u>Next Cal Date / Expiration Date</u>

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Kemar Rumble

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

INSTRUMENT CALIBRATION REPORT



Advanced Labs, Inc.

Pine Environmental Services, Inc

Instrument ID A02689
Description Quest QC-10 Acoustic Calibrator
Calibrated 12/18/2019

Manufacturer Quest
Model Number QC-10
Serial Number QIG080320
Location New Jersey
Temp 72

Classification
Status pass
Frequency Yearly EOM
Department Lab
Humidity 25

Calibration Specifications

Group # 1

Group Name Acoustic Tests Performed

Test Performed: Yes

As Found Result: Pass

As Left Result: Pass

Test Instruments Used During the Calibration

Test Instrument ID	Description	Manufacturer	Serial Number	(As Of Cal Entry Date)	
				Last Cal Date	Next Cal Date
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	6/4/2019	6/4/2020
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	6/4/2019	6/4/2020
SOUNDPRO	3M SoundPro DL-1-1/3	Quest Technologies	BLL070002	1/16/2019	1/16/2020

Notes about this calibration

Calibration Result Calibration Successful

Who Calibrated David Galego

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.



INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC

92 North Main St, Building 20
Windsor, NJ 08561

Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID A02689
Description Quest QC-10
Calibrated 7/23/2020 9:05:57AM

Manufacturer Quest
Model Number QC-10
Serial Number/ Lot Number QIG080320
Location New Jersey
Department

State Certified
Status Pass
Temp °C 20
Humidity % 30

Calibration Specifications

Group # 1

Group Name

Test Performed: Yes **As Found Result:** Pass

As Left Result: Pass

Test Instruments Used During the Calibration

<u>Test Standard ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number / Lot Number</u>	<u>(As Of Cal Entry Date)</u>
					<u>Last Cal Date /</u> <u>Opened Date</u> <u>Next Cal Date /</u> <u>Expiration Date</u>

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated David Galego

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

INSTRUMENT CALIBRATION REPORT



Pine Environmental Services LLC

92 North Main St, Building 20
Windsor, NJ 08561
Toll-free: (800) 301-9663

Pine Environmental Services, Inc.

Instrument ID 25506

Description Quest SoundPro DL-1-1/3, 1/1

Calibrated 7/17/2020 8:32:21AM

Manufacturer Quest

Model Number SoundPro DL-1-1/3, 1/1

Serial Number/ Lot BLN040003

Number

Location New Jersey

Department

State Certified

Status Pass

Temp °C 22

Humidity % 37

Calibration Specifications

Group # 1

Group Name Calibrated to 114db w/ Quest
Sound Source

Test Performed: Yes

As Found Result: Pass

As Left Result: Pass

Test Instruments Used During the Calibration

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	(As Of Cal Entry Date)	
					Last Cal Date/ Opened Date	Next Cal Date / Expiration Date

Notes about this calibration

Calibration Result Calibration Successful

Who Calibrated Kemar Rumble

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

Appendix D

Noise Monitoring Data Sheets

SR 0422 M2B Noise Study

Session # _____ **Date** 7/28/2020 **Description :** Backyard of residential home
Site # M1 **Time** 11:47 AM
Technician: SM

Traffic	WB	EB	Speed Readings
Cars	265	615	
MT	24	26	
HT	17	23	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	65.6 dBA		
Notes:			

Suspect that trees provide attenuation at this site.

Wind Conditions _____



North

SR 0422 M2B Noise Study

Session # _____ **Date** 7/28/2020 **Description :** Frontyard of residential home
Site # M2 **Time** 11:53 AM
Technician: SRM

Traffic	WB	EB	Speed Readings
Cars	278	271	55
MT	25	26	65
HT	20	19	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	59.2 dBA		
Notes:			

Mail Truck idled nearby for about 45 seconds, paused reading until it left.

Some shielding from first row of houses



Wind Conditions _____



North

SR 0422 M2B Noise Study

Session # _____ **Date** 7/27/2020 **Description :** Frontyard of residential house
Site # M3 **Time** 3:20 PM
Technician: SM

Traffic	WB	EB	Speed Readings
Cars	533	302	65
MT	26	16	60
HT	17	9	55
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	64.5 dBA		
Notes:			

Wind Conditions _____



North

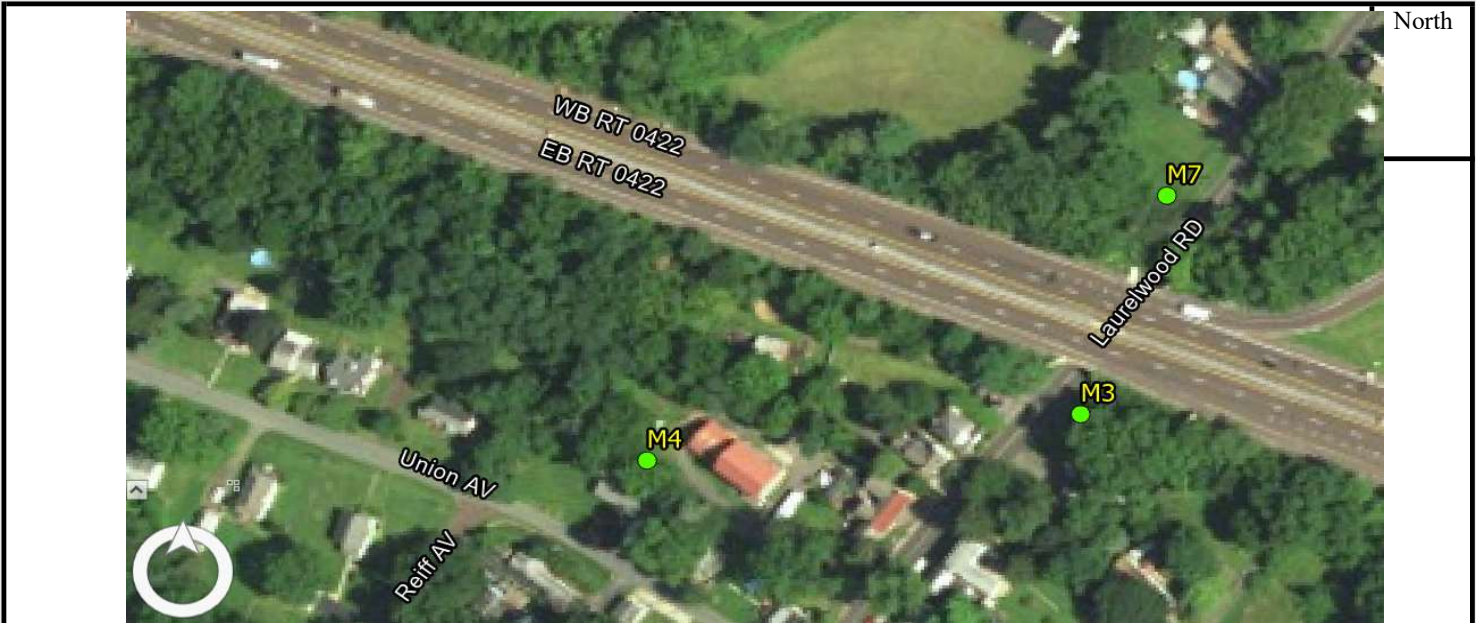
SR 0422 M2B Noise Study

Session # _____ Date 7/27/2020 Description : Backyard of residential home
 Site # M4 Time 3:16 PM
 Technician: SRM

Traffic	WB	EB	Speed Readings
Cars	514	305	
MT	24	16	
HT	15	9	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	59.3 dBA		
Notes:			

Some shielding from nearby structure

Wind Conditions _____



SR 0422 M2B Noise Study

Session #		Date	7/27/2020	Description : Baseball field at River Bend Park
Site #	M5	Time	2:38 PM	
Technician:	SM			

Traffic	WB	EB	Speed Readings
Cars	384	305	
MT	30	16	
HT	18	9	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	65.6 dBA		
Notes:			



Wind Conditions _____



SR 0422 M2B Noise Study

Session #			Date	2:41 PM	Description : Frontyard of residential home
Site #	M6		Time	7/27/2020	
Technician:	SRM				
Traffic	WB	EB	Speed Readings		
Cars	391	271			
MT	25	11			
HT	20	6			
Buses					
Motorcycles					
Total					
Speed Range (mph)					
Meter Session #					
Leq	60.7 dBA				
Notes:					



Wind Conditions _____



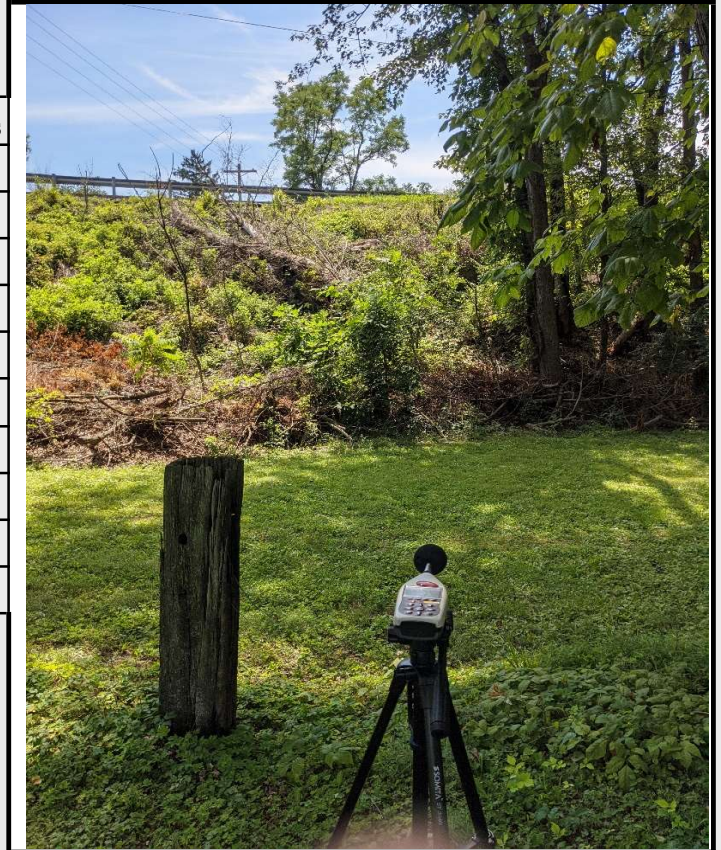
SR 0422 M2B Noise Study

Session #		Date	7/27/2020	Description : Backyard of residential home
Site #	M7	Time	2:06 PM	
Technician:	SRM			

Traffic	WB	EB	Speed Readings
Cars	281	246	55
MT	20	13	65
HT	16	11	Ramp
Buses			30
Motorcycles			35
Total			
Speed Range (mph)			
Meter Session #			
Leq	63.6 dBA		
Notes:			

Clear line of site, no shielding

Wind Conditions _____

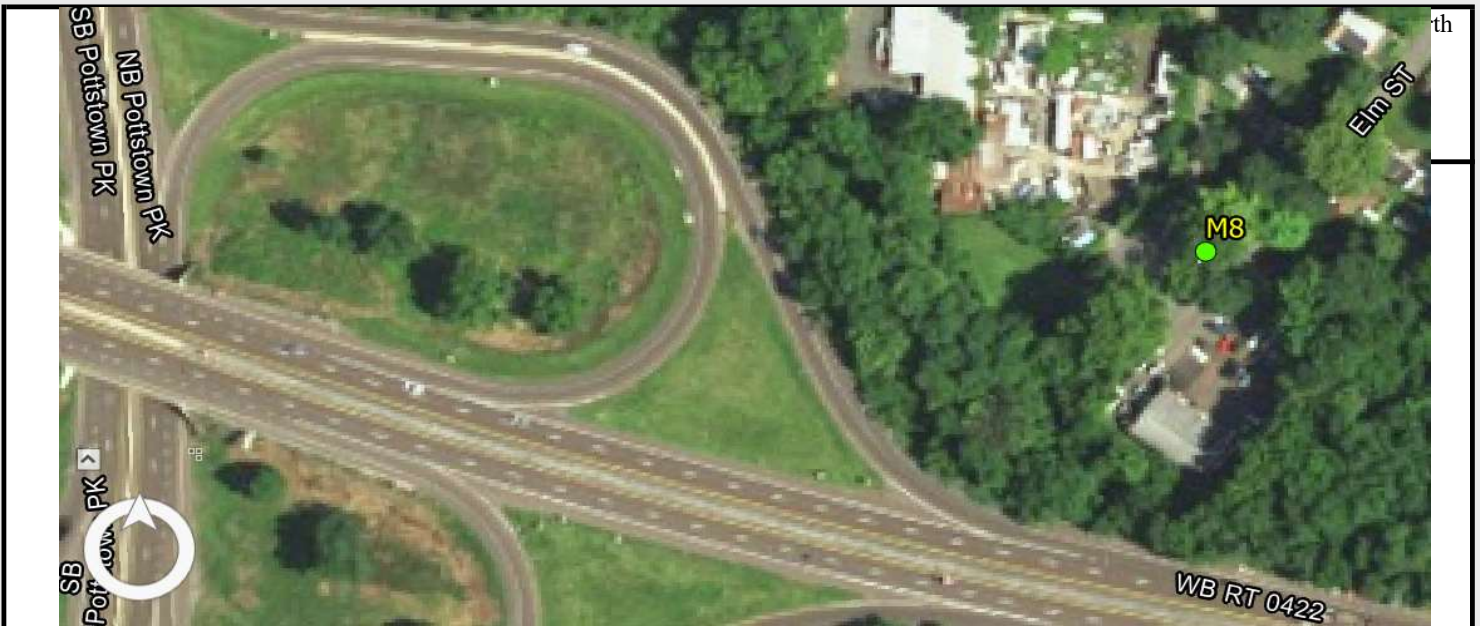


SR 0422 M2B Noise Study

Session #			Date	7/28/2020	Description : Backyard of residential home
Site #	M8		Time	3:47 PM	
Technician:	SRM				
Traffic	WB	EB	Speed Readings		
Cars	645	438			
MT	12	19			
HT	10	10			
Buses					
Motorcycles					
Total					
Speed Range (mph)					
Meter Session #					
Leq	61.4 dBA				
Notes:					
Noisy car nearby for several seconds at 12 minute mark					



Wind Conditions _____



SR 0422 M2B Noise Study

Session # _____ **Date** 7/28/2020 **Description :** Backyard of residential home
Site # M9 **Time** 3:59 PM
Technician: MC & SM

Traffic	WB	EB	Speed Readings
Cars	756	488	
MT	16	20	
HT	11	9	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	59.8 dBA		
Notes:			

Traffic Drone very audible from this setback.

Slight shielding from shed structure

Wind Conditions _____



North

SR 0422 M2B Noise Study

Session # _____ Date 7/29/2020 Description : Frontyard of residential home
 Site # M10 Time 1:28 PM
 Technician: SRM

Traffic	WB	EB	Speed Readings
Cars	418	520	
MT	40	28	
HT	20	9	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	70.3 dBA		
Notes:			

A lot of noise from nearby ramp

Line of site, no shielding

Wind Conditions _____



North

SR 0422 M2B Noise Study

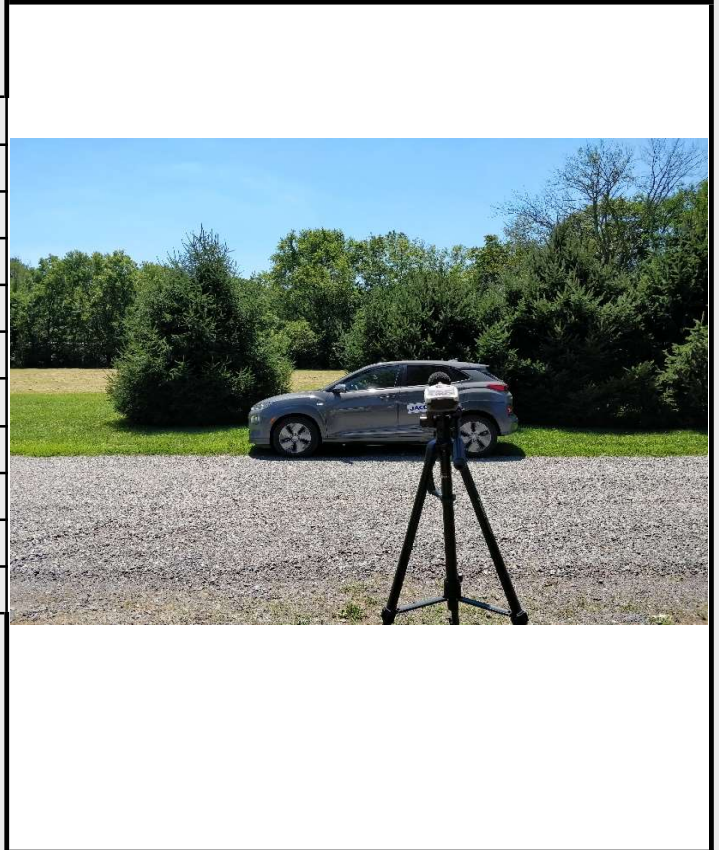
Session # _____ **Date** 7/29/2020 **Description :** Backyard of residential home
Site # M11 **Time** 1:28 PM
Technician: SRM

Traffic	WB	EB	Speed Readings
Cars	475	470	
MT	27	21	
HT	12	11	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	60.8 dBA		
Notes:			

Slight drone

Garages west of meter location are see-through and do not provide shielding.

Wind Conditions _____



SR 0422 M2B Noise Study

Session #		Date	7/28/2020	Description : Backyard of residential home
Site #	M12	Time	5:04 PM	
Technician:	CM			

Traffic	WB	EB	Speed Readings
Cars	767	601	45
MT	10	8	50
HT	10	8	55
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	61.4 dBA		
Notes:			

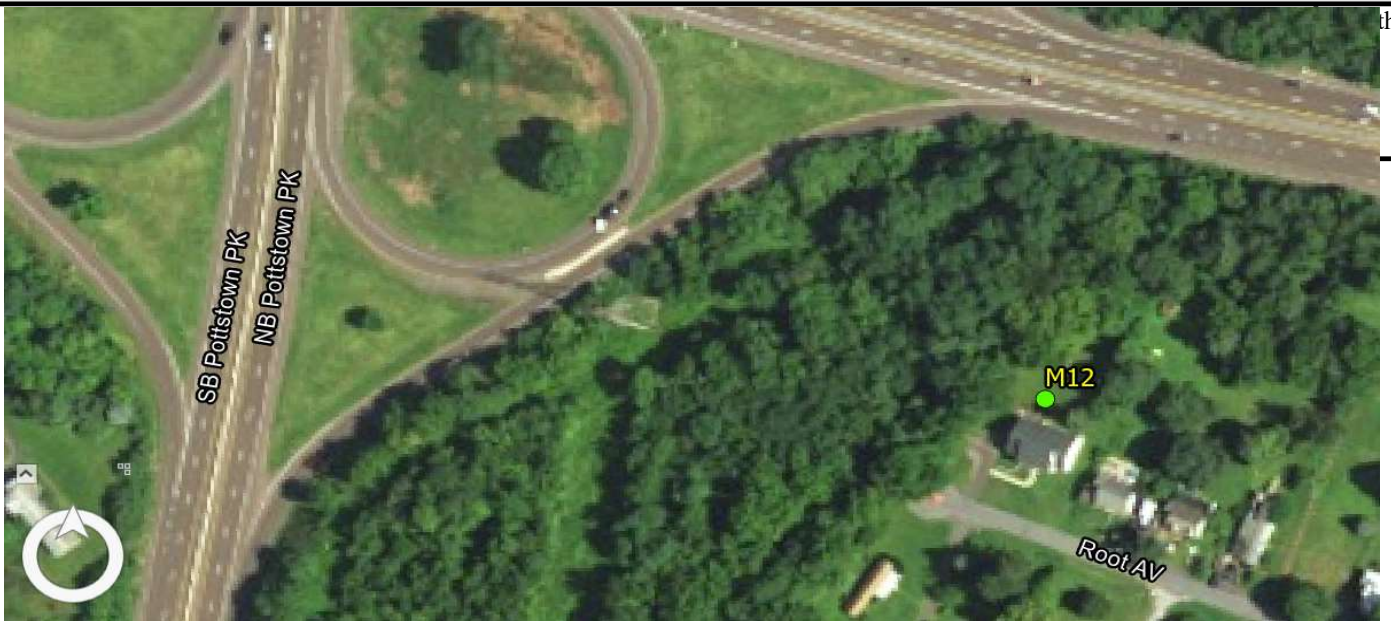
Loud drone, roadway partially visible through thick tree zone.

Suspect that trees provide attenuation at this site.

Resident states that traffic wakes him in the morning every day.



Wind Conditions _____



SR 0422 M2B Noise Study

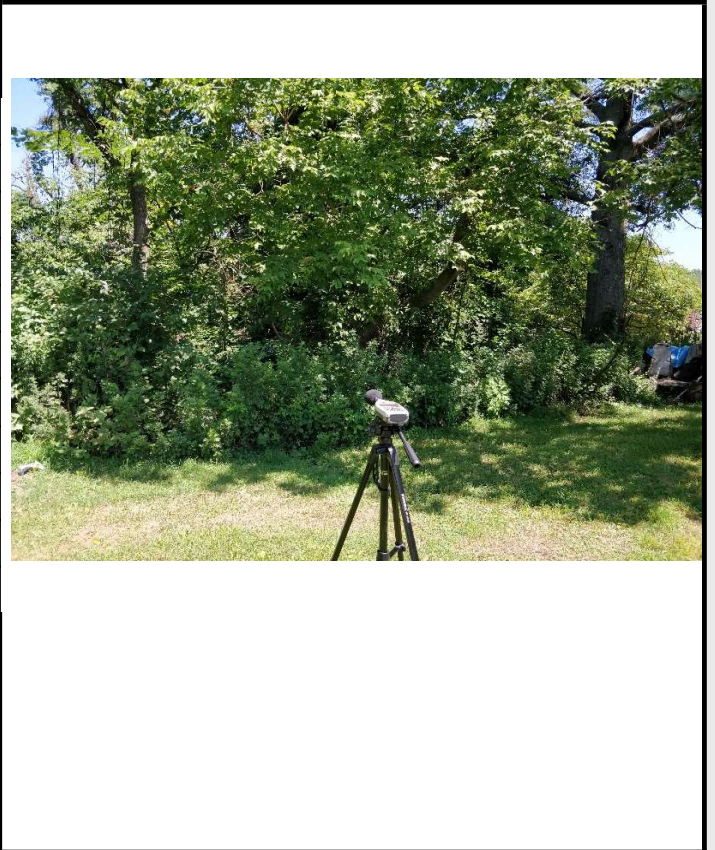
Session # _____ **Date** 7/29/2020 **Description :** Backyard of residential home
Site # M13 **Time** 12:37 PM
Technician: MC

Traffic	WB	EB	Speed Readings
Cars	436	468	
MT	35	37	
HT	20	17	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	67.8 dBA		
Notes:			

Very loud drone, clear sightline to roadway through trees.

No shielding.

Wind Conditions _____



SR 0422 M2B Noise Study

Session #		Date	7/29/2020	Description :
Site #	M14	Time	12:30 PM	
Technician:	SRM			

Traffic	WB	EB	Speed Readings
Cars	390	459	
MT	37	29	
HT	22	17	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	60.1 dBA		
Notes:			

Clear line of sight to ramp and SR 0422. No shielding

Wind Conditions _____



North

SR 0422 M2B Noise Study

Session #			Date	7/29/2020	Description : Backyard of residential home
Site #	M15		Time	1:02 PM	
Technician:	SRM				

Traffic	WB	EB	Speed Readings
Cars	448	491	
MT	40	24	
HT	13	18	
Buses			
Motorcycles			
Total			
Speed Range (mph)			

Meter Session #	
Leq	65.8 dBA
Notes:	

Air conditioner turns on at 1:10 into session, not too loud.

Roadway is above site, difficult to see roadway



Wind Conditions _____



SR 0422 M2B Noise Study

Session # _____ Date 7/29/2020 Description : Mount Zion Cemetery
 Site # M16 Time 1:44 PM
 Technician: MC

Traffic	WB	EB	Speed Readings
Cars	447	495	
MT	24	24	
HT	12	8	
Buses			
Motorcycles			
Total			
Speed Range (mph)			
Meter Session #			
Leq	65.3 dBA		
Notes:			

Site elevated 30+ feet from roadway but very, very loud.

Clear sightline to top of heavy trucks. No shielding.

Wind Conditions _____



North

Appendix E

Noise Meter Outputs

Session Report

Monitoring Site: M1

12/7/2020

Information Panel

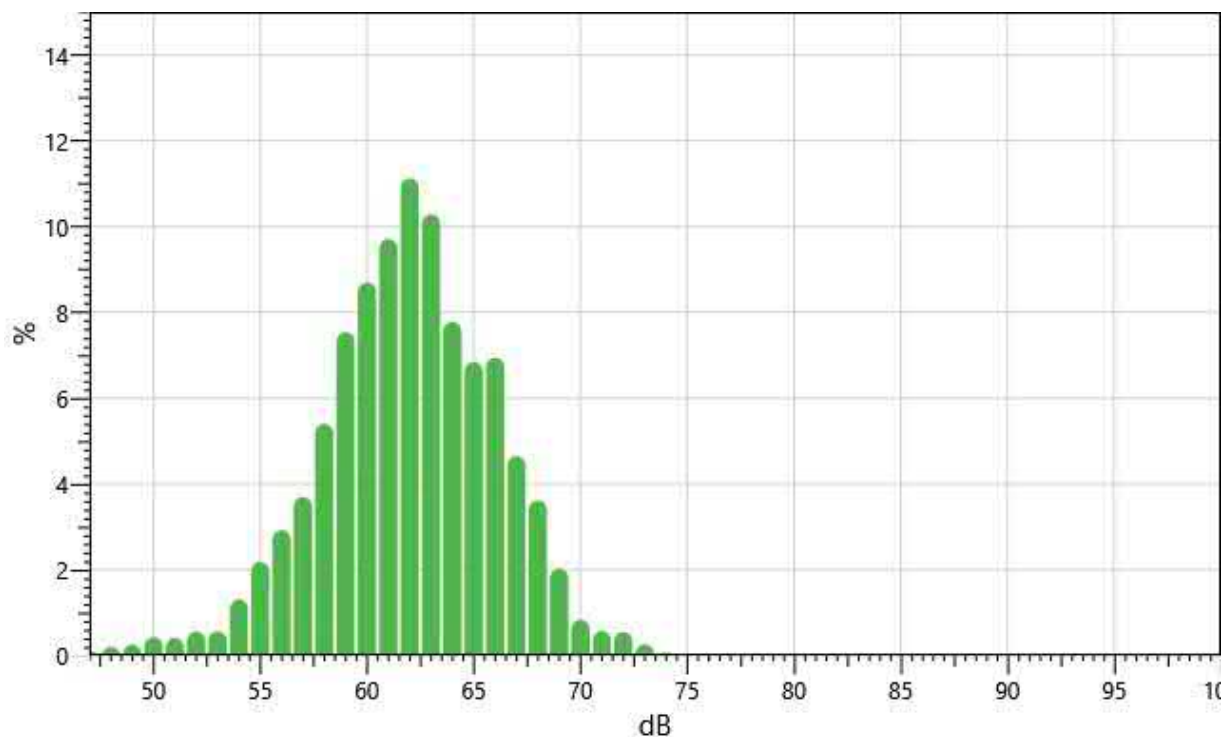
Name	S004_BLN040003_30072020_105609
Start Time	7/28/2020 11:47:03 AM
Stop Time	7/28/2020 12:07:06 PM
Device Name	BLN040003
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	65.6 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S004_BLN040003_30072020_105609: Statistics Chart



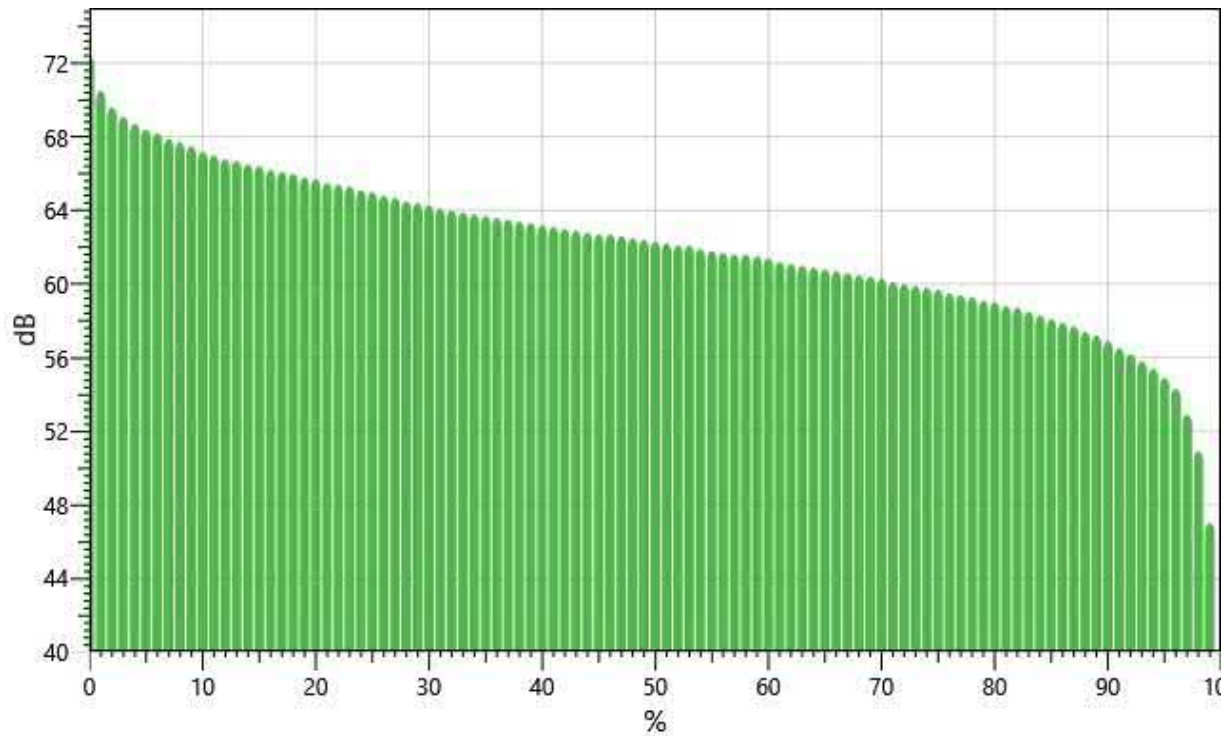
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
47:	0.00	0.02	0.02	0.02	0.01	0.01	0.00	0.01	0.00	0.01	0.10
48:	0.02	0.05	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.02	0.21
49:	0.03	0.01	0.01	0.00	0.01	0.01	0.01	0.03	0.05	0.09	0.26
50:	0.05	0.06	0.05	0.05	0.05	0.03	0.04	0.03	0.04	0.04	0.43
51:	0.03	0.03	0.03	0.03	0.05	0.04	0.05	0.04	0.07	0.05	0.42
52:	0.05	0.09	0.08	0.02	0.05	0.06	0.05	0.05	0.05	0.06	0.56
53:	0.05	0.05	0.05	0.07	0.07	0.07	0.05	0.04	0.07	0.06	0.57
54:	0.06	0.11	0.10	0.14	0.10	0.16	0.14	0.17	0.15	0.17	1.32
55:	0.16	0.23	0.22	0.10	0.22	0.24	0.23	0.25	0.24	0.29	2.18
56:	0.28	0.29	0.33	0.31	0.29	0.27	0.24	0.29	0.31	0.29	2.93
57:	0.30	0.34	0.35	0.35	0.40	0.35	0.43	0.33	0.41	0.44	3.70
58:	0.50	0.53	0.59	0.30	0.47	0.62	0.57	0.57	0.56	0.70	5.40
59:	0.65	0.69	0.70	0.68	0.77	0.83	0.80	0.81	0.84	0.78	7.54
60:	0.79	0.82	0.81	0.82	0.81	0.90	0.92	0.91	0.90	1.01	8.70
61:	1.08	1.09	1.02	0.54	0.70	0.99	1.19	1.14	1.04	0.91	9.72
62:	0.97	0.95	1.26	1.11	1.12	1.13	1.16	1.13	1.14	1.16	11.13

63:	1.18	1.01	1.00	0.93	0.92	0.88	1.04	1.17	1.17	0.99	10.29
64:	0.92	0.93	0.90	0.78	0.60	0.93	0.72	0.64	0.62	0.74	7.78
65:	0.56	0.68	0.78	0.70	0.68	0.70	0.67	0.69	0.68	0.70	6.85
66:	0.69	0.64	0.81	0.80	0.74	0.72	0.61	0.57	0.67	0.69	6.95
67:	0.63	0.64	0.54	0.37	0.26	0.47	0.43	0.39	0.45	0.49	4.65
68:	0.39	0.38	0.49	0.36	0.41	0.40	0.38	0.28	0.26	0.27	3.62
69:	0.21	0.35	0.32	0.20	0.18	0.16	0.15	0.16	0.16	0.13	2.03
70:	0.15	0.17	0.14	0.09	0.02	0.06	0.05	0.06	0.05	0.05	0.84
71:	0.06	0.06	0.05	0.05	0.04	0.05	0.08	0.09	0.05	0.05	0.58
72:	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.07	0.08	0.55
73:	0.05	0.02	0.02	0.03	0.01	0.02	0.03	0.03	0.04	0.02	0.27
74:	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.07
75:	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.04
76:	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03
77:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
78:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
79:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
80:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
81:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
82:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
83:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
84:	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.03
85:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
86:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
87:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
88:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
89:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
90:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02

Exceedance Chart

S004_BLN040003_30072020_105609: Exceedance Chart

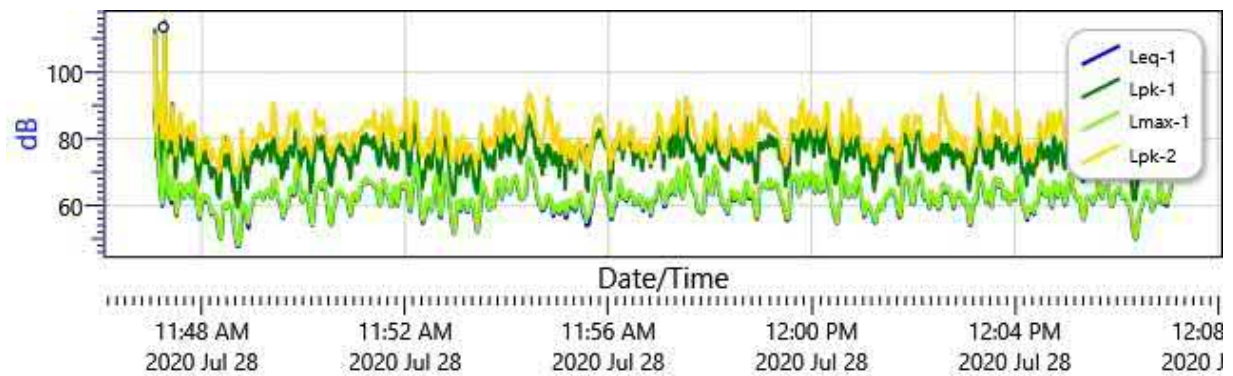


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		72.4	70.5	69.6	69.1	68.7	68.4	68.2	67.9	67.7
10%:	67.5	67.2	67.0	66.8	66.7	66.5	66.4	66.2	66.1	66.0
20%:	65.8	65.7	65.5	65.4	65.3	65.1	65.0	64.8	64.7	64.5
30%:	64.4	64.3	64.1	64.0	63.9	63.8	63.7	63.6	63.5	63.4
40%:	63.3	63.2	63.1	63.0	62.9	62.8	62.7	62.7	62.6	62.5
50%:	62.4	62.3	62.2	62.1	62.1	61.9	61.8	61.7	61.6	61.6
60%:	61.5	61.4	61.2	61.1	61.0	60.9	60.8	60.7	60.6	60.5
70%:	60.4	60.3	60.1	60.0	59.9	59.8	59.7	59.5	59.4	59.3
80%:	59.1	59.0	58.8	58.7	58.5	58.3	58.1	57.9	57.7	57.4
90%:	57.2	56.9	56.5	56.2	55.8	55.4	54.9	54.3	52.9	50.9
100%:	47.0									

Logged Data Chart

S004_BLN040003_30072020_105609: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M2

Information Panel

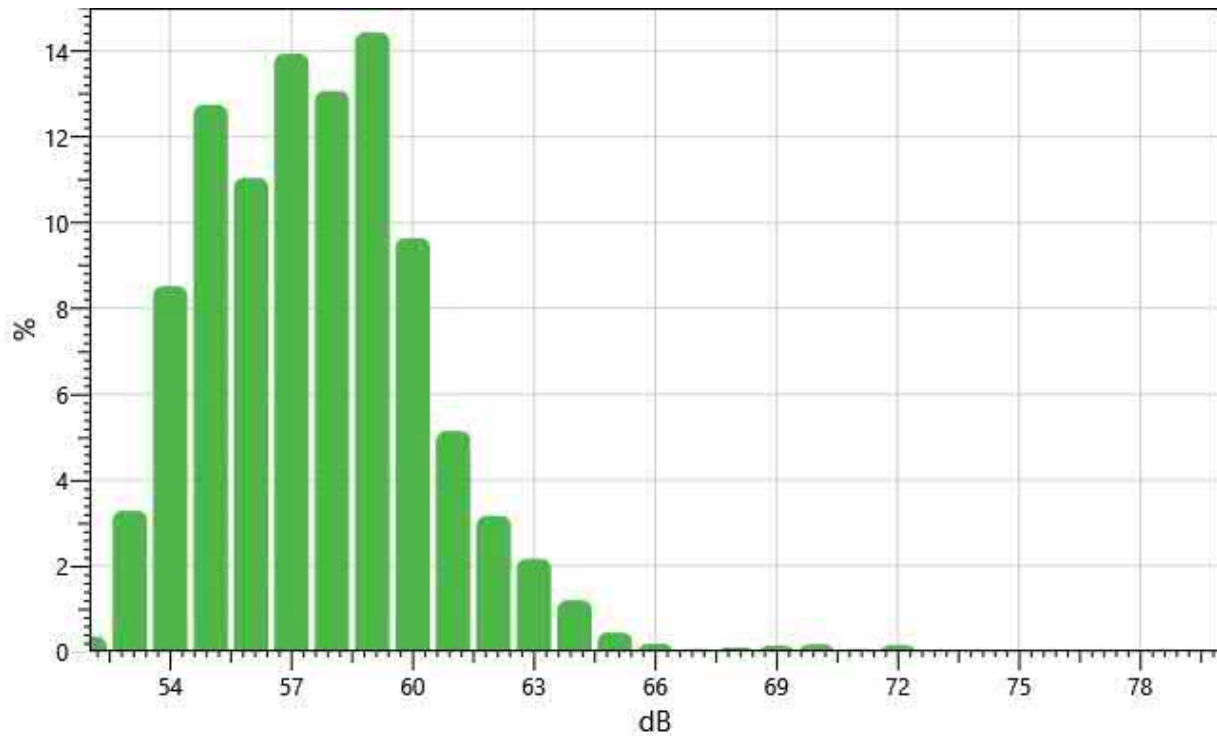
Name	S006_BLI050006_30072020_141304
Start Time	7/28/2020 11:53:49 AM
Stop Time	7/28/2020 12:15:12 PM
Device Name	BLI050006
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	59.2 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S006_BLI050006_30072020_141304: Statistics Chart



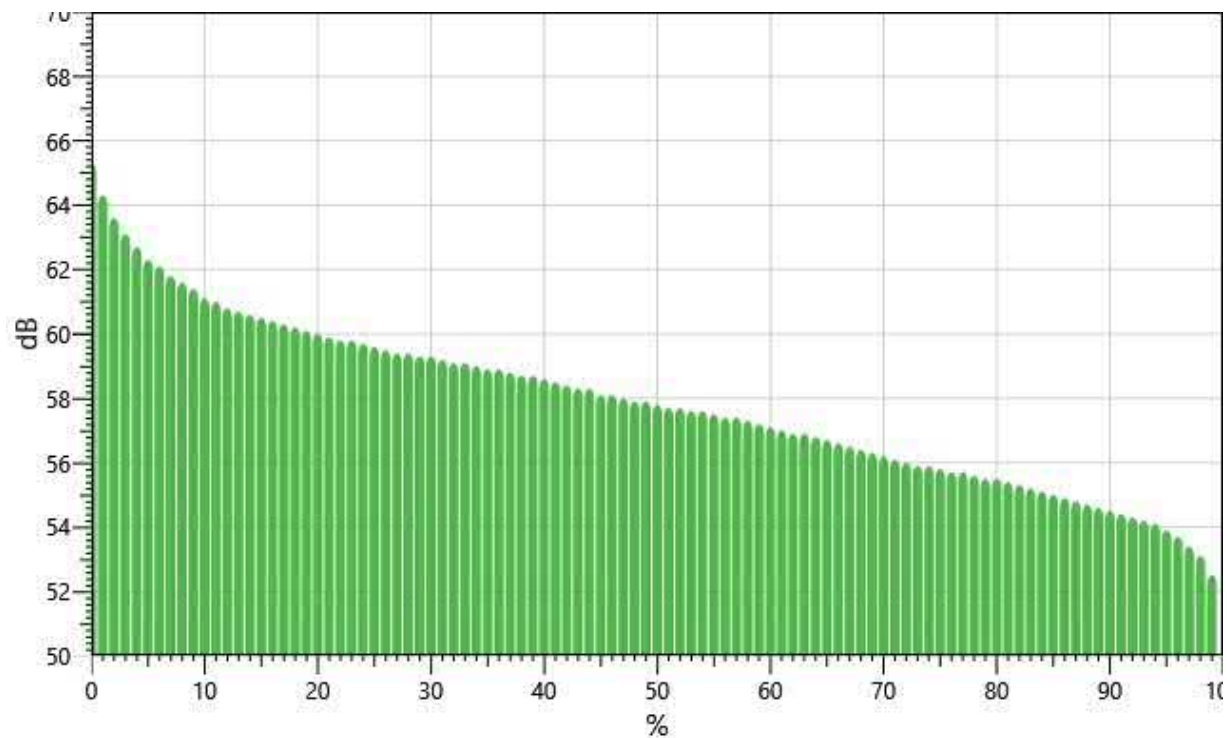
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
52:	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.13	0.15	0.35
53:	0.17	0.27	0.27	0.31	0.44	0.49	0.35	0.20	0.33	0.44	3.29
54:	0.44	0.73	0.90	0.85	0.83	0.77	1.05	0.85	0.99	1.12	8.52
55:	1.28	1.15	0.97	0.53	1.38	1.37	1.56	1.53	1.50	1.48	12.74
56:	1.30	1.27	1.10	0.91	0.88	1.08	1.10	1.09	1.22	1.08	11.04
57:	1.08	1.25	1.18	1.09	1.21	1.63	1.58	1.80	1.58	1.53	13.94
58:	1.38	1.36	1.49	0.78	1.20	1.23	1.21	1.30	1.54	1.58	13.07
59:	1.37	1.23	1.56	1.54	1.77	1.62	1.31	1.21	1.38	1.45	14.43
60:	1.23	1.11	0.85	0.97	0.94	0.97	1.03	0.96	0.76	0.81	9.64
61:	0.59	0.74	0.67	0.38	0.37	0.62	0.42	0.51	0.49	0.35	5.14
62:	0.41	0.39	0.39	0.32	0.40	0.36	0.23	0.22	0.23	0.21	3.17
63:	0.31	0.26	0.25	0.25	0.23	0.19	0.18	0.18	0.17	0.16	2.16
64:	0.15	0.13	0.12	0.08	0.12	0.22	0.11	0.11	0.09	0.07	1.20
65:	0.10	0.07	0.05	0.04	0.07	0.02	0.02	0.03	0.03	0.02	0.44
66:	0.03	0.04	0.03	0.02	0.01	0.02	0.02	0.01	0.01	0.01	0.18
67:	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.06

68:	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.10
69:	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.03	0.03	0.14
70:	0.09	0.02	0.01	0.03	0.00	0.01	0.00	0.01	0.00	0.01	0.17
71:	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.06
72:	0.01	0.01	0.01	0.02	0.03	0.03	0.02	0.01	0.01	0.01	0.15

Exceedance Chart

S006_BLI050006_30072020_141304: Exceedance Chart



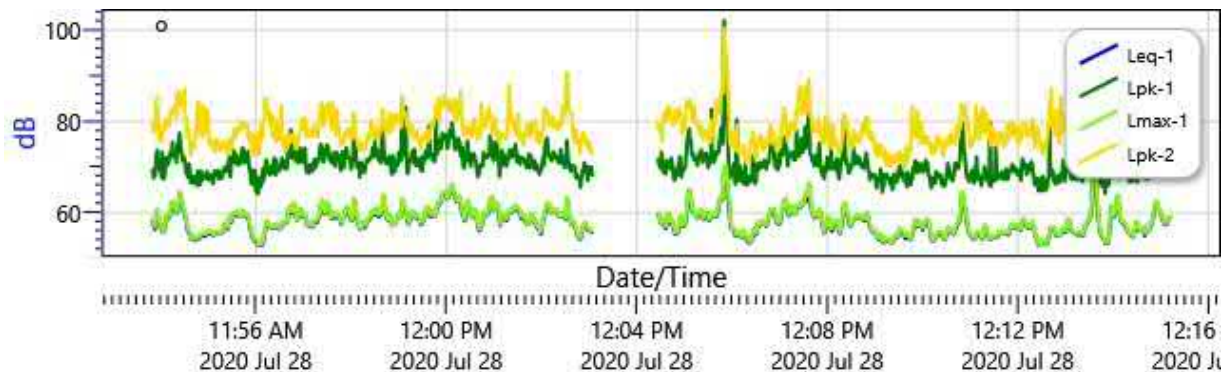
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		65.3	64.3	63.6	63.1	62.7	62.3	62.1	61.8	61.6
10%:	61.4	61.1	61.0	60.8	60.7	60.6	60.5	60.4	60.3	60.2
20%:	60.1	60.0	59.9	59.8	59.8	59.7	59.6	59.5	59.4	59.4
30%:	59.3	59.3	59.2	59.1	59.1	59.0	58.9	58.9	58.8	58.7
40%:	58.7	58.6	58.5	58.4	58.3	58.3	58.1	58.1	58.0	57.9
50%:	57.9	57.8	57.7	57.7	57.6	57.6	57.5	57.4	57.4	57.3
60%:	57.2	57.1	57.0	56.9	56.9	56.8	56.7	56.6	56.5	56.4
70%:	56.3	56.2	56.1	56.0	55.9	55.9	55.8	55.7	55.7	55.6
80%:	55.5	55.5	55.4	55.3	55.2	55.1	55.0	54.9	54.8	54.7
90%:	54.6	54.5	54.4	54.3	54.2	54.1	53.9	53.7	53.4	53.1

100%: 52.5

Logged Data Chart

S006_BLI050006_30072020_141304: Logged Data Chart

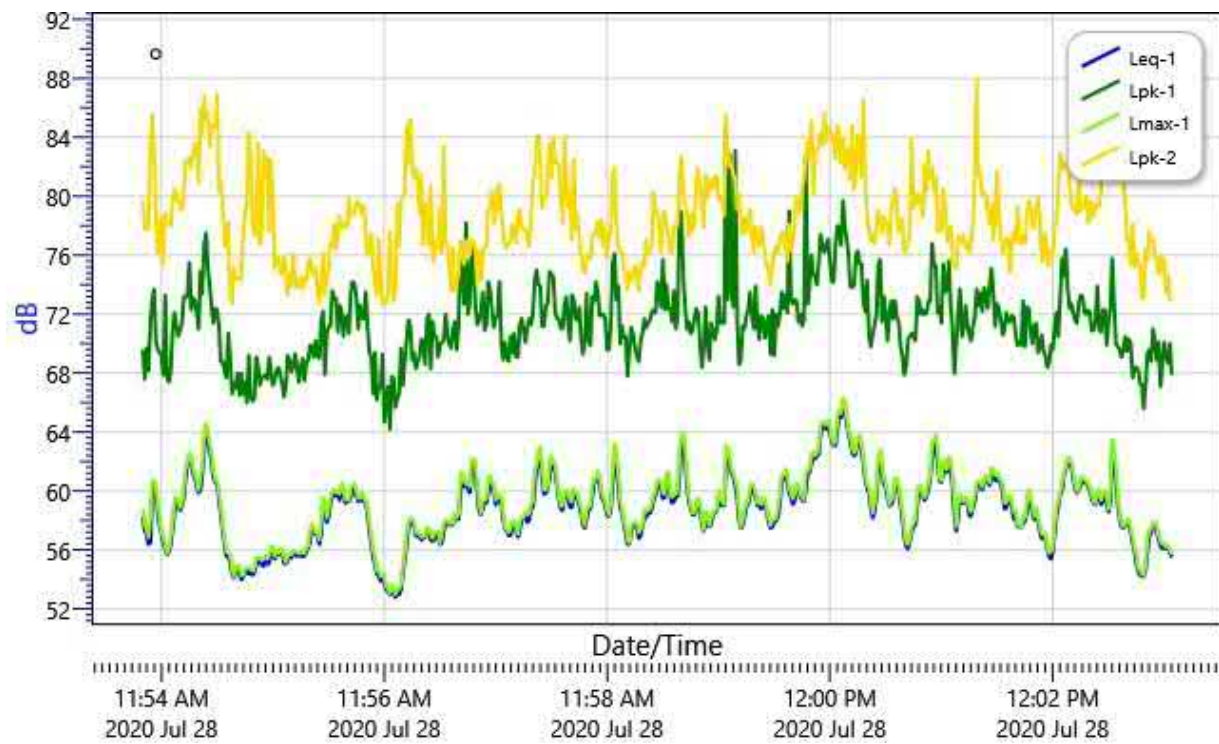


Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Dose	1	0 %	Lpk	1	84.7 dB
Lmax	1	66.3 dB			
Weighting	1	A	Response	1	SLOW
Bandwidth	1	1/3	Exchange Rate	1	3 dB
Integrating Threshold	1	80 dB	Log Rate	1	1 s
Exchange Rate	2	3 dB	Integrating Threshold	2	80 dB
Weighting	2	C	Response	2	SLOW

Logged Data Chart

Study 1: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M3

Information Panel

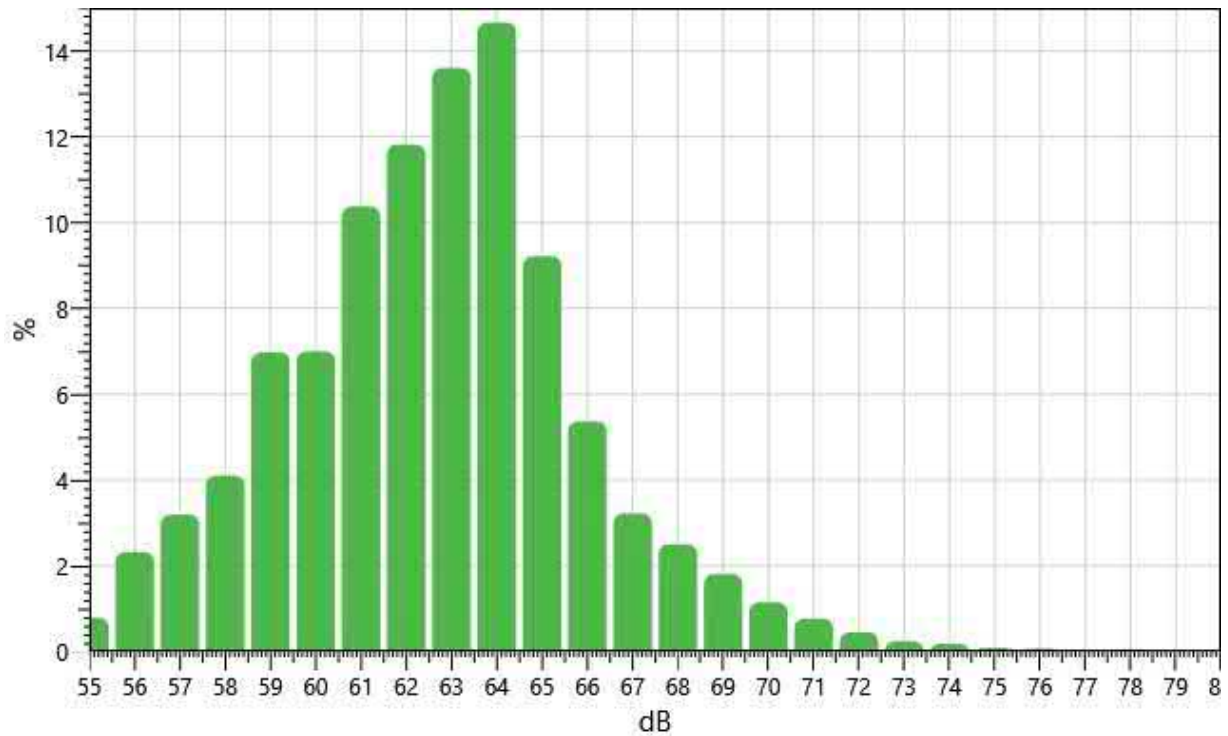
Name	S005_BLI050006_30072020_141247
Start Time	7/27/2020 3:20:46 PM
Stop Time	7/27/2020 3:41:27 PM
Device Name	BLI050006
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	64.5 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S005_BLI050006_30072020_141247: Statistics Chart



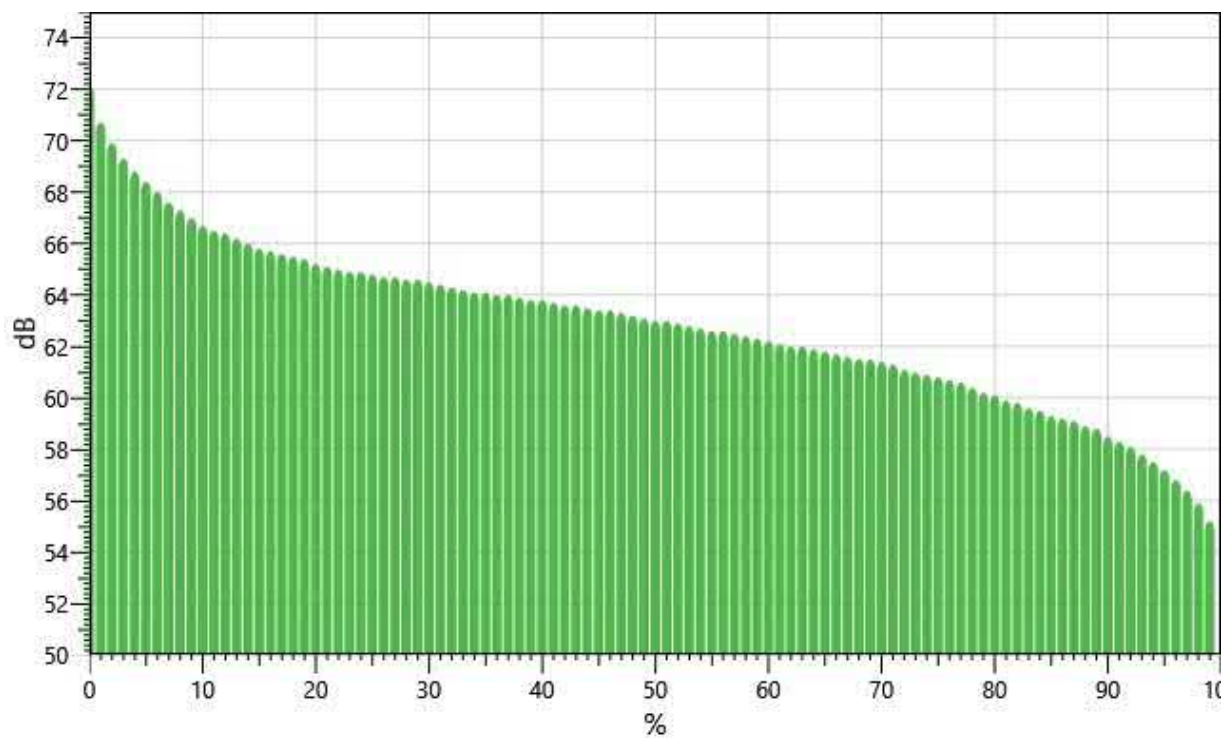
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
55:	0.00	0.00	0.00	0.04	0.09	0.04	0.13	0.16	0.15	0.18	0.79
56:	0.34	0.23	0.22	0.17	0.18	0.35	0.22	0.15	0.21	0.25	2.32
57:	0.20	0.27	0.33	0.32	0.30	0.32	0.34	0.40	0.39	0.33	3.20
58:	0.34	0.33	0.42	0.20	0.42	0.59	0.51	0.41	0.36	0.52	4.10
59:	0.79	0.64	0.77	0.57	0.84	0.75	0.69	0.64	0.63	0.65	6.97
60:	0.72	0.61	0.70	0.67	0.67	0.59	0.64	0.84	0.76	0.81	7.00
61:	0.84	0.97	1.00	0.68	0.87	1.18	1.10	1.20	1.20	1.34	10.37
62:	1.09	1.27	1.18	1.19	1.21	1.15	1.07	1.18	1.21	1.26	11.82
63:	1.29	1.14	1.33	1.29	1.31	1.43	1.47	1.56	1.34	1.44	13.60
64:	1.73	1.64	1.55	1.03	0.91	1.49	1.47	1.61	1.65	1.60	14.67
65:	1.29	1.06	0.92	0.91	0.85	0.84	0.95	0.94	0.74	0.71	9.22
66:	0.64	0.57	0.51	0.51	0.59	0.66	0.59	0.55	0.46	0.29	5.36
67:	0.34	0.33	0.40	0.42	0.26	0.36	0.33	0.24	0.24	0.28	3.22
68:	0.25	0.26	0.22	0.21	0.22	0.31	0.36	0.27	0.20	0.21	2.50
69:	0.20	0.21	0.22	0.19	0.21	0.19	0.17	0.14	0.16	0.12	1.81
70:	0.14	0.20	0.19	0.13	0.05	0.09	0.10	0.08	0.07	0.09	1.15

71:	0.07	0.07	0.07	0.08	0.12	0.08	0.08	0.06	0.08	0.05	0.77
72:	0.07	0.05	0.07	0.07	0.04	0.04	0.04	0.03	0.03	0.03	0.45
73:	0.03	0.03	0.04	0.02	0.01	0.03	0.02	0.01	0.02	0.03	0.24
74:	0.01	0.02	0.02	0.01	0.01	0.03	0.03	0.02	0.02	0.01	0.18
75:	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.09
76:	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.07
77:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
78:	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.06
79:	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Exceedance Chart

S005_BLI050006_30072020_141247: Exceedance Chart



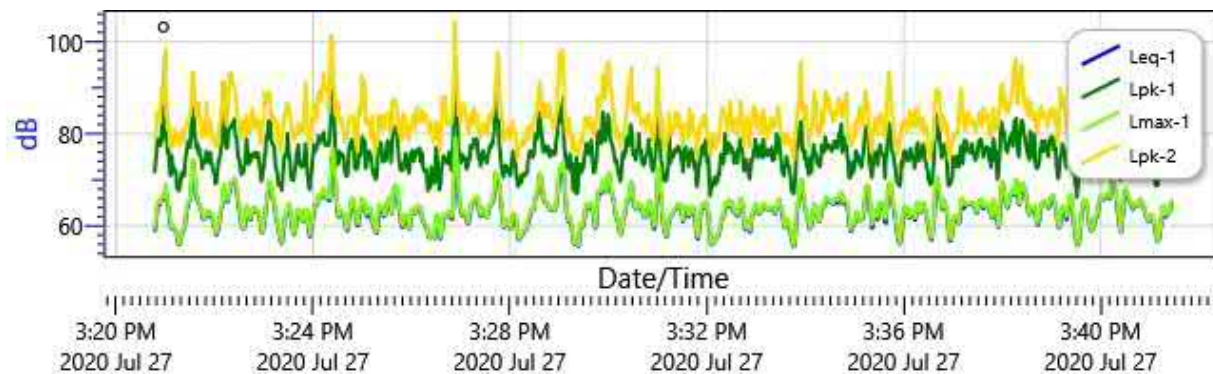
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		72.1	70.7	69.9	69.3	68.8	68.4	68.0	67.6	67.3
10%:	67.0	66.7	66.5	66.4	66.2	66.0	65.8	65.7	65.6	65.5
20%:	65.4	65.2	65.1	65.0	64.9	64.9	64.8	64.7	64.7	64.6
30%:	64.6	64.5	64.4	64.3	64.2	64.1	64.1	64.0	64.0	63.9
40%:	63.8	63.8	63.7	63.6	63.6	63.5	63.4	63.4	63.3	63.2
50%:	63.1	63.0	63.0	62.9	62.8	62.7	62.6	62.6	62.5	62.4

60%:	62.3	62.2	62.1	62.0	62.0	61.9	61.8	61.7	61.6	61.5
70%:	61.5	61.4	61.3	61.1	61.0	60.9	60.8	60.7	60.6	60.4
80%:	60.2	60.1	59.9	59.8	59.6	59.5	59.3	59.2	59.1	58.9
90%:	58.8	58.5	58.3	58.1	57.8	57.5	57.2	56.8	56.4	55.9
100%:	55.2									

Logged Data Chart

S005_BLI050006_30072020_141247: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M4

Information Panel

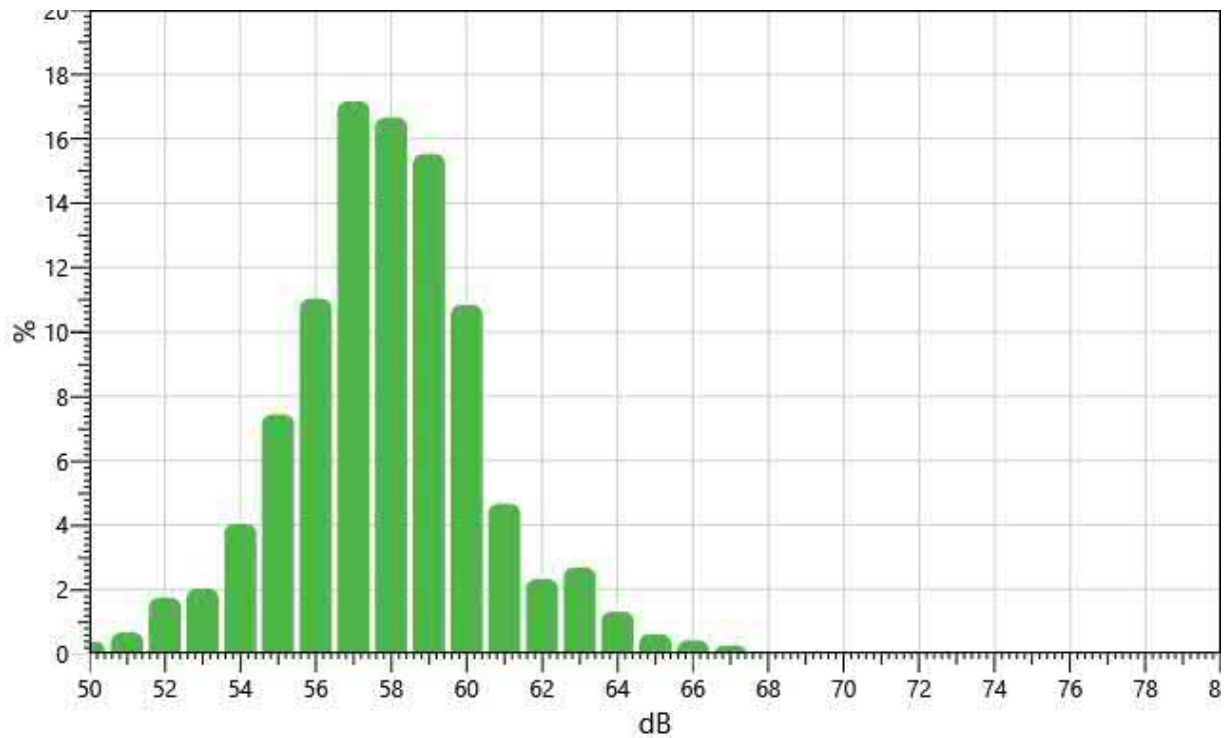
Name	S003_BLN040003_30072020_105554
Start Time	7/27/2020 3:19:06 PM
Stop Time	7/27/2020 3:39:08 PM
Device Name	BLN040003
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	59.3 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S003_BLN040003_30072020_105554: Statistics Chart



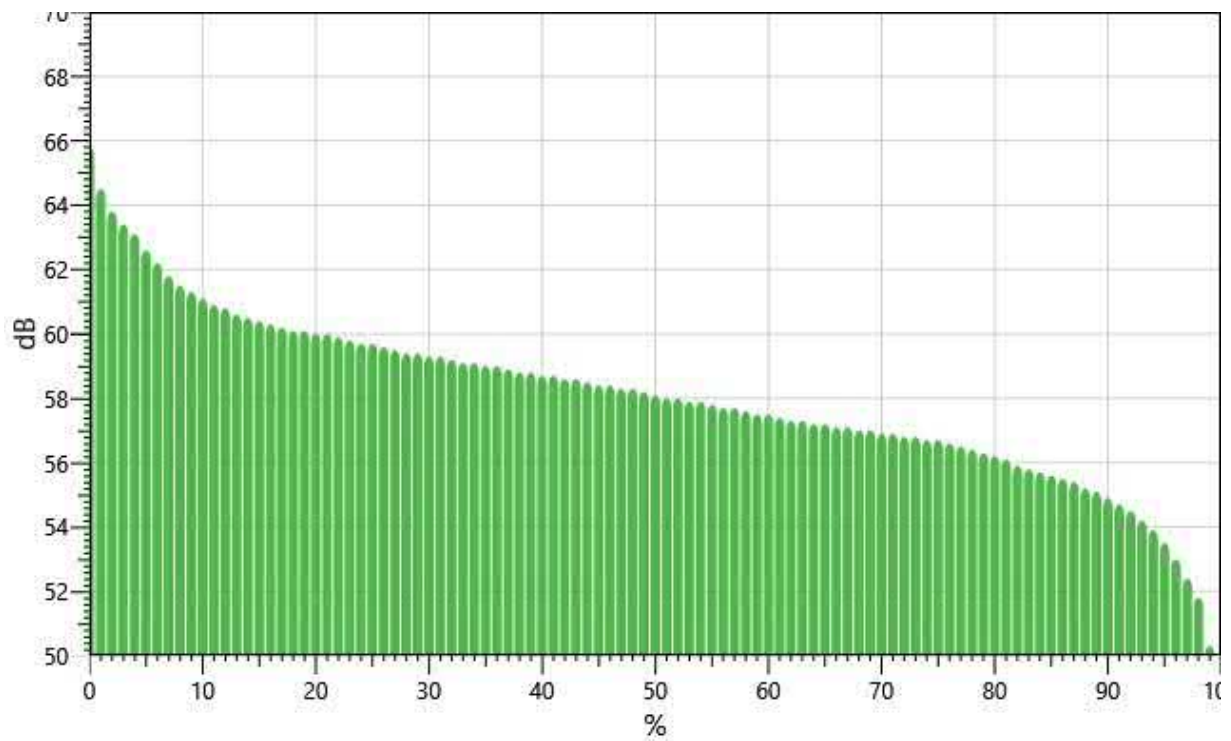
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
50:	0.00	0.00	0.00	0.00	0.02	0.06	0.06	0.03	0.06	0.15	0.37
51:	0.07	0.06	0.06	0.04	0.05	0.03	0.03	0.07	0.13	0.11	0.66
52:	0.07	0.07	0.15	0.08	0.38	0.23	0.26	0.17	0.17	0.16	1.74
53:	0.15	0.25	0.22	0.25	0.19	0.17	0.14	0.14	0.17	0.36	2.03
54:	0.25	0.24	0.45	0.32	0.35	0.49	0.44	0.48	0.50	0.51	4.03
55:	0.43	0.64	0.96	0.38	0.59	0.75	0.88	0.86	1.02	0.91	7.43
56:	0.94	0.80	0.85	1.05	0.93	0.92	0.99	1.22	1.68	1.65	11.03
57:	2.20	2.04	1.81	1.77	1.92	1.58	1.47	1.44	1.53	1.42	17.17
58:	1.71	1.88	1.90	0.91	1.55	1.75	1.50	1.65	1.80	2.01	16.66
59:	1.70	1.72	1.58	1.70	1.63	1.71	1.62	1.23	1.27	1.38	15.53
60:	1.33	1.91	1.50	1.21	1.08	0.97	0.72	0.73	0.69	0.69	10.83
61:	0.58	0.64	0.60	0.44	0.42	0.48	0.40	0.37	0.39	0.33	4.66
62:	0.23	0.30	0.31	0.31	0.24	0.20	0.19	0.18	0.18	0.19	2.31
63:	0.24	0.24	0.28	0.23	0.33	0.37	0.33	0.20	0.24	0.23	2.68
64:	0.20	0.17	0.15	0.08	0.06	0.15	0.11	0.16	0.13	0.09	1.30
65:	0.07	0.10	0.10	0.07	0.06	0.03	0.04	0.04	0.05	0.07	0.61

66:	0.08	0.07	0.09	0.05	0.01	0.02	0.02	0.02	0.02	0.02	0.41
67:	0.03	0.04	0.03	0.02	0.03	0.07	0.01	0.00	0.01	0.01	0.25
68:	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.04
69:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
70:	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.06
71:	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.05
72:	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.06
73:	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05

Exceedance Chart

S003_BLN040003_30072020_105554: Exceedance Chart



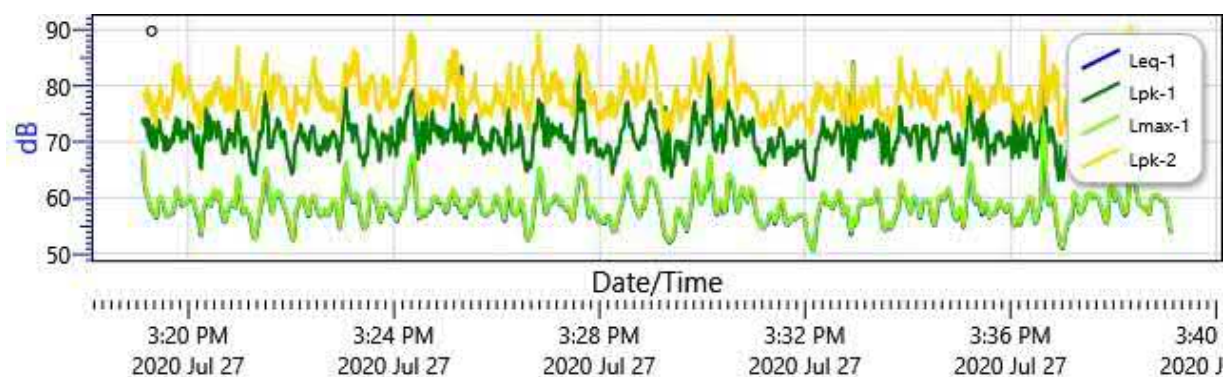
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		65.8	64.5	63.8	63.4	63.1	62.6	62.2	61.8	61.5
10%:	61.3	61.1	60.9	60.8	60.6	60.5	60.4	60.3	60.2	60.1
20%:	60.1	60.0	60.0	59.9	59.8	59.7	59.7	59.6	59.5	59.4
30%:	59.4	59.3	59.3	59.2	59.1	59.1	59.0	59.0	58.9	58.8
40%:	58.8	58.7	58.7	58.6	58.6	58.5	58.4	58.4	58.3	58.3
50%:	58.2	58.1	58.0	58.0	57.9	57.9	57.8	57.7	57.7	57.6
60%:	57.5	57.5	57.4	57.3	57.3	57.2	57.2	57.1	57.1	57.0

70%:	57.0	56.9	56.9	56.8	56.8	56.7	56.7	56.6	56.5	56.4
80%:	56.3	56.2	56.1	55.9	55.8	55.7	55.6	55.5	55.4	55.2
90%:	55.1	54.9	54.7	54.5	54.2	53.9	53.5	53.0	52.4	51.8
100%:	50.3									

Logged Data Chart

S003_BLN040003_30072020_105554: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M5

Information Panel

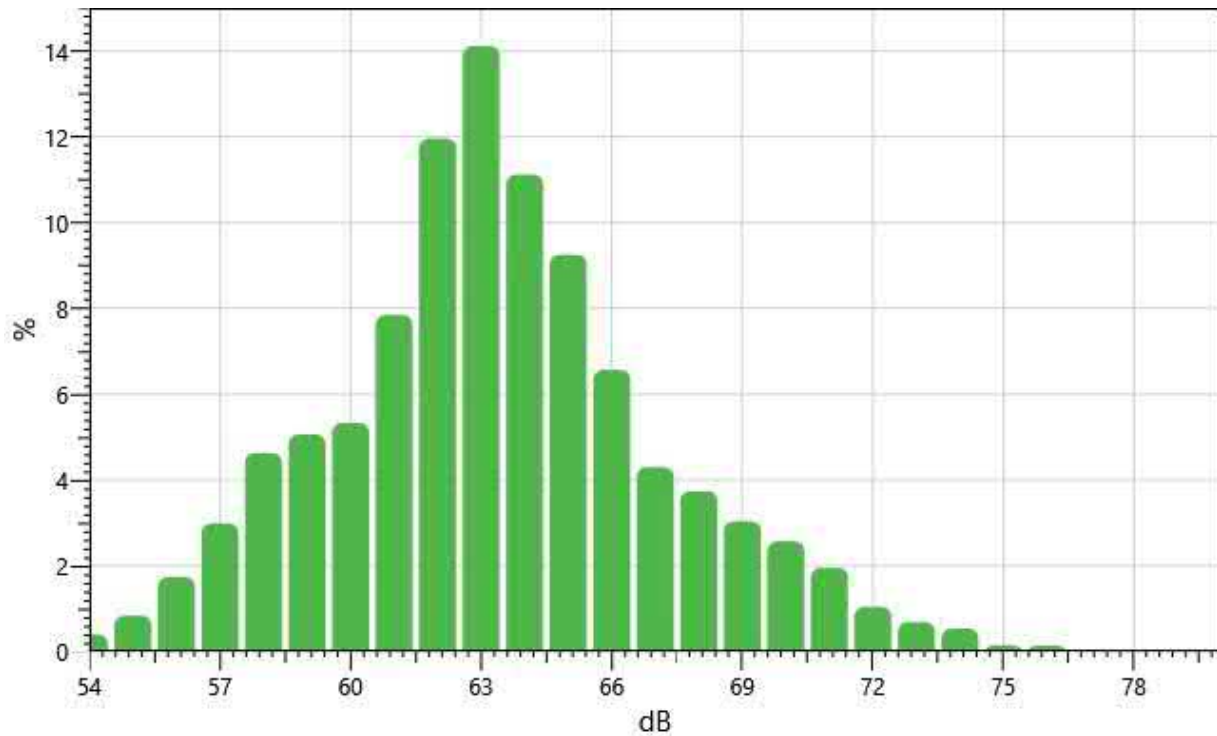
Name	S004_BLI050006_30072020_141229
Start Time	7/27/2020 2:38:39 PM
Stop Time	7/27/2020 2:58:59 PM
Device Name	BLI050006
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	65.6 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S004_BLI050006_30072020_141229: Statistics Chart



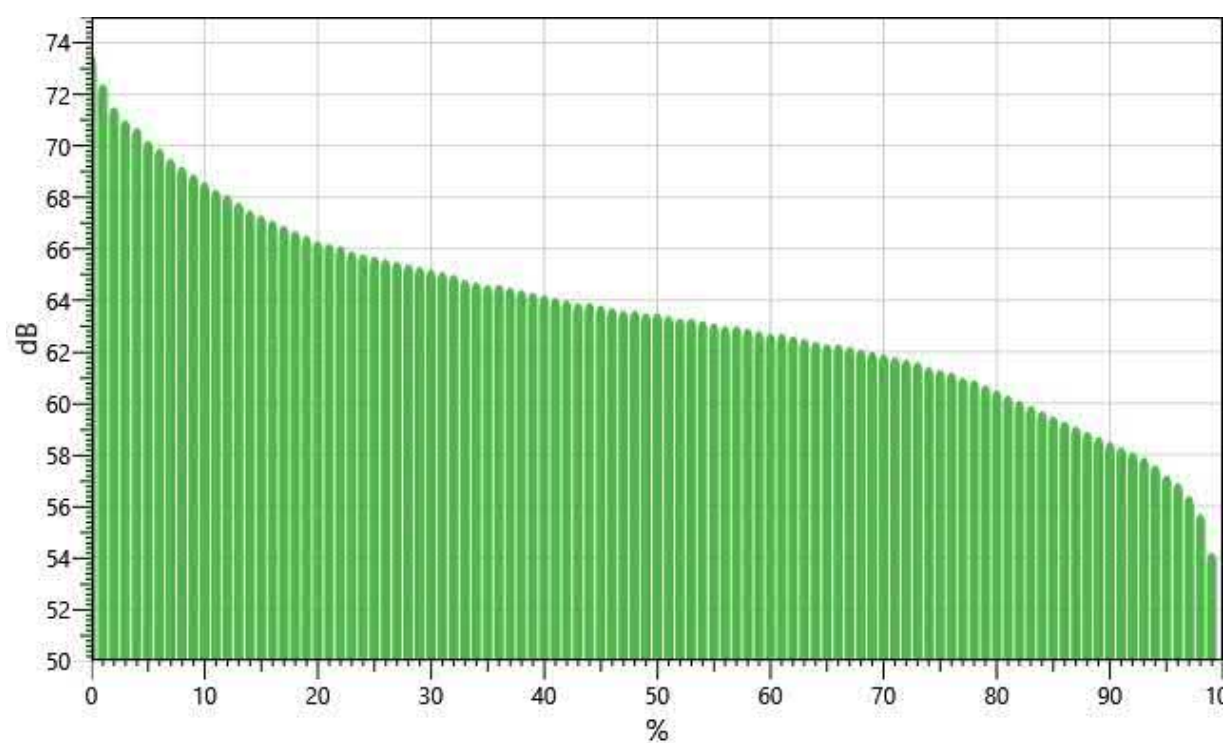
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
54:	0.00	0.00	0.00	0.01	0.13	0.05	0.12	0.03	0.02	0.04	0.40
55:	0.06	0.03	0.08	0.03	0.04	0.08	0.10	0.08	0.12	0.21	0.84
56:	0.15	0.06	0.08	0.21	0.18	0.20	0.20	0.23	0.21	0.21	1.74
57:	0.31	0.29	0.30	0.29	0.23	0.23	0.24	0.31	0.38	0.42	2.99
58:	0.43	0.44	0.54	0.28	0.44	0.49	0.56	0.56	0.43	0.46	4.63
59:	0.54	0.62	0.57	0.53	0.52	0.56	0.40	0.46	0.41	0.44	5.06
60:	0.56	0.56	0.47	0.45	0.43	0.52	0.49	0.53	0.58	0.75	5.33
61:	0.55	0.62	0.73	0.48	0.74	0.96	0.81	0.93	0.96	1.06	7.84
62:	0.94	0.97	1.06	1.15	1.24	1.09	1.27	1.37	1.49	1.38	11.96
63:	1.16	1.15	1.21	1.38	1.42	1.49	1.91	1.66	1.43	1.30	14.12
64:	1.26	1.18	1.33	1.00	0.87	1.14	1.09	1.26	1.08	0.91	11.12
65:	0.83	1.01	0.82	0.96	1.00	1.05	0.86	0.94	0.92	0.87	9.25
66:	0.85	0.80	0.77	0.87	0.67	0.60	0.49	0.50	0.51	0.50	6.57
67:	0.42	0.46	0.63	0.49	0.27	0.50	0.41	0.35	0.35	0.42	4.30
68:	0.37	0.45	0.35	0.40	0.35	0.34	0.36	0.33	0.38	0.40	3.74
69:	0.35	0.36	0.29	0.28	0.32	0.33	0.32	0.25	0.25	0.30	3.04

70:	0.34	0.27	0.33	0.21	0.09	0.25	0.27	0.29	0.23	0.29	2.57
71:	0.34	0.24	0.20	0.18	0.24	0.18	0.19	0.17	0.11	0.09	1.95
72:	0.07	0.06	0.09	0.10	0.15	0.12	0.09	0.11	0.11	0.12	1.04
73:	0.13	0.06	0.06	0.08	0.02	0.11	0.08	0.05	0.06	0.04	0.69
74:	0.03	0.04	0.05	0.07	0.06	0.07	0.06	0.07	0.07	0.02	0.54
75:	0.02	0.02	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.15
76:	0.01	0.01	0.01	0.01	0.00	0.01	0.02	0.02	0.03	0.02	0.14
77:	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Exceedance Chart

S004_BLI050006_30072020_141229: Exceedance Chart



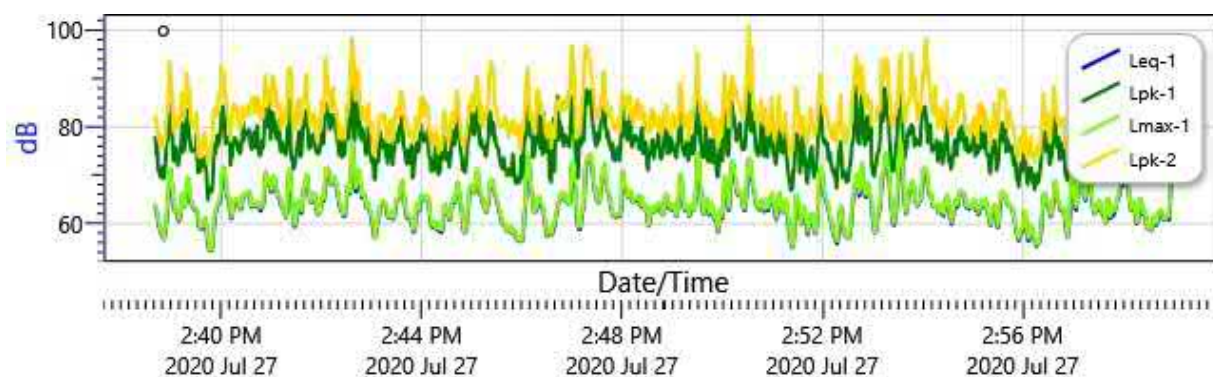
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		73.5	72.4	71.5	71.0	70.7	70.2	69.9	69.5	69.2
10%:	68.9	68.6	68.3	68.1	67.8	67.5	67.3	67.1	66.9	66.7
20%:	66.5	66.3	66.2	66.1	65.9	65.8	65.7	65.6	65.5	65.4
30%:	65.3	65.2	65.1	65.0	64.8	64.7	64.6	64.6	64.5	64.4
40%:	64.3	64.2	64.1	64.0	63.9	63.9	63.8	63.7	63.6	63.6
50%:	63.5	63.5	63.4	63.3	63.3	63.2	63.1	63.0	63.0	62.9
60%:	62.8	62.7	62.7	62.6	62.5	62.4	62.3	62.3	62.2	62.1

70%:	62.0	61.9	61.8	61.7	61.6	61.4	61.3	61.2	61.0	60.9
80%:	60.7	60.5	60.3	60.1	59.9	59.7	59.5	59.3	59.1	58.9
90%:	58.7	58.5	58.3	58.1	57.9	57.6	57.2	56.9	56.4	55.7
100%:	54.2									

Logged Data Chart

S004_BLI050006_30072020_141229: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M6 Information Panel

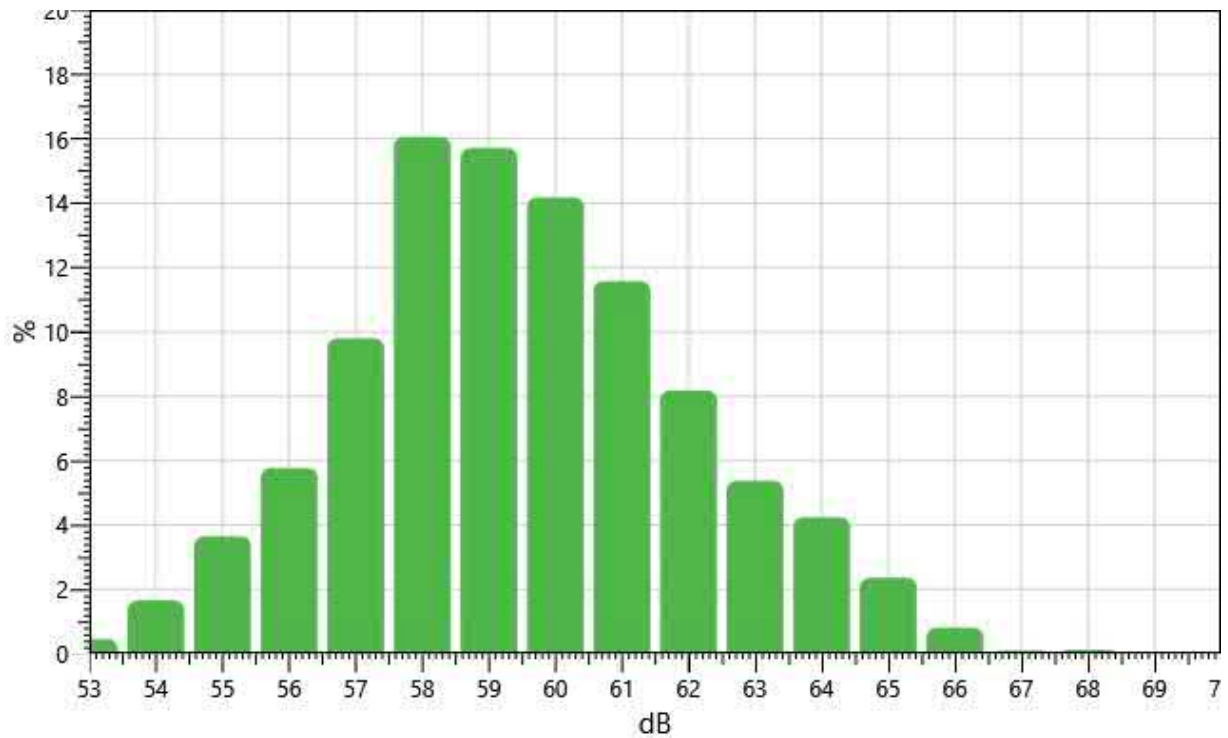
Name	S002_BLN040003_30072020_105539
Start Time	7/27/2020 2:41:05 PM
Stop Time	7/27/2020 3:01:07 PM
Device Name	BLN040003
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	60.7 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S002_BLN040003_30072020_105539: Statistics Chart



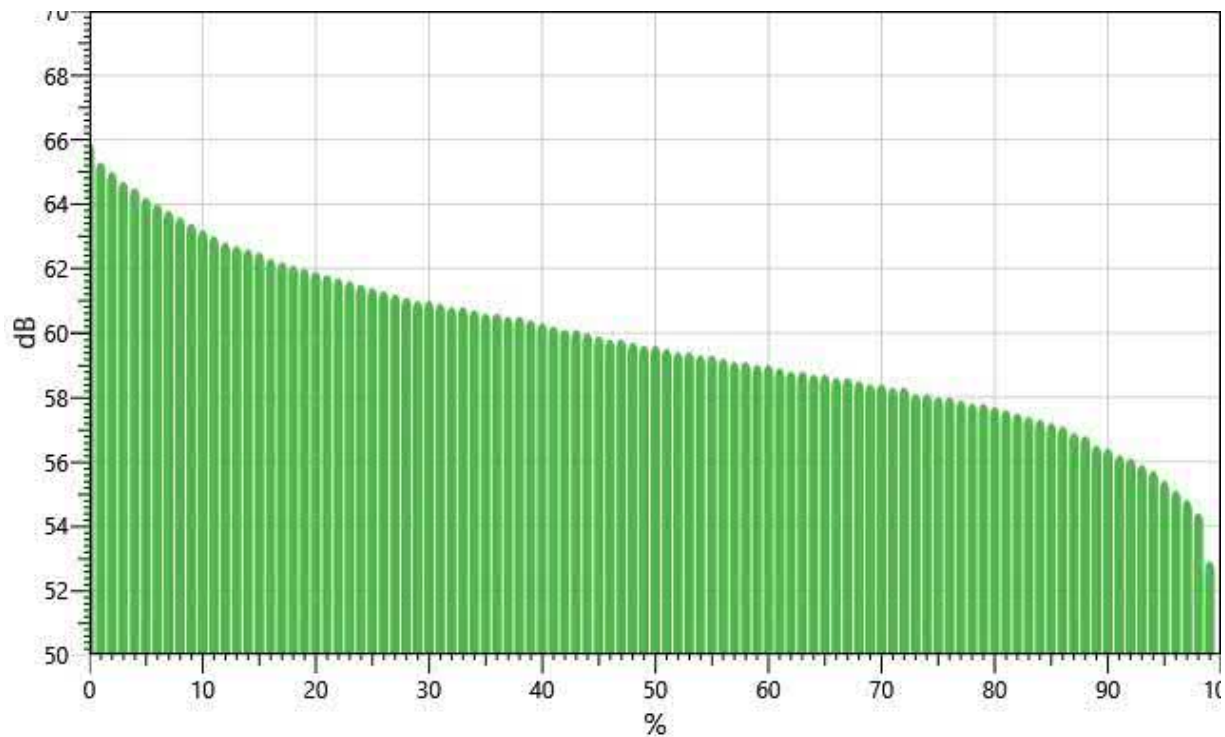
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
53:	0.01	0.07	0.03	0.01	0.01	0.08	0.04	0.04	0.05	0.11	0.45
54:	0.14	0.07	0.05	0.15	0.12	0.16	0.14	0.21	0.29	0.33	1.65
55:	0.42	0.44	0.46	0.15	0.31	0.35	0.35	0.37	0.36	0.43	3.64
56:	0.51	0.53	0.74	0.84	0.57	0.59	0.48	0.40	0.59	0.53	5.77
57:	0.55	0.49	0.72	0.82	0.95	1.17	1.02	1.27	1.46	1.37	9.80
58:	1.48	1.60	1.61	0.97	1.63	1.57	1.75	1.96	1.91	1.58	16.06
59:	1.61	1.61	1.55	1.80	1.64	1.70	1.53	1.51	1.44	1.31	15.71
60:	1.34	1.32	1.36	1.28	1.23	1.33	1.42	1.70	1.56	1.62	14.18
61:	1.54	1.34	1.53	0.95	0.89	1.24	0.98	0.90	1.12	1.08	11.57
62:	0.91	0.83	0.94	0.83	0.83	0.67	0.77	0.85	0.86	0.68	8.18
63:	0.70	0.63	0.55	0.48	0.44	0.42	0.48	0.59	0.59	0.47	5.37
64:	0.50	0.48	0.35	0.30	0.28	0.52	0.45	0.48	0.41	0.46	4.24
65:	0.36	0.27	0.28	0.23	0.25	0.24	0.21	0.24	0.13	0.14	2.36
66:	0.14	0.11	0.10	0.11	0.11	0.13	0.05	0.02	0.03	0.01	0.80
67:	0.01	0.01	0.02	0.02	0.00	0.01	0.00	0.01	0.01	0.01	0.10
68:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.02	0.12

69: 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01

Exceedance Chart

S002_BLN040003_30072020_105539: Exceedance Chart

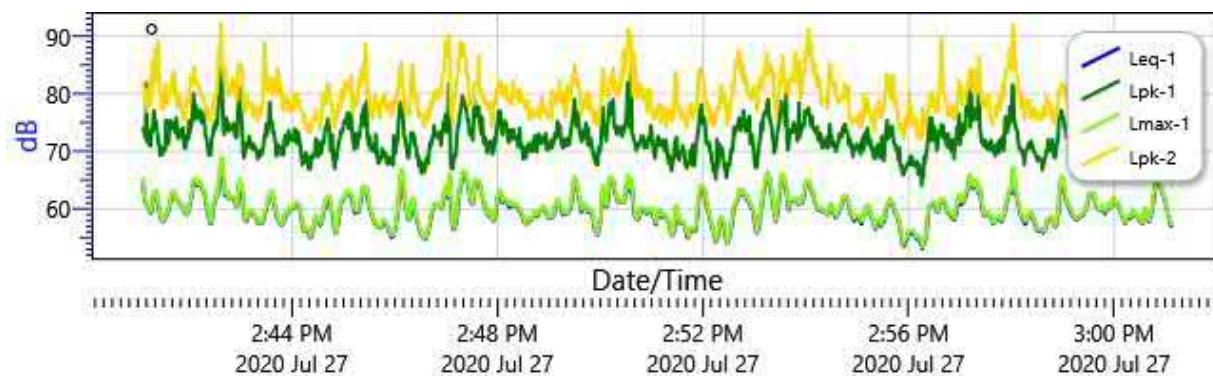


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		65.9	65.3	65.0	64.7	64.5	64.2	64.0	63.8	63.6
10%:	63.4	63.2	63.0	62.8	62.7	62.6	62.5	62.3	62.2	62.1
20%:	62.0	61.9	61.8	61.7	61.6	61.5	61.4	61.3	61.2	61.1
30%:	61.0	61.0	60.9	60.8	60.8	60.7	60.6	60.6	60.5	60.5
40%:	60.4	60.3	60.2	60.1	60.1	60.0	59.9	59.8	59.8	59.7
50%:	59.6	59.6	59.5	59.4	59.4	59.3	59.3	59.2	59.1	59.1
60%:	59.0	59.0	58.9	58.8	58.8	58.7	58.7	58.6	58.6	58.5
70%:	58.4	58.4	58.3	58.3	58.1	58.1	58.0	58.0	57.9	57.8
80%:	57.8	57.7	57.6	57.5	57.4	57.3	57.2	57.1	56.9	56.8
90%:	56.5	56.4	56.2	56.1	55.9	55.7	55.4	55.1	54.8	54.4
100%:	52.9									

Logged Data Chart

S002_BLN040003_30072020_105539: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M7 Information Panel

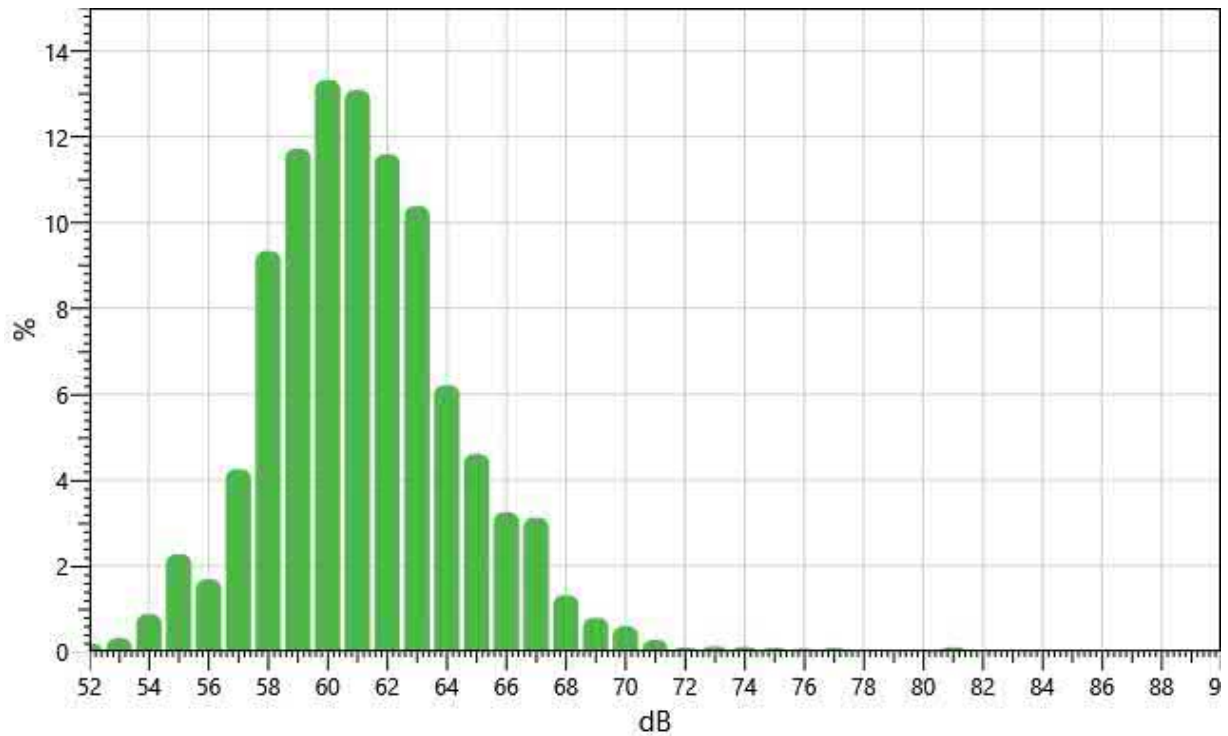
Name	S003_BLI050006_30072020_141211
Start Time	7/27/2020 2:06:15 PM
Stop Time	7/27/2020 2:26:19 PM
Device Name	BLI050006
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	63.6 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S003_BLI050006_30072020_141211: Statistics Chart



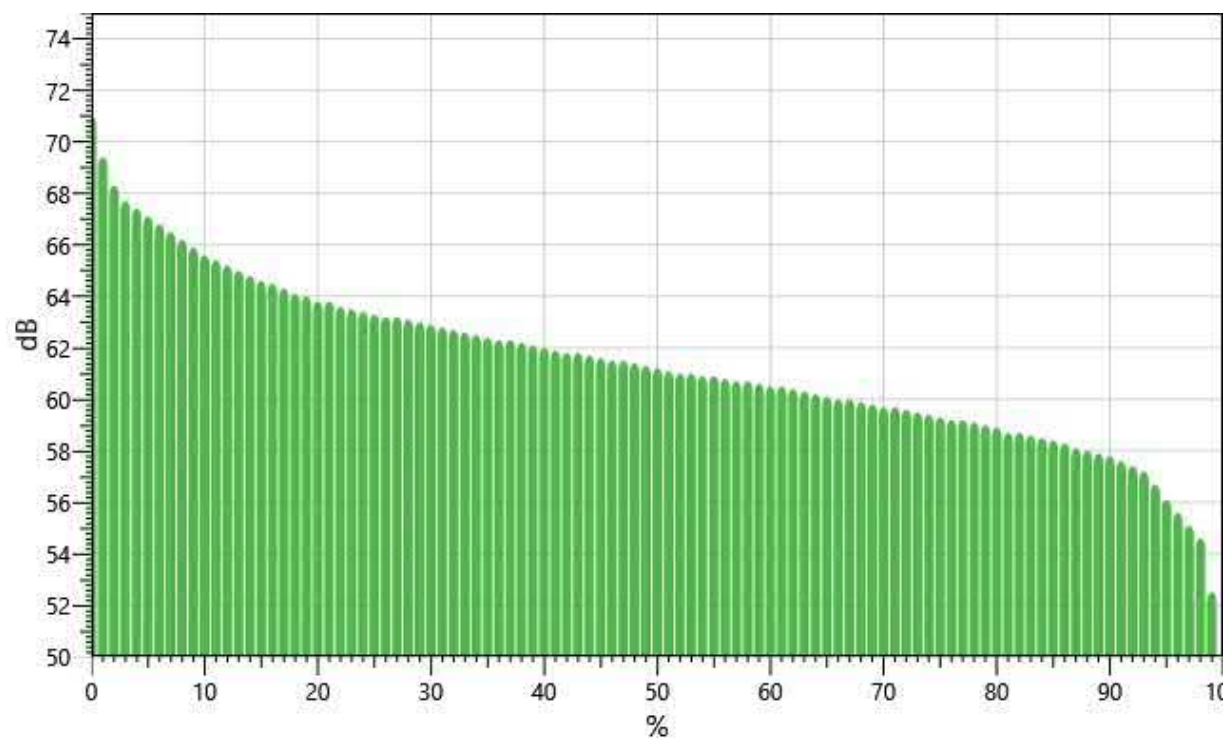
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
52:	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.04	0.06	0.07	0.20
53:	0.05	0.02	0.02	0.03	0.02	0.02	0.03	0.03	0.06	0.04	0.31
54:	0.04	0.02	0.05	0.06	0.11	0.09	0.09	0.18	0.11	0.12	0.88
55:	0.15	0.21	0.31	0.12	0.25	0.28	0.28	0.28	0.18	0.21	2.28
56:	0.12	0.12	0.13	0.12	0.09	0.19	0.24	0.19	0.25	0.24	1.69
57:	0.22	0.18	0.24	0.28	0.44	0.49	0.50	0.60	0.50	0.80	4.25
58:	1.03	0.90	0.91	0.38	0.73	1.23	1.06	1.09	1.10	0.90	9.34
59:	0.98	0.93	1.08	1.14	1.14	1.30	1.13	1.27	1.34	1.41	11.73
60:	1.16	1.21	1.04	1.17	1.06	1.24	1.49	1.41	1.74	1.79	13.33
61:	1.68	1.47	1.27	0.86	1.13	1.39	1.35	1.50	1.28	1.14	13.09
62:	1.14	1.23	1.24	1.17	1.29	1.13	1.24	1.05	1.07	1.04	11.59
63:	1.07	1.01	1.10	1.22	1.06	1.00	0.90	0.98	0.93	1.12	10.38
64:	0.84	0.65	0.69	0.48	0.40	0.69	0.63	0.62	0.63	0.59	6.21
65:	0.50	0.38	0.46	0.52	0.49	0.50	0.44	0.46	0.46	0.39	4.61
66:	0.41	0.30	0.29	0.25	0.33	0.27	0.35	0.36	0.31	0.39	3.25
67:	0.43	0.41	0.36	0.29	0.17	0.40	0.37	0.24	0.25	0.20	3.12

68:	0.23	0.22	0.09	0.13	0.11	0.11	0.15	0.09	0.09	0.09	1.31
69:	0.11	0.08	0.06	0.08	0.07	0.07	0.07	0.06	0.07	0.12	0.79
70:	0.11	0.12	0.12	0.05	0.01	0.03	0.02	0.04	0.05	0.05	0.59
71:	0.05	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.03	0.01	0.28
72:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.10
73:	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.12
74:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.11
75:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.09
76:	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.07
77:	0.01	0.01	0.01	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.09
78:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
79:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.03
80:	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04
81:	0.00	0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.00	0.00	0.10

Exceedance Chart

S003_BLI050006_30072020_141211: Exceedance Chart



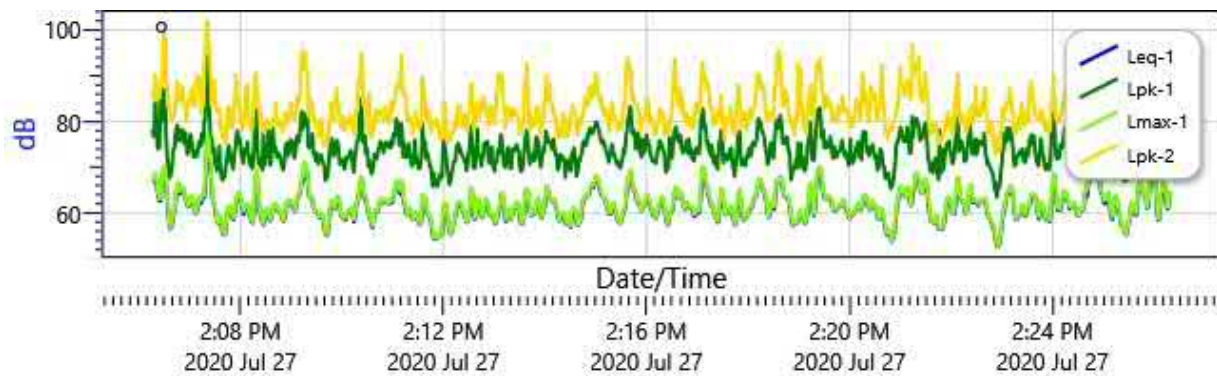
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		71.0	69.4	68.3	67.7	67.4	67.1	66.8	66.5	66.2

10%:	65.9	65.6	65.4	65.2	65.0	64.8	64.6	64.5	64.3	64.1
20%:	64.0	63.8	63.8	63.6	63.5	63.4	63.3	63.2	63.2	63.1
30%:	63.0	62.9	62.8	62.7	62.6	62.5	62.4	62.3	62.3	62.2
40%:	62.1	62.0	61.9	61.8	61.8	61.7	61.6	61.5	61.5	61.4
50%:	61.3	61.2	61.1	61.0	61.0	60.9	60.9	60.8	60.7	60.7
60%:	60.6	60.5	60.5	60.4	60.3	60.2	60.1	60.0	60.0	59.9
70%:	59.8	59.7	59.7	59.6	59.5	59.4	59.3	59.2	59.2	59.1
80%:	59.0	58.9	58.7	58.7	58.6	58.5	58.4	58.3	58.1	58.0
90%:	57.9	57.8	57.6	57.4	57.2	56.7	56.1	55.6	55.1	54.6
100%:	52.5									

Logged Data Chart

S003_BLI050006_30072020_141211: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M8 Information Panel

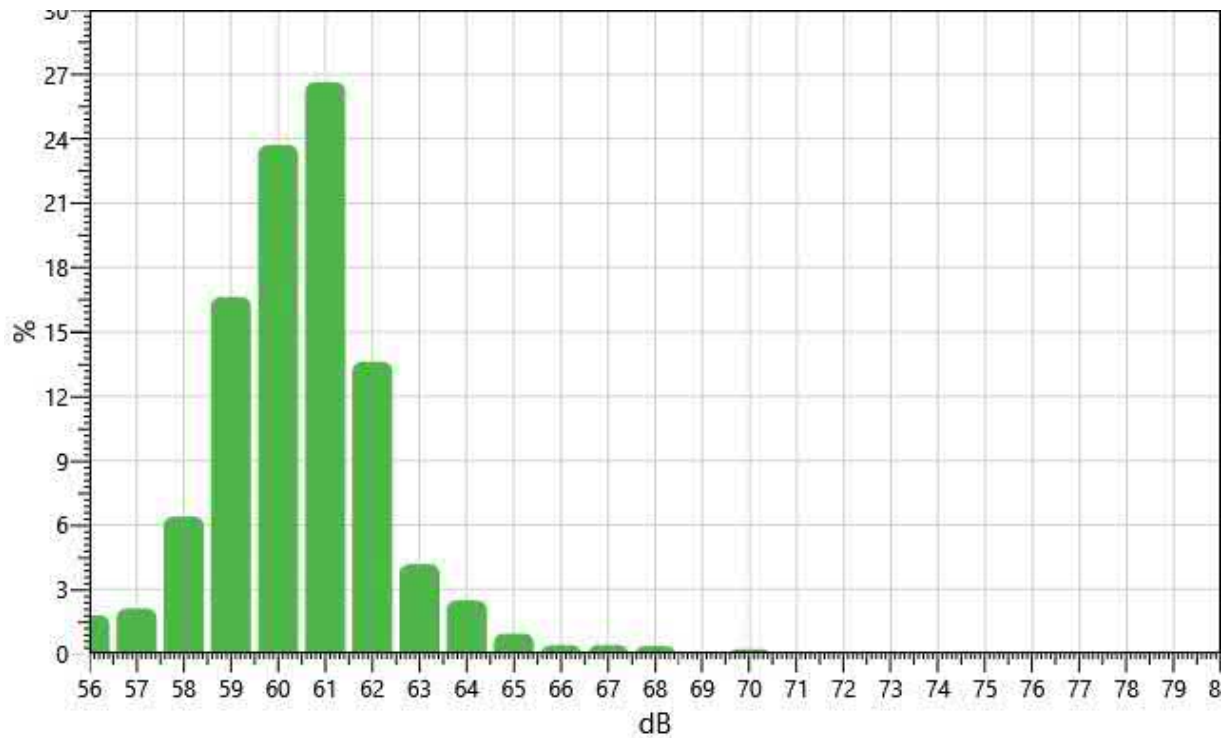
Name	S007_BLI050006_30072020_141328
Start Time	7/28/2020 3:47:41 PM
Stop Time	7/28/2020 4:08:05 PM
Device Name	BLI050006
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	61.4 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S007_BLI050006_30072020_141328: Statistics Chart



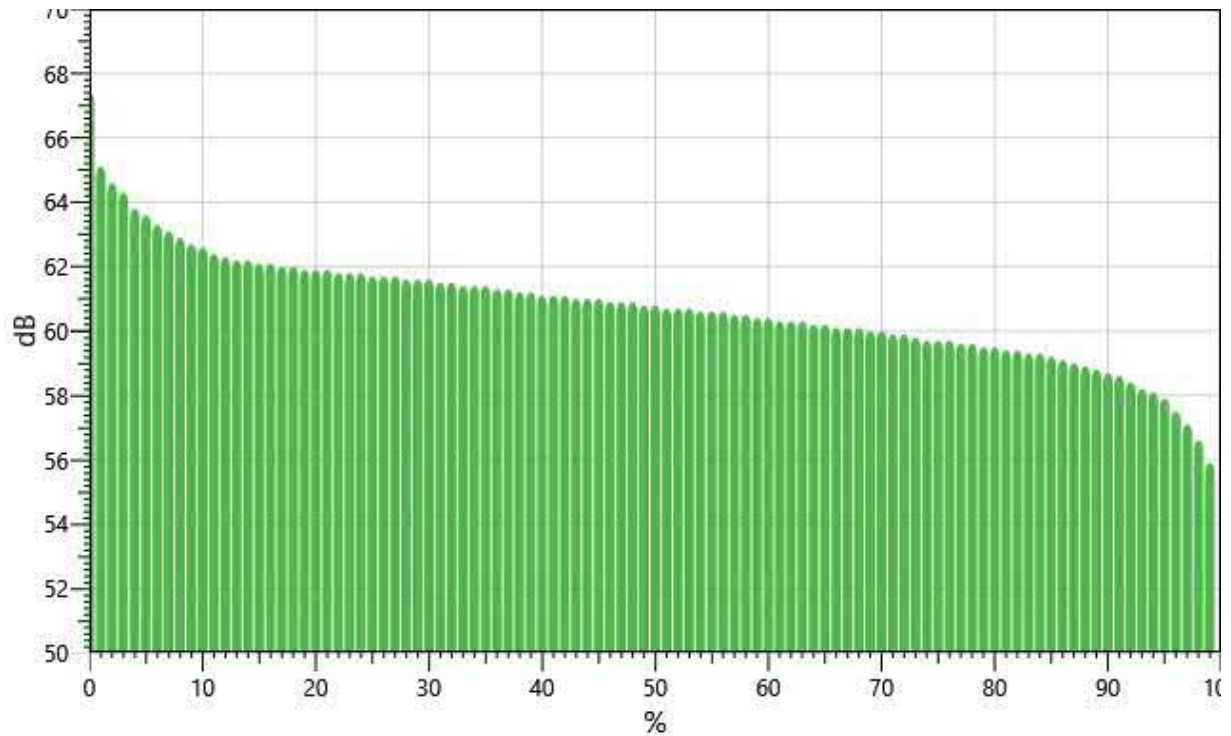
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
56:	0.03	0.10	0.11	0.12	0.10	0.22	0.25	0.20	0.33	0.33	1.78
57:	0.11	0.11	0.17	0.22	0.34	0.19	0.25	0.24	0.26	0.23	2.10
58:	0.44	0.59	0.91	0.33	0.46	0.67	0.68	0.81	0.72	0.79	6.39
59:	0.90	0.96	1.10	1.44	1.53	2.21	2.22	2.21	2.15	1.89	16.62
60:	1.76	2.07	2.34	2.87	2.47	2.34	2.14	2.45	2.66	2.60	23.71
61:	3.16	2.85	2.93	1.87	2.19	2.57	2.69	2.55	2.97	2.86	26.64
62:	2.78	2.37	2.14	1.64	1.28	0.76	0.64	0.69	0.60	0.70	13.60
63:	0.52	0.42	0.46	0.58	0.47	0.30	0.34	0.41	0.41	0.26	4.17
64:	0.19	0.28	0.21	0.20	0.22	0.30	0.35	0.28	0.26	0.21	2.49
65:	0.25	0.15	0.12	0.07	0.08	0.05	0.07	0.04	0.06	0.06	0.93
66:	0.03	0.04	0.05	0.03	0.03	0.04	0.03	0.05	0.04	0.04	0.39
67:	0.04	0.04	0.03	0.02	0.03	0.04	0.04	0.04	0.06	0.05	0.40
68:	0.09	0.07	0.03	0.02	0.02	0.02	0.03	0.04	0.01	0.01	0.35
69:	0.01	0.01	0.01	0.02	0.03	0.01	0.00	0.00	0.00	0.00	0.10
70:	0.03	0.04	0.02	0.02	0.01	0.02	0.03	0.02	0.01	0.01	0.21
71:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03

72:	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.04
73:	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03

Exceedance Chart

S007_BLI050006_30072020_141328: Exceedance Chart

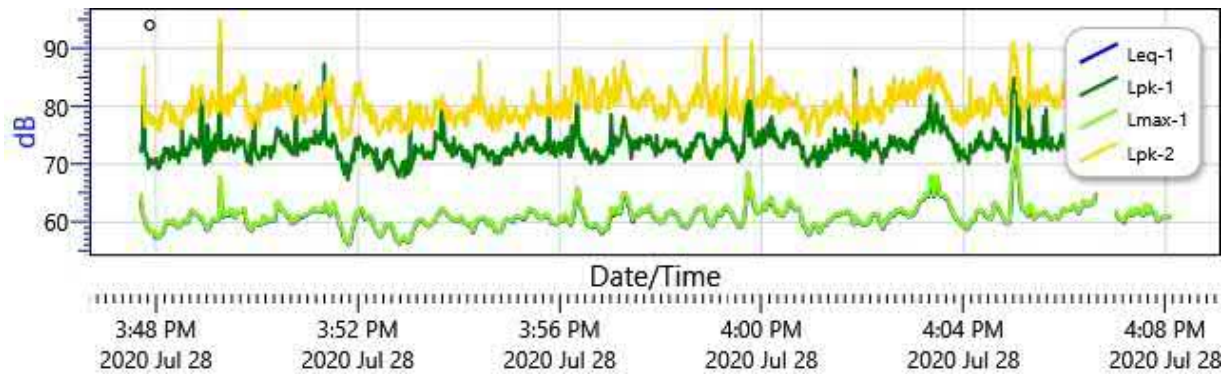


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		67.4	65.1	64.6	64.3	63.8	63.6	63.3	63.1	62.9
10%:	62.7	62.6	62.4	62.3	62.2	62.2	62.1	62.1	62.0	62.0
20%:	61.9	61.9	61.9	61.8	61.8	61.8	61.7	61.7	61.7	61.6
30%:	61.6	61.6	61.5	61.5	61.4	61.4	61.4	61.3	61.3	61.2
40%:	61.2	61.1	61.1	61.1	61.0	61.0	61.0	60.9	60.9	60.9
50%:	60.8	60.8	60.7	60.7	60.7	60.6	60.6	60.6	60.5	60.5
60%:	60.4	60.4	60.3	60.3	60.3	60.2	60.2	60.1	60.1	60.1
70%:	60.0	60.0	59.9	59.9	59.8	59.7	59.7	59.7	59.6	59.6
80%:	59.5	59.5	59.4	59.4	59.3	59.3	59.2	59.1	59.0	58.9
90%:	58.8	58.7	58.6	58.4	58.2	58.1	57.9	57.5	57.1	56.6
100%:	55.9									

Logged Data Chart

S007_BLI050006_30072020_141328: Logged Data Chart

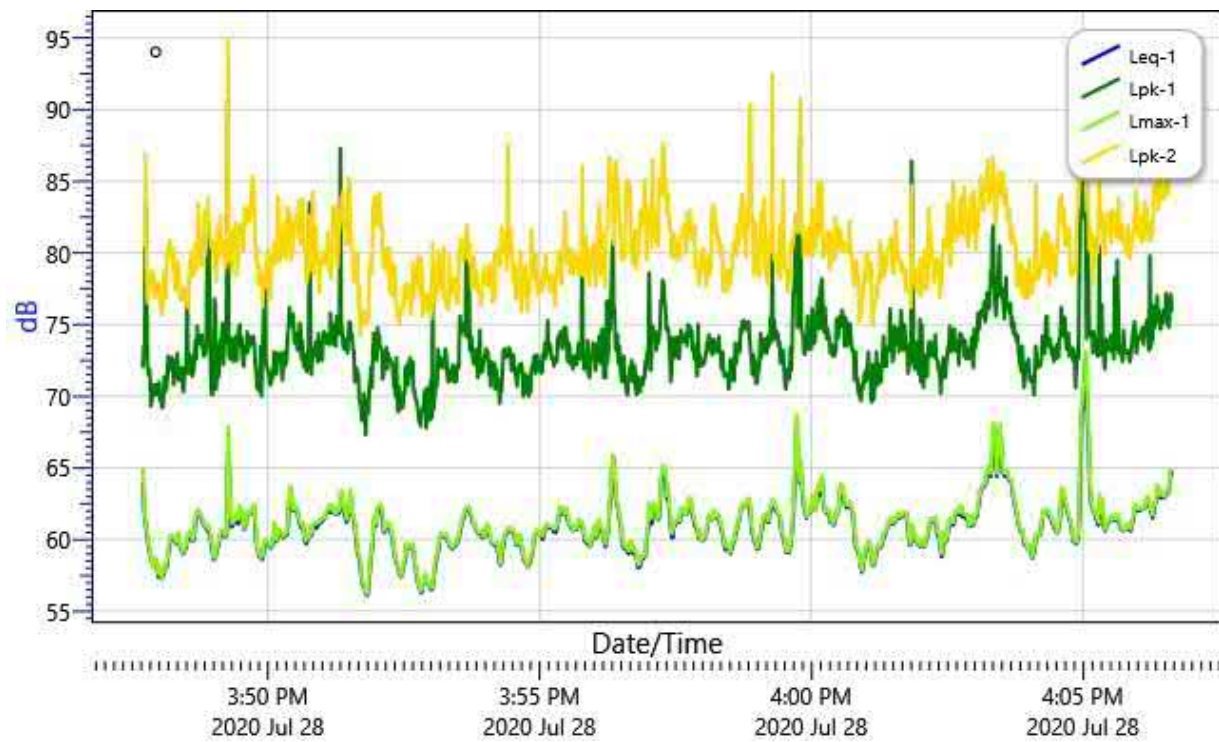


Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Dose	1	0 %	Lpk	1	90.7 dB
Lmax	1	73.2 dB			
Weighting	1	A	Response	1	SLOW
Bandwidth	1	1/3	Exchange Rate	1	3 dB
Integrating Threshold	1	80 dB	Log Rate	1	1 s
Exchange Rate	2	3 dB	Integrating Threshold	2	80 dB
Weighting	2	C	Response	2	SLOW

Logged Data Chart

Study 1: Logged Data Chart



Session Report

12/8/2020

Monitoring Site: M9 Information Panel

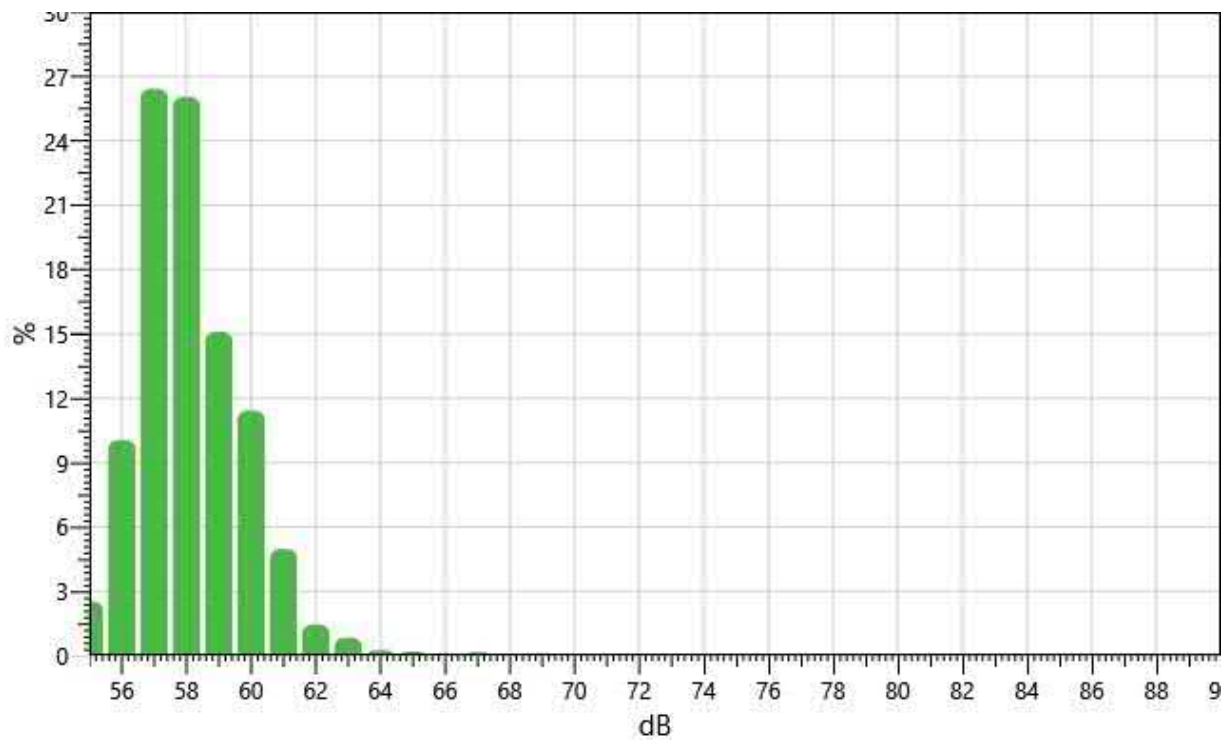
Name	S005_BLN040003_30072020_105623
Start Time	7/28/2020 3:59:45 PM
Stop Time	7/28/2020 4:19:48 PM
Device Name	BLN040003
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	59.8 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S005_BLN040003_30072020_105623: Statistics Chart



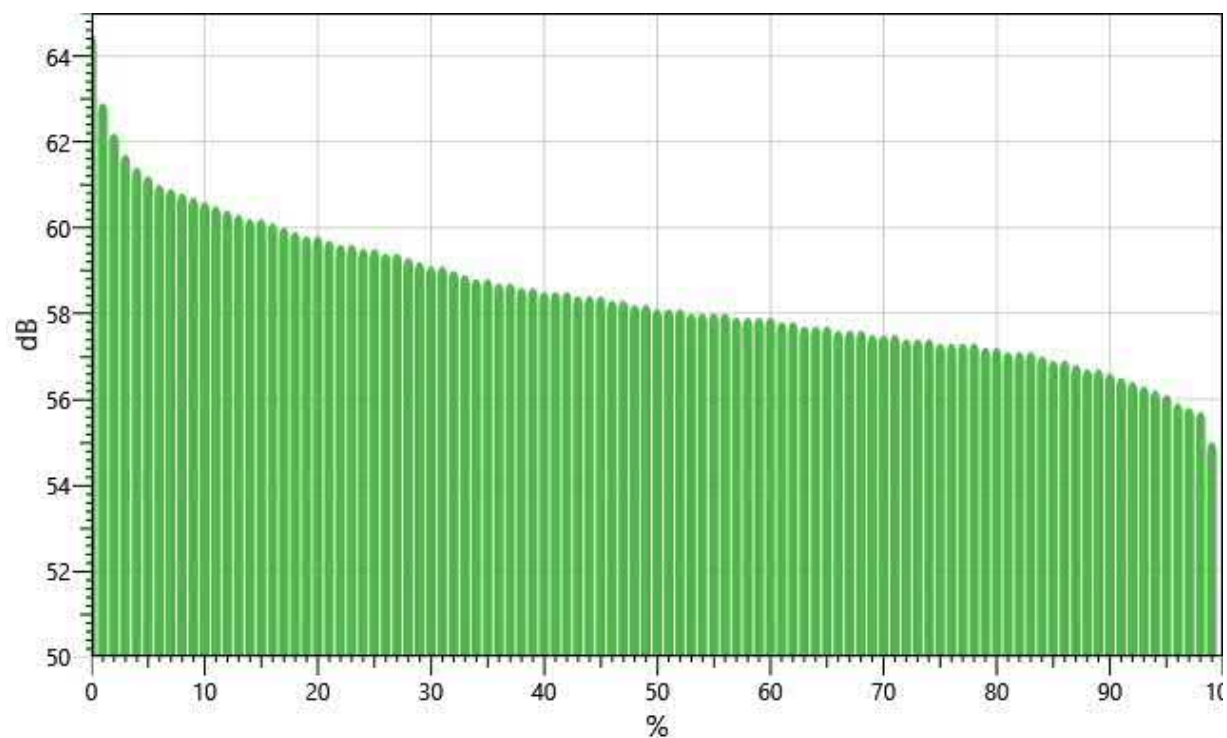
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
55:	0.00	0.04	0.04	0.02	0.07	0.16	0.21	0.34	0.70	0.94	2.52
56:	0.80	0.46	0.90	1.23	0.95	0.88	1.09	1.16	1.12	1.46	10.05
57:	1.50	1.77	2.45	2.66	3.11	3.56	2.87	2.95	2.71	2.83	26.42
58:	3.46	3.78	3.50	1.52	2.47	2.93	2.42	2.17	2.26	1.53	26.05
59:	1.56	1.40	1.25	1.38	1.30	1.40	1.95	1.86	1.64	1.36	15.09
60:	1.27	1.13	1.39	1.35	1.39	1.06	1.04	0.91	0.94	0.95	11.42
61:	0.81	0.70	0.65	0.34	0.37	0.67	0.52	0.38	0.32	0.21	4.96
62:	0.14	0.15	0.15	0.18	0.16	0.13	0.18	0.15	0.11	0.09	1.45
63:	0.11	0.08	0.07	0.05	0.06	0.16	0.08	0.08	0.09	0.06	0.84
64:	0.04	0.03	0.04	0.02	0.04	0.02	0.02	0.02	0.02	0.01	0.26
65:	0.03	0.04	0.03	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.19
66:	0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.12
67:	0.01	0.01	0.01	0.01	0.00	0.01	0.02	0.04	0.03	0.02	0.16
68:	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.09
69:	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.02	0.00	0.12
70:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02

71:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
72:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
73:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
74:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
75:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
76:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
77:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
78:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
79:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
80:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
81:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
82:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
83:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Exceedance Chart

S005_BLN040003_30072020_105623: Exceedance Chart



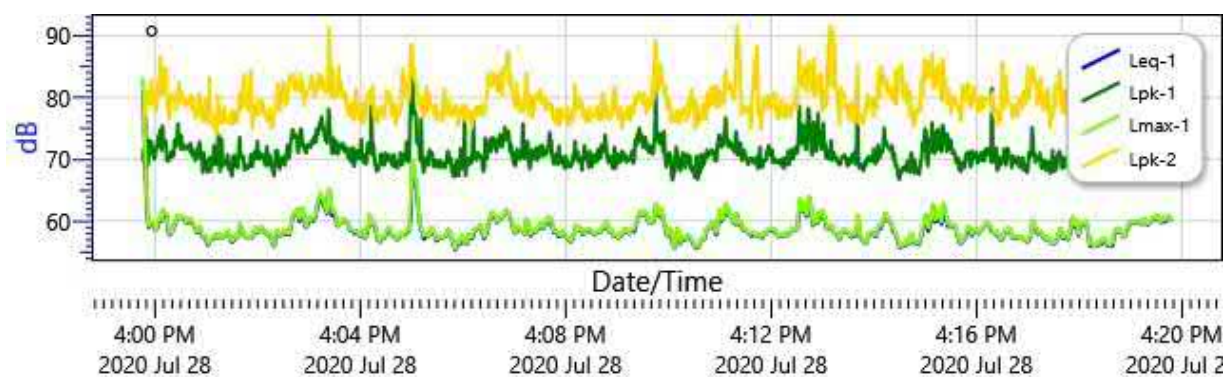
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		64.5	62.9	62.2	61.7	61.4	61.2	61.0	60.9	60.8
10%:	60.7	60.6	60.5	60.4	60.3	60.2	60.2	60.1	60.0	59.9

20%:	59.8	59.8	59.7	59.6	59.6	59.5	59.5	59.4	59.4	59.3
30%:	59.2	59.1	59.1	59.0	58.9	58.8	58.8	58.7	58.7	58.6
40%:	58.6	58.5	58.5	58.5	58.4	58.4	58.4	58.3	58.3	58.2
50%:	58.2	58.1	58.1	58.1	58.0	58.0	58.0	58.0	57.9	57.9
60%:	57.9	57.9	57.8	57.8	57.7	57.7	57.7	57.6	57.6	57.6
70%:	57.5	57.5	57.5	57.4	57.4	57.4	57.3	57.3	57.3	57.3
80%:	57.2	57.2	57.1	57.1	57.1	57.0	56.9	56.9	56.8	56.7
90%:	56.7	56.6	56.5	56.4	56.3	56.2	56.1	55.9	55.8	55.7
100%:	55.0									

Logged Data Chart

S005_BLN040003_30072020_105623: Logged Data Chart



Session Report

12/8/2020

Monitoring Site: M10 Information Panel

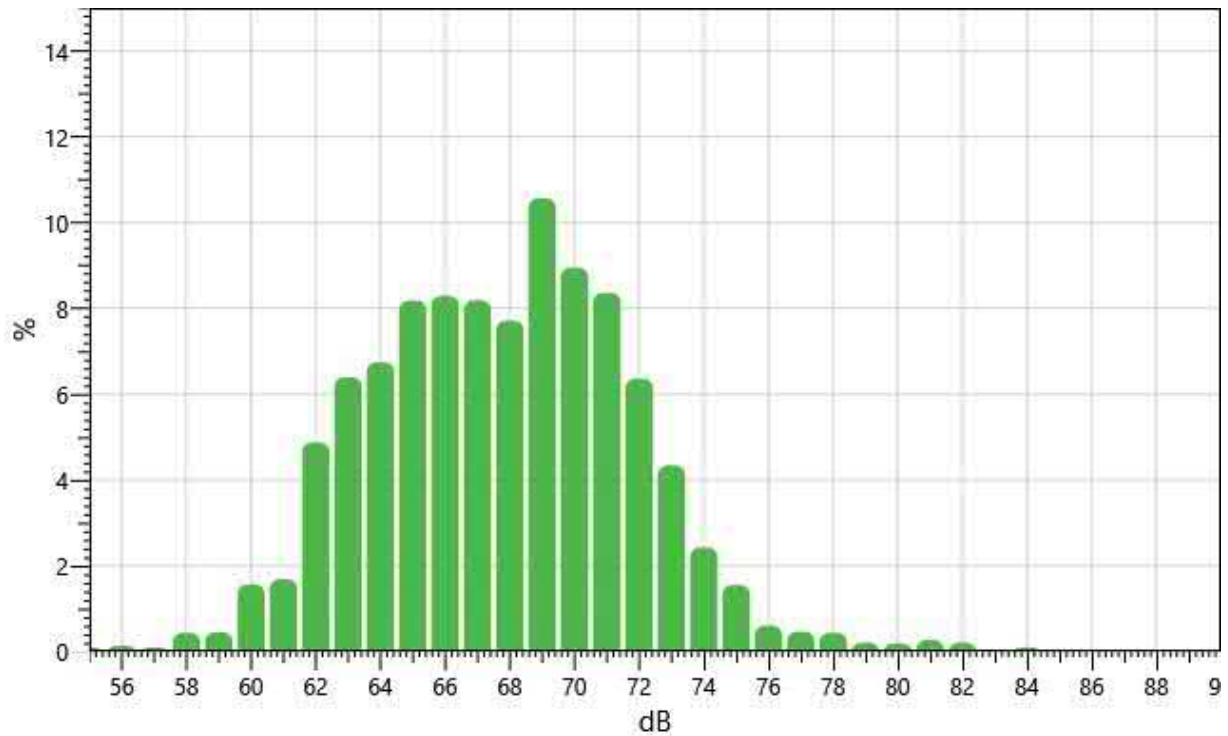
Name	S009_BLN040003_30072020_105724
Start Time	7/29/2020 1:28:28 PM
Stop Time	7/29/2020 1:48:30 PM
Device Name	BLN040003
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	70.3 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S009_BLN040003_30072020_105724: Statistics Chart



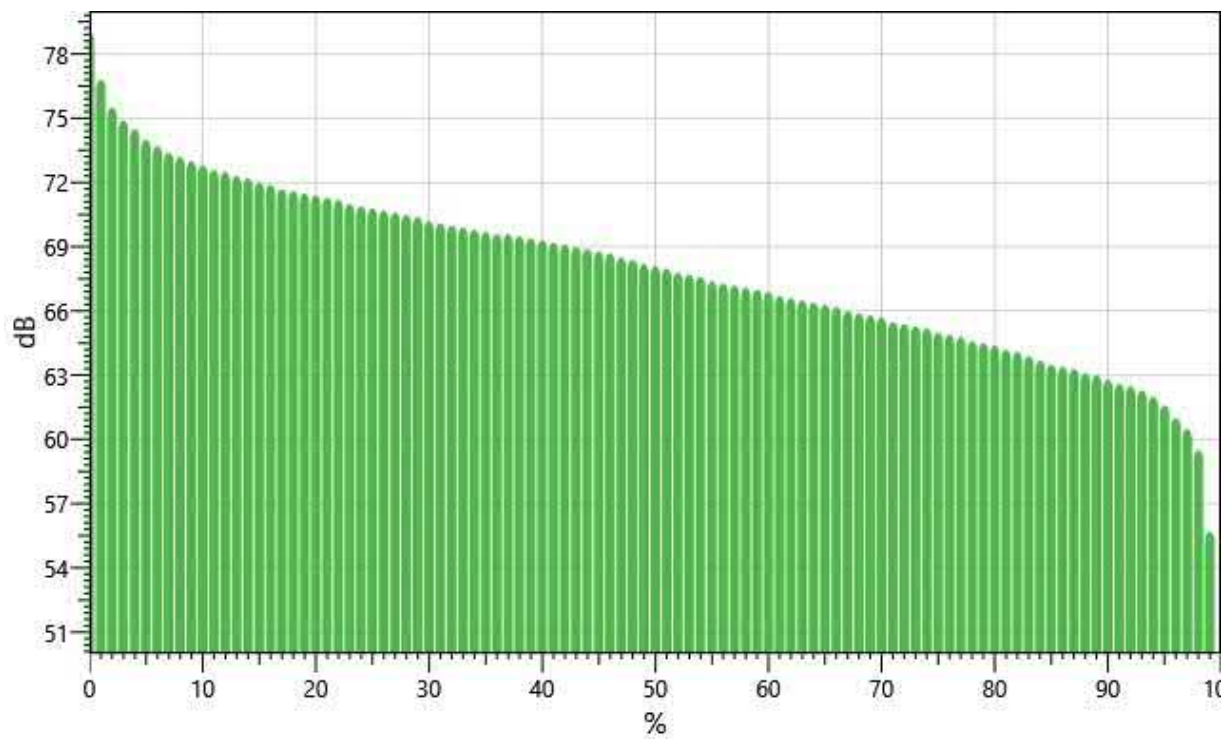
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
55:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.08	0.09
56:	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.14
57:	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.10
58:	0.03	0.02	0.07	0.03	0.02	0.05	0.09	0.03	0.06	0.05	0.44
59:	0.02	0.03	0.03	0.03	0.03	0.04	0.08	0.05	0.08	0.05	0.45
60:	0.04	0.04	0.06	0.19	0.18	0.15	0.18	0.14	0.25	0.34	1.57
61:	0.19	0.23	0.15	0.09	0.09	0.17	0.16	0.20	0.21	0.19	1.69
62:	0.26	0.32	0.43	0.43	0.58	0.43	0.48	0.62	0.58	0.74	4.88
63:	0.62	0.65	0.70	0.64	0.58	0.60	0.91	0.63	0.57	0.49	6.40
64:	0.53	0.59	0.72	0.59	0.55	0.74	0.77	0.84	0.75	0.65	6.74
65:	0.77	0.83	0.89	0.86	0.77	0.63	0.85	0.90	0.87	0.82	8.18
66:	0.68	0.65	0.78	0.82	0.87	0.79	0.84	0.91	0.99	0.96	8.29
67:	0.95	1.01	0.96	0.81	0.43	0.98	0.81	0.66	0.74	0.85	8.19
68:	0.81	0.73	0.68	0.78	0.65	0.63	0.71	0.84	0.87	1.01	7.71
69:	0.97	0.98	0.95	0.93	1.11	1.02	1.02	1.16	1.18	1.25	10.57
70:	1.13	1.02	0.98	0.99	0.40	0.89	0.80	0.90	0.92	0.92	8.95

71:	0.91	0.90	0.80	0.88	0.89	0.89	0.86	0.87	0.68	0.70	8.36
72:	0.71	0.72	0.65	0.61	0.60	0.64	0.61	0.71	0.61	0.49	6.36
73:	0.57	0.57	0.62	0.53	0.16	0.51	0.36	0.35	0.35	0.31	4.34
74:	0.27	0.32	0.30	0.24	0.19	0.21	0.27	0.27	0.16	0.19	2.43
75:	0.27	0.21	0.13	0.13	0.13	0.15	0.15	0.12	0.14	0.12	1.55
76:	0.09	0.09	0.09	0.06	0.02	0.07	0.05	0.04	0.04	0.05	0.60
77:	0.05	0.08	0.04	0.05	0.05	0.06	0.03	0.04	0.04	0.04	0.47
78:	0.04	0.03	0.05	0.02	0.04	0.06	0.05	0.05	0.05	0.05	0.44
79:	0.04	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.21
80:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.19
81:	0.03	0.02	0.03	0.03	0.03	0.04	0.03	0.04	0.01	0.02	0.28
82:	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.06	0.21
83:	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05
84:	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.04	0.10
85:	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Exceedance Chart

S009_BLN040003_30072020_105724: Exceedance Chart



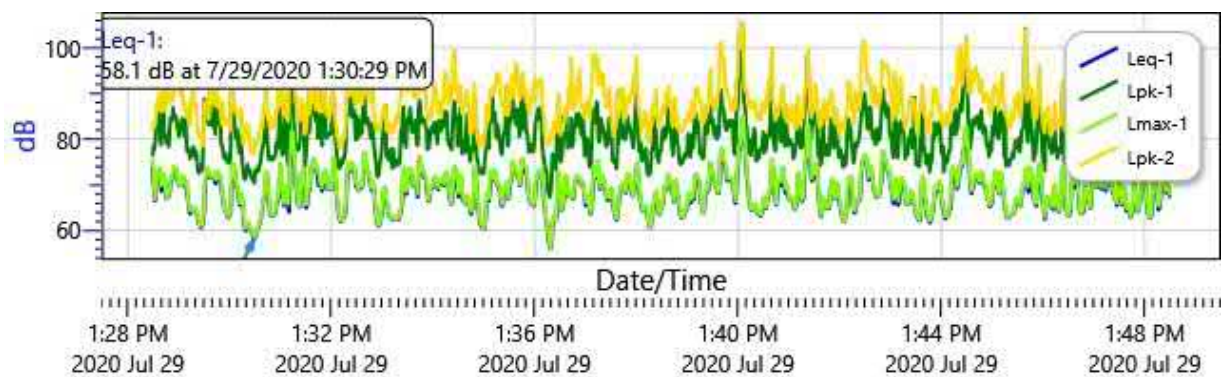
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
---	----	----	----	----	----	----	----	----	----	----

0%:		79.0	76.8	75.5	74.9	74.5	74.0	73.7	73.4	73.2
10%:	73.0	72.8	72.6	72.5	72.3	72.2	72.0	71.9	71.7	71.6
20%:	71.5	71.4	71.3	71.2	71.0	70.9	70.8	70.7	70.6	70.5
30%:	70.4	70.2	70.1	70.0	69.9	69.8	69.7	69.6	69.6	69.5
40%:	69.4	69.3	69.2	69.1	69.0	68.9	68.8	68.7	68.5	68.4
50%:	68.2	68.1	68.0	67.8	67.7	67.6	67.4	67.3	67.2	67.1
60%:	67.0	66.9	66.7	66.6	66.5	66.4	66.3	66.2	66.0	65.9
70%:	65.8	65.7	65.5	65.4	65.3	65.2	65.0	64.9	64.8	64.6
80%:	64.5	64.4	64.2	64.1	63.9	63.7	63.5	63.4	63.3	63.1
90%:	63.0	62.8	62.6	62.5	62.3	62.0	61.6	61.0	60.5	59.5
100%:	55.7									

Logged Data Chart

S009_BLN040003_30072020_105724: Logged Data Chart



Session Report

12/8/2020

Monitoring Site: M11 Information Panel

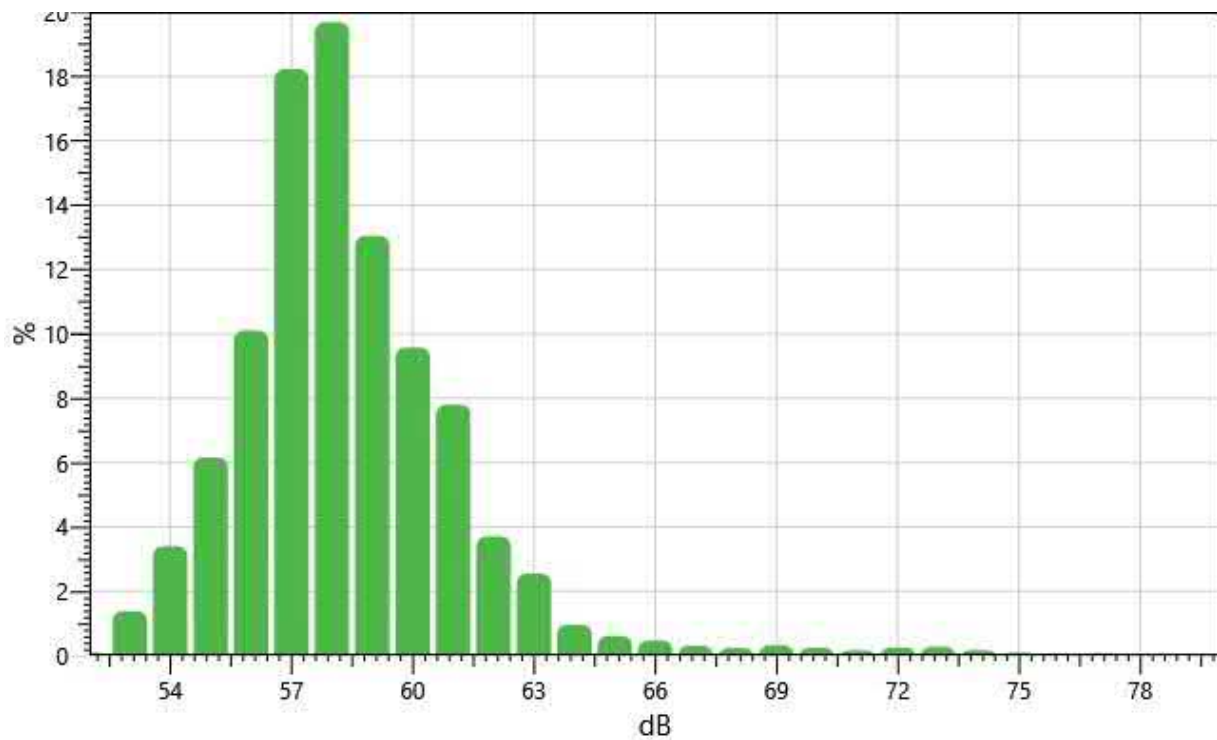
Name	S010_BLN040003_30072020_105740
Start Time	7/29/2020 1:53:26 PM
Stop Time	7/29/2020 2:13:28 PM
Device Name	BLN040003
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	60.8 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S010_BLN040003_30072020_105740: Statistics Chart



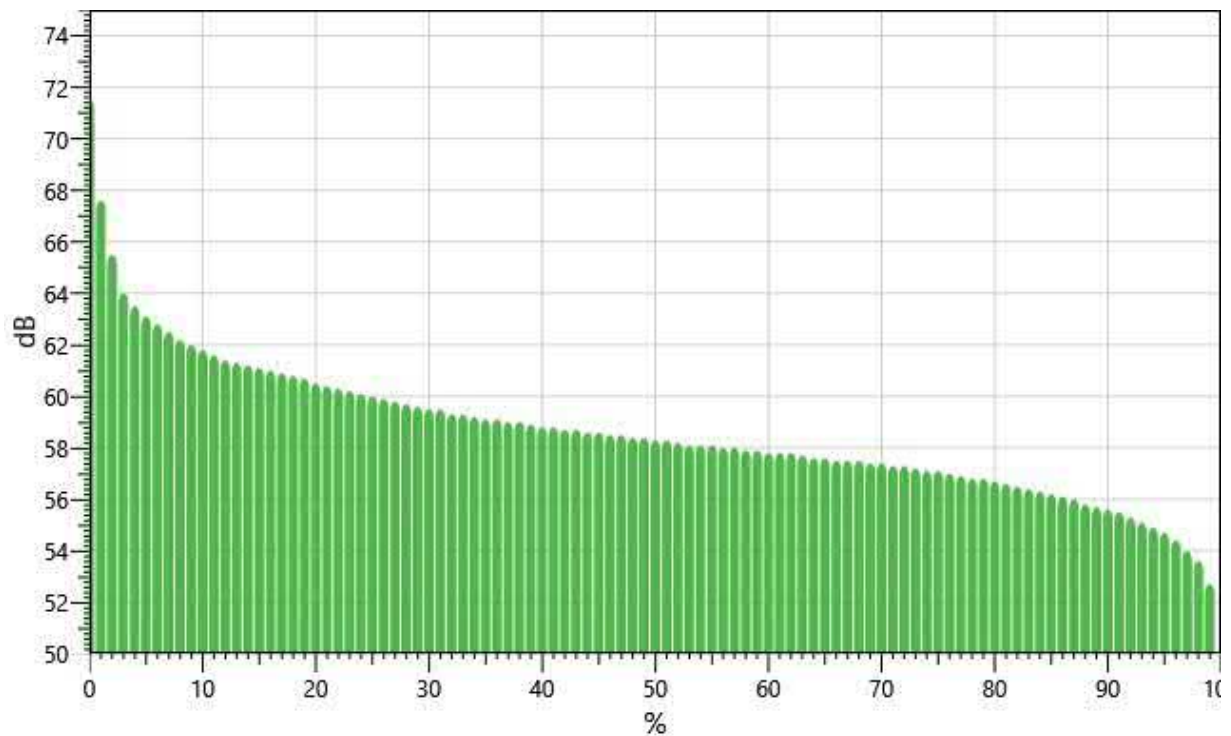
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
52:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.09
53:	0.08	0.02	0.06	0.16	0.15	0.07	0.17	0.27	0.17	0.23	1.38
54:	0.25	0.28	0.21	0.33	0.21	0.30	0.27	0.34	0.57	0.63	3.40
55:	0.40	0.58	0.48	0.14	0.56	0.65	0.85	0.94	0.83	0.73	6.16
56:	0.73	0.77	1.00	0.98	0.86	0.96	1.07	1.12	1.29	1.34	10.10
57:	1.32	1.08	1.55	1.76	1.63	2.11	2.49	2.09	1.83	2.36	18.22
58:	2.20	2.03	2.55	1.20	1.95	2.28	2.09	1.78	1.95	1.65	19.68
59:	1.82	1.81	1.63	1.55	1.16	0.99	1.08	1.10	0.89	1.02	13.05
60:	1.30	1.13	1.27	0.84	0.93	0.79	0.80	0.82	0.79	0.90	9.58
61:	0.90	1.04	1.20	0.73	0.79	0.69	0.73	0.64	0.61	0.47	7.80
62:	0.42	0.35	0.46	0.47	0.39	0.39	0.35	0.22	0.31	0.33	3.70
63:	0.29	0.26	0.28	0.24	0.39	0.24	0.20	0.18	0.22	0.25	2.55
64:	0.18	0.14	0.18	0.08	0.04	0.07	0.10	0.07	0.06	0.05	0.96
65:	0.03	0.06	0.08	0.05	0.03	0.03	0.05	0.09	0.10	0.08	0.61
66:	0.10	0.07	0.07	0.02	0.05	0.03	0.03	0.02	0.04	0.05	0.47
67:	0.04	0.04	0.03	0.03	0.02	0.03	0.03	0.03	0.04	0.03	0.31

68:	0.02	0.03	0.02	0.02	0.01	0.02	0.02	0.02	0.03	0.03	0.24
69:	0.02	0.03	0.03	0.03	0.02	0.02	0.04	0.03	0.04	0.05	0.33
70:	0.03	0.02	0.04	0.03	0.01	0.02	0.03	0.02	0.03	0.02	0.25
71:	0.02	0.02	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.02	0.17
72:	0.02	0.02	0.03	0.03	0.04	0.02	0.02	0.02	0.03	0.03	0.25
73:	0.04	0.04	0.04	0.03	0.01	0.02	0.03	0.02	0.02	0.02	0.28
74:	0.01	0.01	0.02	0.01	0.01	0.02	0.04	0.02	0.02	0.01	0.17
75:	0.01	0.02	0.01	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.09
76:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.08
77:	0.01	0.02	0.02	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.08

Exceedance Chart

S010_BLN040003_30072020_105740: Exceedance Chart



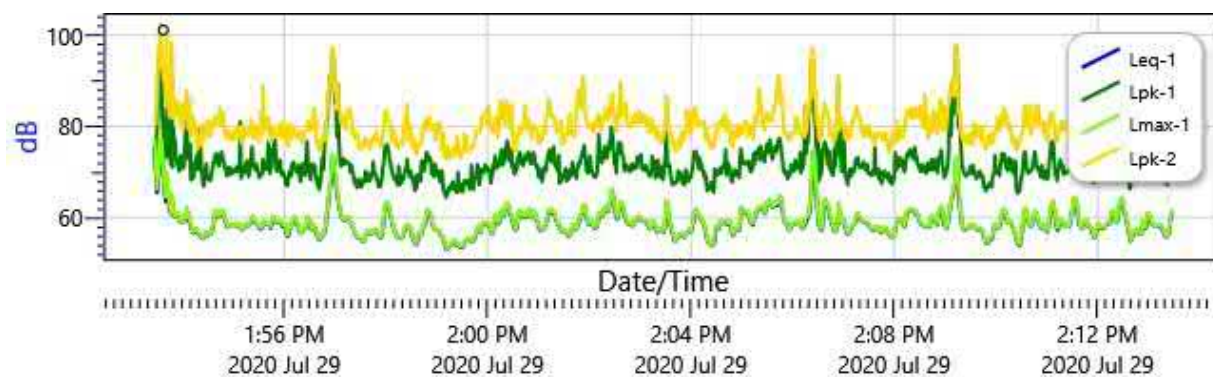
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		71.5	67.6	65.5	64.0	63.5	63.1	62.8	62.5	62.2
10%:	62.0	61.8	61.6	61.4	61.3	61.2	61.1	61.0	60.9	60.8
20%:	60.7	60.5	60.4	60.3	60.2	60.1	60.0	59.9	59.8	59.7
30%:	59.6	59.5	59.5	59.3	59.3	59.2	59.1	59.1	59.0	59.0
40%:	58.9	58.8	58.8	58.7	58.7	58.6	58.6	58.5	58.5	58.4

50%:	58.4	58.3	58.3	58.2	58.1	58.1	58.1	58.0	58.0	57.9
60%:	57.9	57.8	57.8	57.8	57.7	57.6	57.6	57.5	57.5	57.5
70%:	57.4	57.4	57.3	57.3	57.2	57.1	57.1	57.0	56.9	56.8
80%:	56.8	56.7	56.6	56.5	56.4	56.3	56.2	56.1	56.0	55.8
90%:	55.7	55.6	55.5	55.3	55.1	54.9	54.7	54.4	54.0	53.6
100%:	52.7									

Logged Data Chart

S010_BLN040003_30072020_105740: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M12

Information Panel

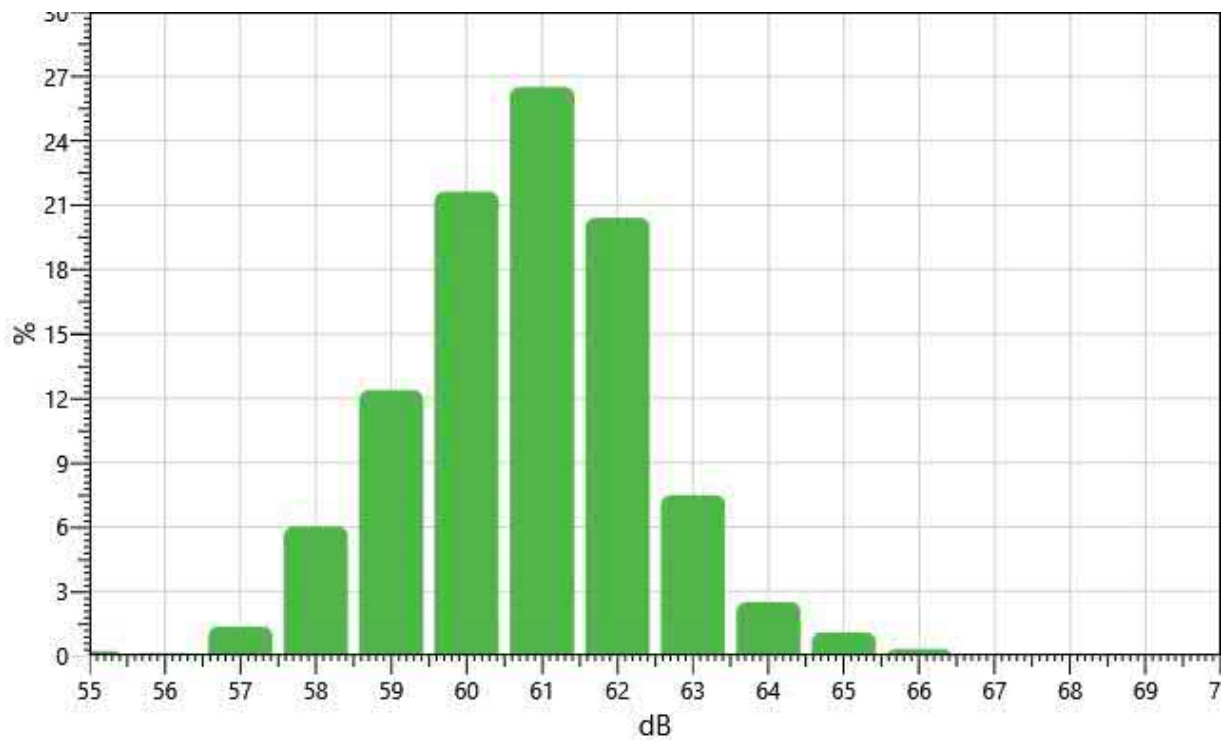
Name	S008_BLI050006_30072020_141352
Start Time	7/28/2020 5:04:35 PM
Stop Time	7/28/2020 5:31:09 PM
Device Name	BLI050006
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	61.4 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S008_BLI050006_30072020_141352: Statistics Chart

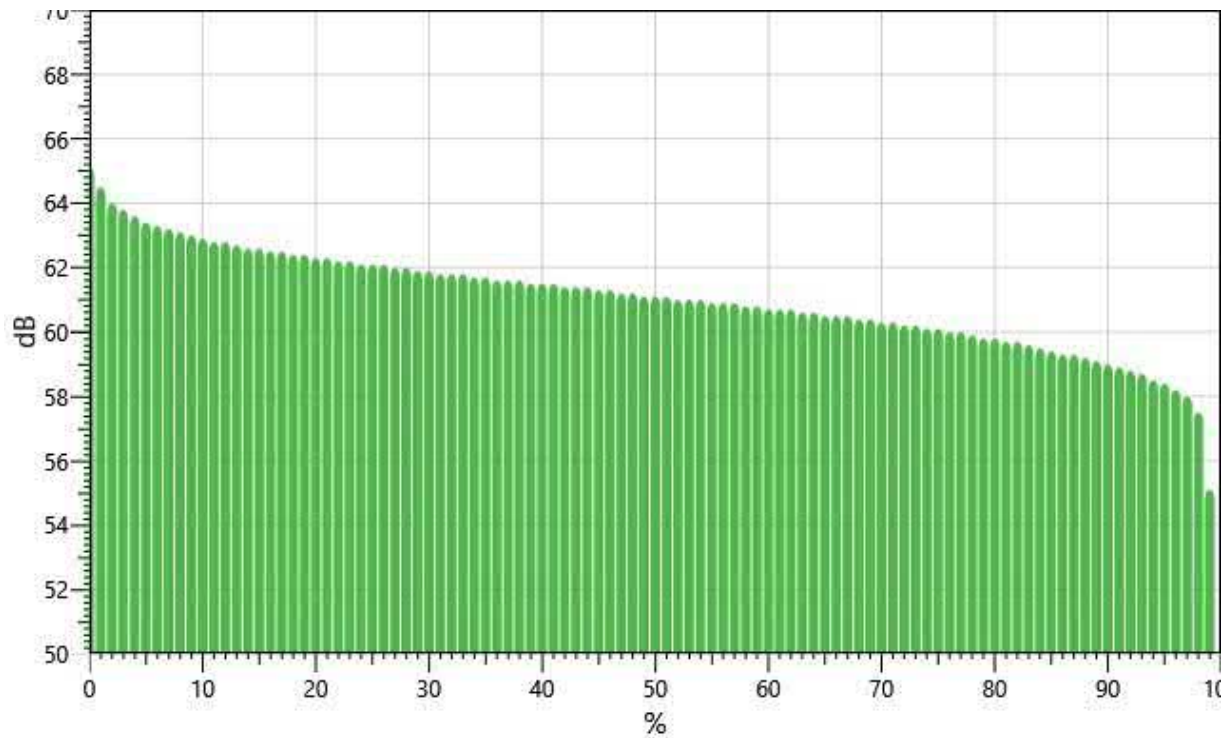


Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
55:	0.00	0.00	0.03	0.04	0.07	0.02	0.02	0.01	0.01	0.02	0.21
56:	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.12
57:	0.02	0.03	0.03	0.02	0.13	0.29	0.24	0.19	0.27	0.12	1.35
58:	0.21	0.29	0.56	0.39	0.55	0.76	0.69	0.84	0.87	0.86	6.02
59:	0.97	0.94	1.10	1.27	1.22	1.11	1.26	1.39	1.32	1.79	12.38
60:	1.84	2.02	1.81	1.88	2.07	2.27	2.29	2.46	2.59	2.39	21.63
61:	3.00	2.74	3.43	1.88	2.09	2.76	2.87	2.64	2.70	2.40	26.50
62:	2.31	2.35	2.32	2.10	2.06	2.32	1.52	1.93	1.79	1.71	20.41
63:	1.22	1.13	0.86	0.80	0.82	0.73	0.54	0.54	0.44	0.40	7.48
64:	0.54	0.37	0.40	0.18	0.13	0.17	0.14	0.12	0.21	0.23	2.50
65:	0.19	0.13	0.12	0.08	0.06	0.06	0.12	0.09	0.07	0.15	1.08
66:	0.05	0.04	0.09	0.11	0.02	0.00	0.00	0.00	0.00	0.00	0.32

Exceedance Chart

S008_BLI050006_30072020_141352: Exceedance Chart

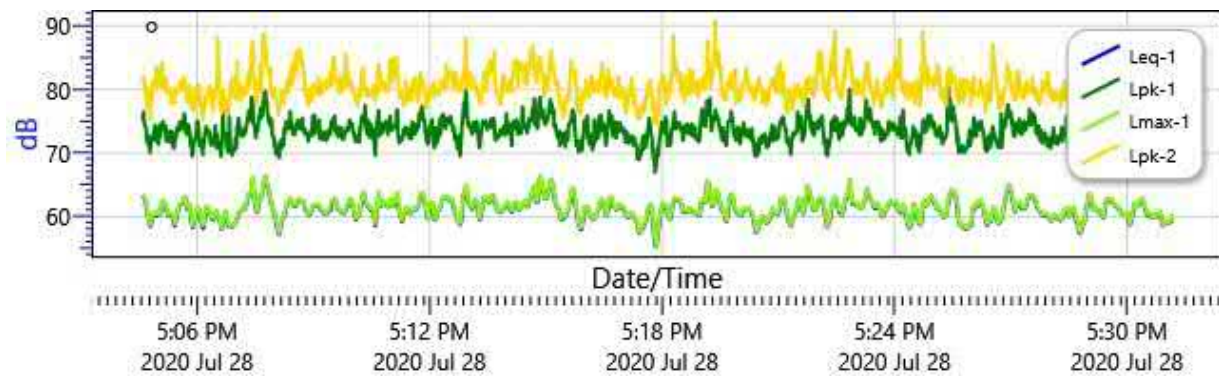


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		65.1	64.5	64.0	63.8	63.6	63.4	63.3	63.2	63.1
10%:	63.0	62.9	62.8	62.8	62.7	62.6	62.6	62.5	62.5	62.4
20%:	62.4	62.3	62.3	62.2	62.2	62.1	62.1	62.1	62.0	62.0
30%:	61.9	61.9	61.8	61.8	61.8	61.7	61.7	61.6	61.6	61.6
40%:	61.5	61.5	61.5	61.4	61.4	61.4	61.3	61.3	61.2	61.2
50%:	61.1	61.1	61.1	61.0	61.0	61.0	60.9	60.9	60.9	60.8
60%:	60.8	60.7	60.7	60.7	60.6	60.6	60.5	60.5	60.5	60.4
70%:	60.4	60.3	60.3	60.2	60.2	60.1	60.1	60.0	60.0	59.9
80%:	59.8	59.8	59.7	59.7	59.6	59.5	59.4	59.3	59.3	59.2
90%:	59.1	59.0	58.9	58.8	58.7	58.5	58.4	58.2	58.0	57.5
100%:	55.1									

Logged Data Chart

S008_BLI050006_30072020_141352: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M13 Information Panel

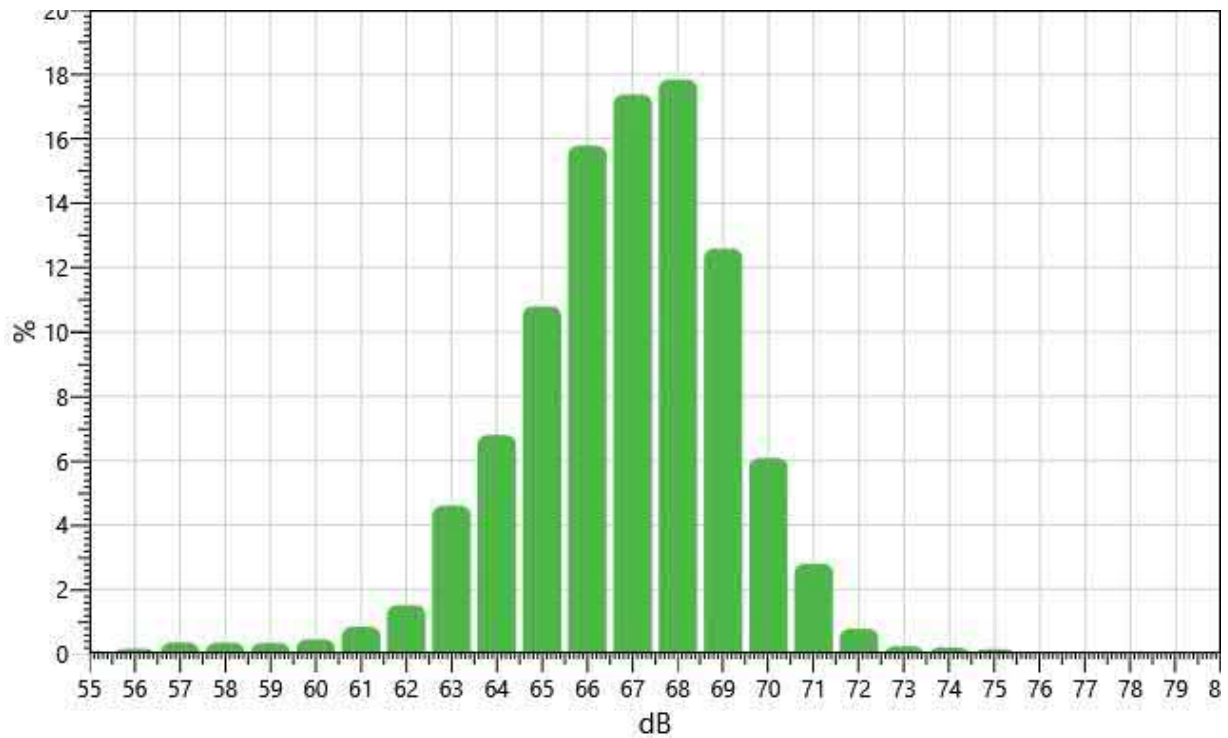
Name	S009_BLI050006_30072020_141410
Start Time	7/29/2020 12:37:46 PM
Stop Time	7/29/2020 12:58:58 PM
Device Name	BLI050006
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	67.8 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S009_BLI050006_30072020_141410: Statistics Chart



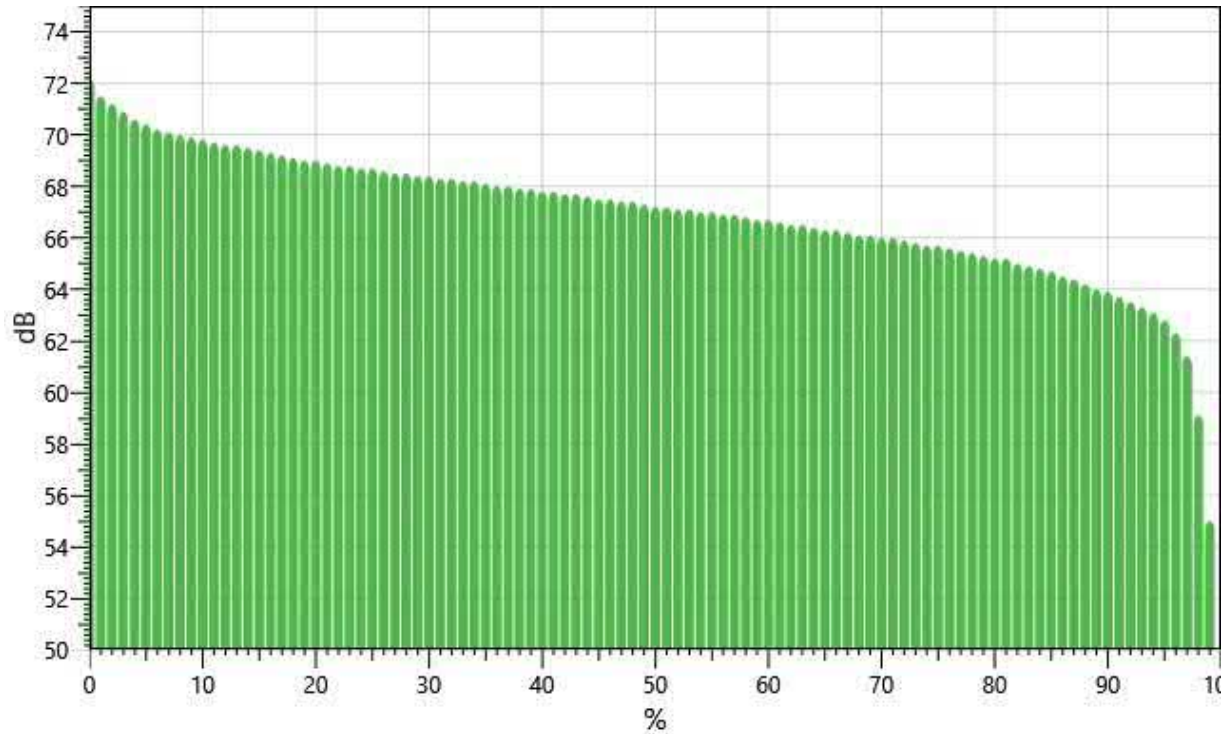
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
55:	0.00	0.00	0.03	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.08
56:	0.01	0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.15
57:	0.03	0.02	0.02	0.04	0.06	0.04	0.04	0.03	0.03	0.03	0.34
58:	0.03	0.03	0.03	0.02	0.03	0.06	0.05	0.03	0.04	0.03	0.34
59:	0.04	0.03	0.02	0.02	0.03	0.02	0.06	0.04	0.03	0.04	0.33
60:	0.04	0.03	0.05	0.09	0.04	0.04	0.04	0.04	0.04	0.03	0.44
61:	0.03	0.05	0.08	0.03	0.07	0.05	0.07	0.14	0.14	0.17	0.83
62:	0.10	0.10	0.08	0.09	0.15	0.17	0.16	0.17	0.21	0.30	1.51
63:	0.39	0.39	0.34	0.43	0.54	0.47	0.59	0.50	0.48	0.46	4.60
64:	0.74	0.75	0.55	0.42	0.49	0.70	0.75	0.86	0.79	0.75	6.79
65:	0.77	0.83	0.93	1.24	1.06	1.14	1.20	1.24	1.19	1.19	10.79
66:	1.32	1.67	1.83	1.85	1.44	1.54	1.45	1.54	1.58	1.58	15.78
67:	1.60	1.84	2.11	1.74	0.95	1.87	1.91	1.70	1.93	1.74	17.38
68:	1.91	1.80	1.68	2.07	1.83	1.61	1.80	1.61	1.70	1.82	17.84
69:	1.53	1.33	1.14	1.13	1.33	1.07	1.15	1.24	1.34	1.33	12.59
70:	1.06	0.84	0.71	0.65	0.26	0.74	0.59	0.41	0.43	0.37	6.08

71:	0.28	0.30	0.33	0.36	0.33	0.36	0.21	0.24	0.18	0.20	2.79
72:	0.11	0.11	0.11	0.16	0.12	0.05	0.02	0.03	0.02	0.03	0.77
73:	0.03	0.03	0.02	0.02	0.00	0.02	0.02	0.03	0.02	0.03	0.23
74:	0.04	0.03	0.03	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.20
75:	0.01	0.02	0.02	0.01	0.02	0.04	0.02	0.00	0.00	0.00	0.14

Exceedance Chart

S009_BLI050006_30072020_141410: Exceedance Chart



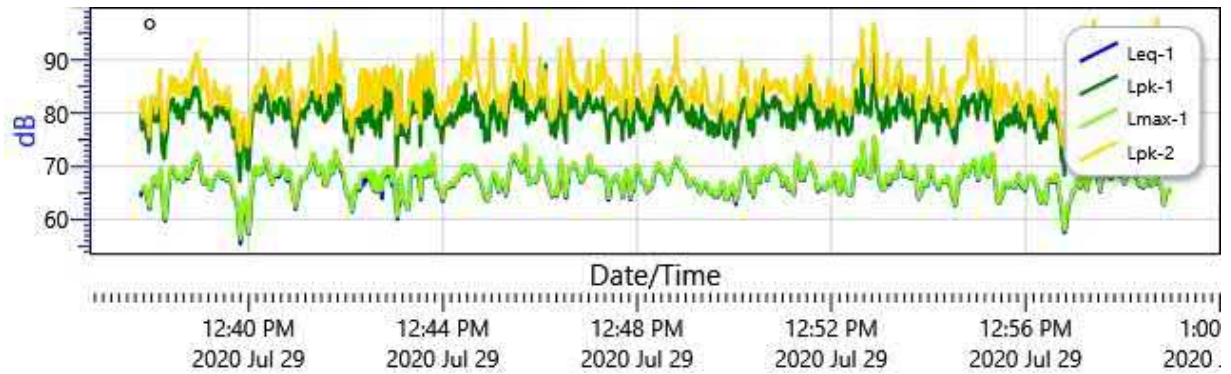
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		72.2	71.5	71.2	70.9	70.6	70.4	70.2	70.1	70.0
10%:	69.9	69.8	69.7	69.6	69.6	69.5	69.4	69.3	69.2	69.1
20%:	69.0	69.0	68.9	68.8	68.8	68.7	68.7	68.6	68.5	68.5
30%:	68.4	68.4	68.3	68.3	68.2	68.2	68.1	68.0	68.0	67.9
40%:	67.9	67.8	67.8	67.7	67.7	67.6	67.5	67.5	67.4	67.4
50%:	67.3	67.2	67.2	67.1	67.1	67.0	67.0	66.9	66.9	66.8
60%:	66.7	66.7	66.6	66.5	66.5	66.4	66.3	66.3	66.2	66.1
70%:	66.1	66.0	66.0	65.9	65.8	65.7	65.7	65.6	65.5	65.4
80%:	65.3	65.2	65.2	65.0	64.9	64.8	64.7	64.5	64.4	64.2
90%:	64.0	63.9	63.7	63.5	63.3	63.1	62.8	62.3	61.4	59.1

100%: 55.0

Logged Data Chart

S009_BLI050006_30072020_141410: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M14

Information Panel

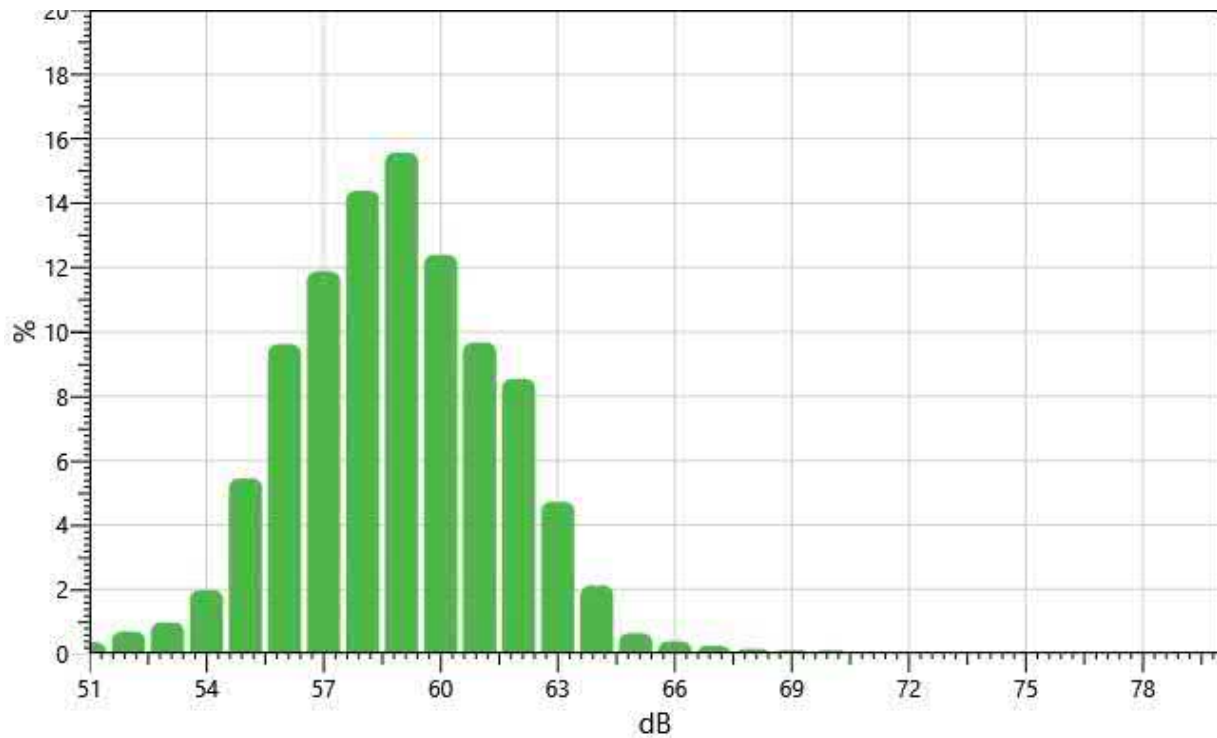
Name	S006_BLN040003_30072020_105638
Start Time	7/29/2020 12:30:05 PM
Stop Time	7/29/2020 12:50:18 PM
Device Name	BLN040003
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	60.1 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S006_BLN040003_30072020_105638: Statistics Chart



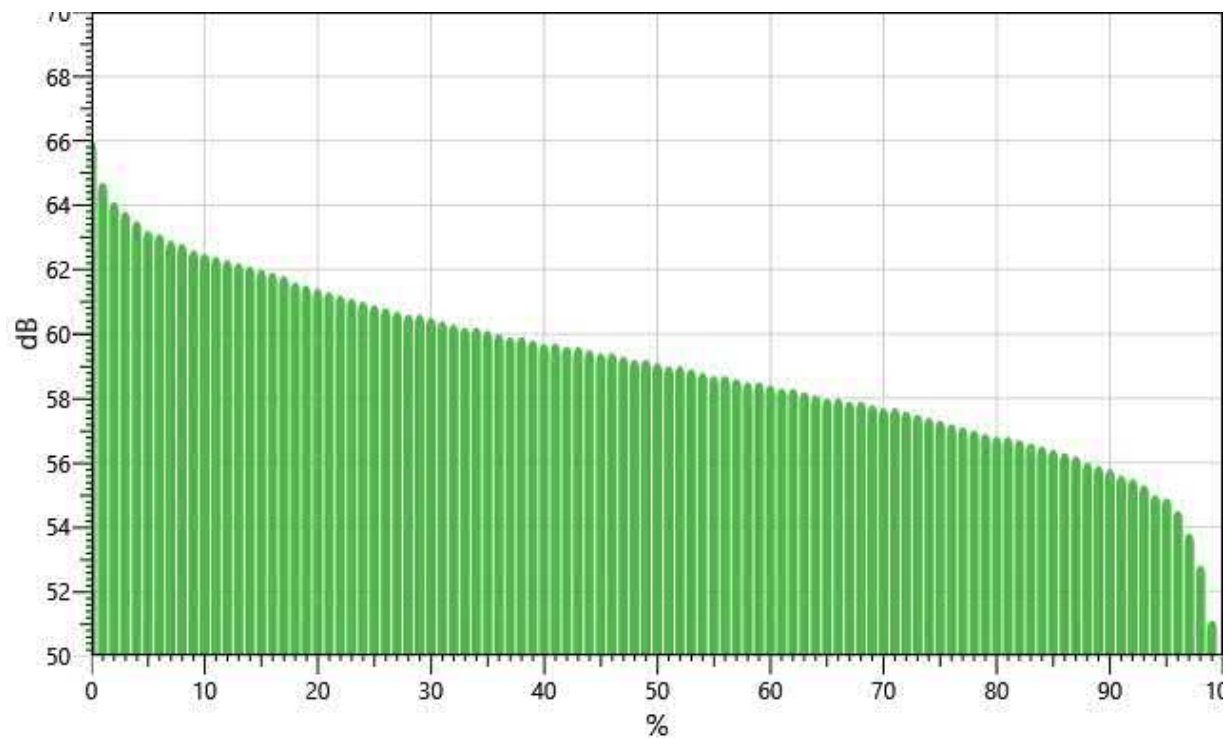
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
51:	0.00	0.00	0.04	0.05	0.09	0.06	0.05	0.02	0.02	0.03	0.35
52:	0.03	0.02	0.02	0.01	0.05	0.07	0.08	0.15	0.14	0.12	0.69
53:	0.11	0.11	0.07	0.07	0.07	0.09	0.11	0.08	0.08	0.16	0.97
54:	0.11	0.15	0.11	0.11	0.14	0.15	0.28	0.26	0.29	0.37	1.97
55:	0.45	0.59	0.52	0.16	0.46	0.56	0.59	0.69	0.74	0.68	5.44
56:	0.77	0.86	0.83	0.83	0.85	1.11	1.06	1.09	1.07	1.14	9.62
57:	1.01	1.05	1.06	1.25	1.02	1.02	1.00	1.18	1.53	1.76	11.88
58:	1.54	1.60	1.75	0.80	1.44	1.50	1.66	1.55	1.24	1.32	14.39
59:	1.44	1.30	1.43	1.54	1.44	1.67	1.84	1.92	1.52	1.49	15.57
60:	1.51	1.42	1.12	1.17	1.18	1.28	1.37	1.11	1.02	1.21	12.40
61:	1.10	1.12	1.03	0.75	0.78	1.05	0.95	0.96	0.87	1.06	9.67
62:	0.65	1.08	1.07	1.01	0.97	0.88	0.79	0.75	0.75	0.59	8.54
63:	0.66	0.66	0.68	0.56	0.58	0.31	0.29	0.29	0.38	0.31	4.72
64:	0.32	0.31	0.25	0.16	0.10	0.16	0.21	0.23	0.26	0.13	2.12
65:	0.07	0.06	0.05	0.11	0.08	0.04	0.05	0.04	0.07	0.05	0.64
66:	0.03	0.03	0.03	0.03	0.04	0.04	0.08	0.03	0.02	0.04	0.39

67:	0.05	0.03	0.04	0.03	0.01	0.02	0.02	0.01	0.02	0.01	0.24
68:	0.01	0.01	0.01	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.15
69:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.11
70:	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.10
71:	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04

Exceedance Chart

S006_BLN040003_30072020_105638: Exceedance Chart



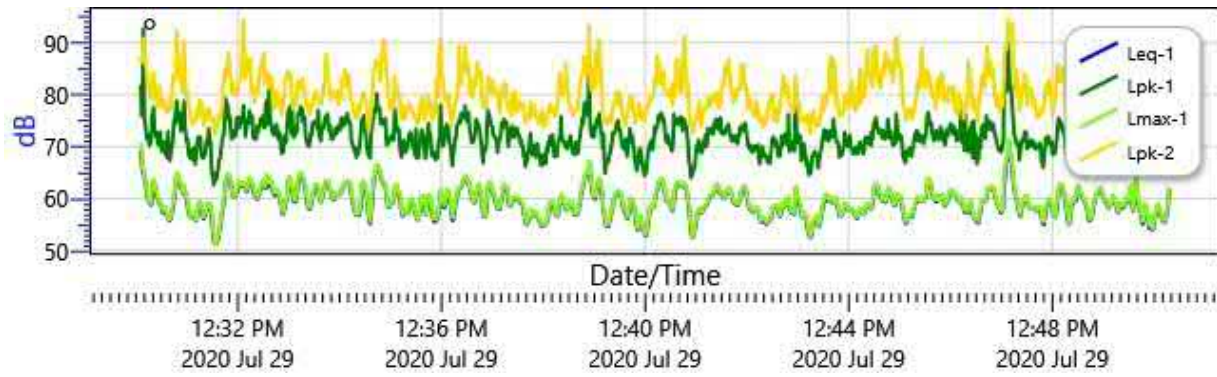
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		66.0	64.7	64.1	63.8	63.5	63.2	63.1	62.9	62.8
10%:	62.6	62.5	62.4	62.3	62.2	62.1	62.0	61.9	61.8	61.6
20%:	61.5	61.4	61.3	61.2	61.1	61.0	60.9	60.8	60.7	60.6
30%:	60.6	60.5	60.4	60.3	60.2	60.2	60.1	60.0	59.9	59.9
40%:	59.8	59.7	59.7	59.6	59.6	59.5	59.4	59.4	59.3	59.2
50%:	59.2	59.1	59.0	59.0	58.9	58.8	58.7	58.7	58.6	58.5
60%:	58.5	58.4	58.3	58.3	58.2	58.1	58.0	58.0	57.9	57.9
70%:	57.8	57.7	57.7	57.6	57.5	57.4	57.3	57.2	57.1	57.0
80%:	56.9	56.8	56.8	56.7	56.6	56.5	56.4	56.3	56.2	56.0
90%:	55.9	55.8	55.6	55.5	55.3	55.0	54.9	54.5	53.8	52.8

100%: 51.1

Logged Data Chart

S006_BLN040003_30072020_105638: Logged Data Chart



Session Report

12/7/2020

Monitoring Site: M15

Information Panel

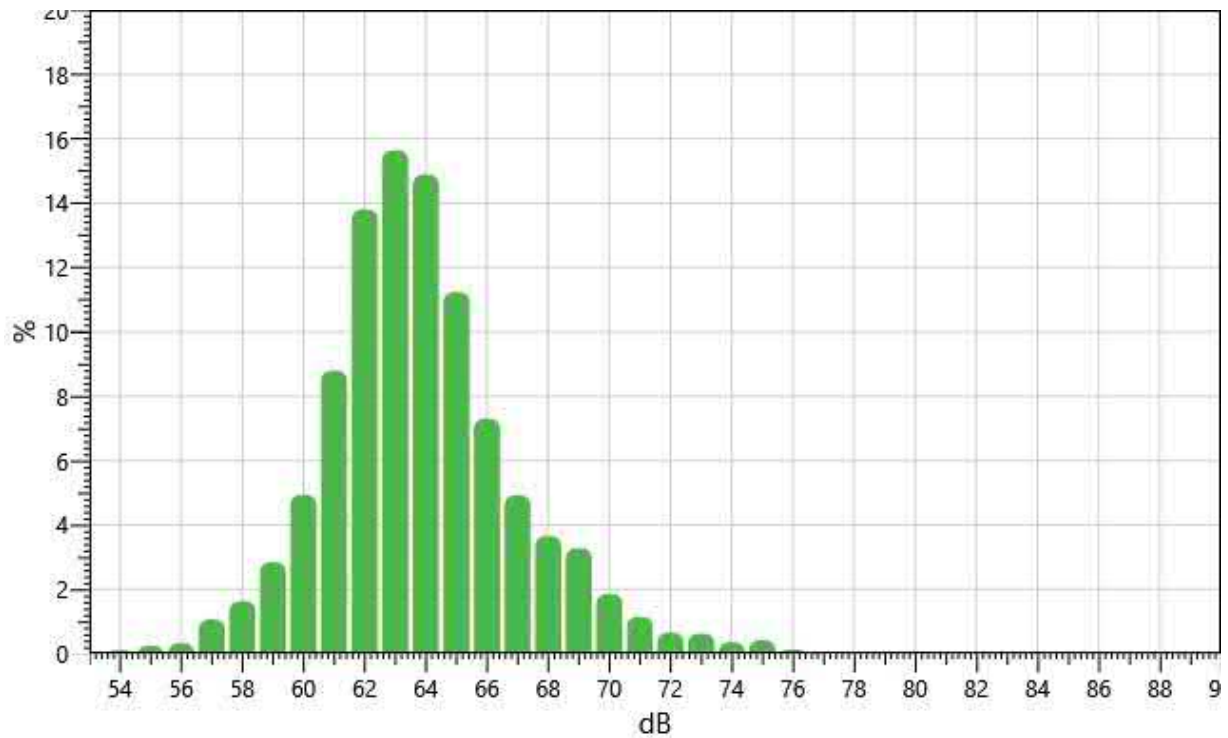
Name	S008_BLN040003_30072020_105708
Start Time	7/29/2020 1:02:09 PM
Stop Time	7/29/2020 1:22:27 PM
Device Name	BLN040003
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	65.8 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S008_BLN040003_30072020_105708: Statistics Chart



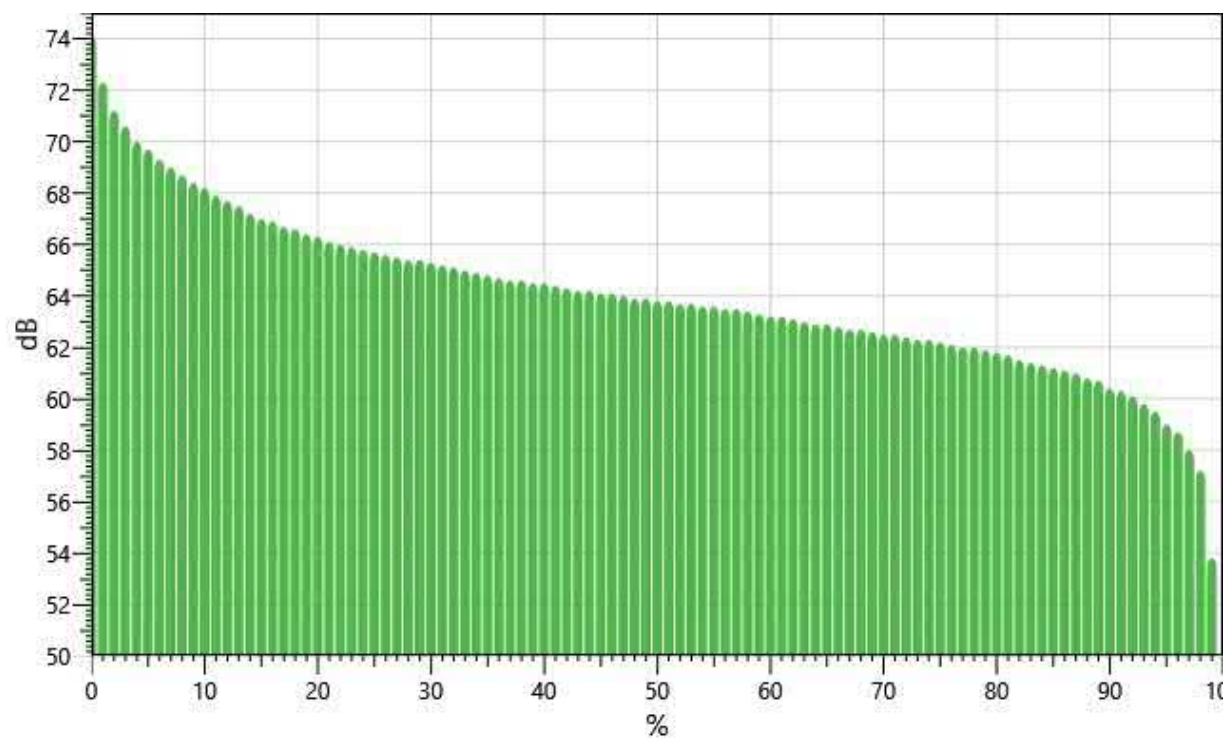
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
53:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
54:	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.11
55:	0.01	0.01	0.01	0.00	0.01	0.01	0.02	0.07	0.09	0.03	0.25
56:	0.03	0.04	0.05	0.02	0.03	0.02	0.03	0.02	0.03	0.05	0.32
57:	0.08	0.08	0.12	0.13	0.11	0.08	0.09	0.16	0.10	0.12	1.06
58:	0.14	0.21	0.20	0.07	0.11	0.13	0.19	0.16	0.21	0.21	1.63
59:	0.38	0.28	0.21	0.20	0.26	0.29	0.24	0.36	0.27	0.36	2.84
60:	0.43	0.32	0.42	0.48	0.51	0.63	0.47	0.50	0.58	0.60	4.93
61:	0.73	0.71	1.14	0.68	0.71	0.99	0.94	0.84	0.99	1.05	8.79
62:	1.02	1.13	1.26	1.55	1.37	1.31	1.49	1.48	1.63	1.57	13.80
63:	1.28	1.44	1.40	1.27	1.43	1.26	1.58	1.97	1.97	2.03	15.64
64:	1.77	1.82	1.90	1.13	1.10	1.80	1.55	1.59	1.15	1.08	14.88
65:	1.23	1.10	1.13	1.01	1.19	1.20	1.02	1.13	1.14	1.08	11.23
66:	1.06	0.85	0.75	0.75	0.59	0.54	0.60	0.65	0.77	0.74	7.30
67:	0.73	0.67	0.58	0.45	0.23	0.49	0.45	0.46	0.48	0.37	4.92
68:	0.38	0.41	0.48	0.39	0.39	0.35	0.32	0.30	0.29	0.33	3.65

69:	0.30	0.33	0.36	0.34	0.30	0.31	0.29	0.35	0.31	0.39	3.28
70:	0.29	0.22	0.20	0.15	0.07	0.20	0.16	0.24	0.18	0.13	1.85
71:	0.13	0.15	0.11	0.16	0.15	0.12	0.10	0.10	0.06	0.07	1.14
72:	0.07	0.08	0.09	0.06	0.08	0.07	0.05	0.06	0.05	0.05	0.65
73:	0.07	0.07	0.07	0.09	0.03	0.09	0.08	0.05	0.04	0.04	0.62
74:	0.04	0.04	0.03	0.03	0.03	0.04	0.04	0.04	0.03	0.03	0.35
75:	0.04	0.05	0.06	0.07	0.06	0.02	0.02	0.03	0.05	0.03	0.42
76:	0.04	0.03	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.13
77:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
78:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.04
79:	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.05
80:	0.01	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.07

Exceedance Chart

S008_BLN040003_30072020_105708: Exceedance Chart



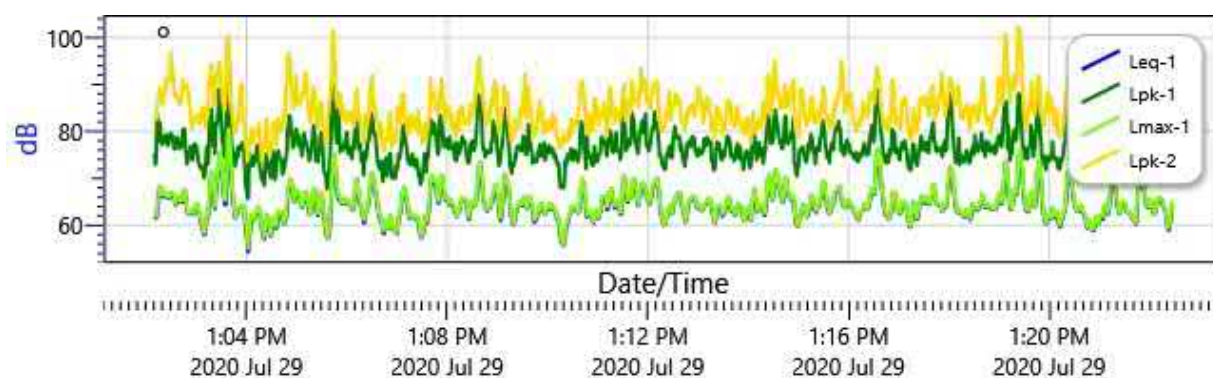
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		74.1	72.3	71.2	70.6	70.0	69.7	69.3	69.0	68.7
10%:	68.4	68.2	67.9	67.7	67.5	67.2	67.0	66.9	66.7	66.6
20%:	66.4	66.3	66.1	66.0	65.9	65.8	65.7	65.6	65.5	65.4

30%:	65.4	65.3	65.2	65.1	65.0	64.9	64.8	64.7	64.6	64.6
40%:	64.5	64.5	64.4	64.3	64.2	64.2	64.1	64.1	64.0	63.9
50%:	63.9	63.8	63.8	63.7	63.7	63.6	63.6	63.5	63.5	63.4
60%:	63.3	63.2	63.2	63.1	63.0	62.9	62.9	62.8	62.7	62.7
70%:	62.6	62.5	62.5	62.4	62.3	62.3	62.2	62.1	62.0	62.0
80%:	61.9	61.8	61.7	61.5	61.4	61.3	61.2	61.1	61.0	60.8
90%:	60.7	60.4	60.3	60.1	59.8	59.5	59.0	58.7	58.0	57.2
100%:	53.8									

Logged Data Chart

S008_BLN040003_30072020_105708: Logged Data Chart



Session Report

12/8/2020

Monitoring Site: M16

Information Panel

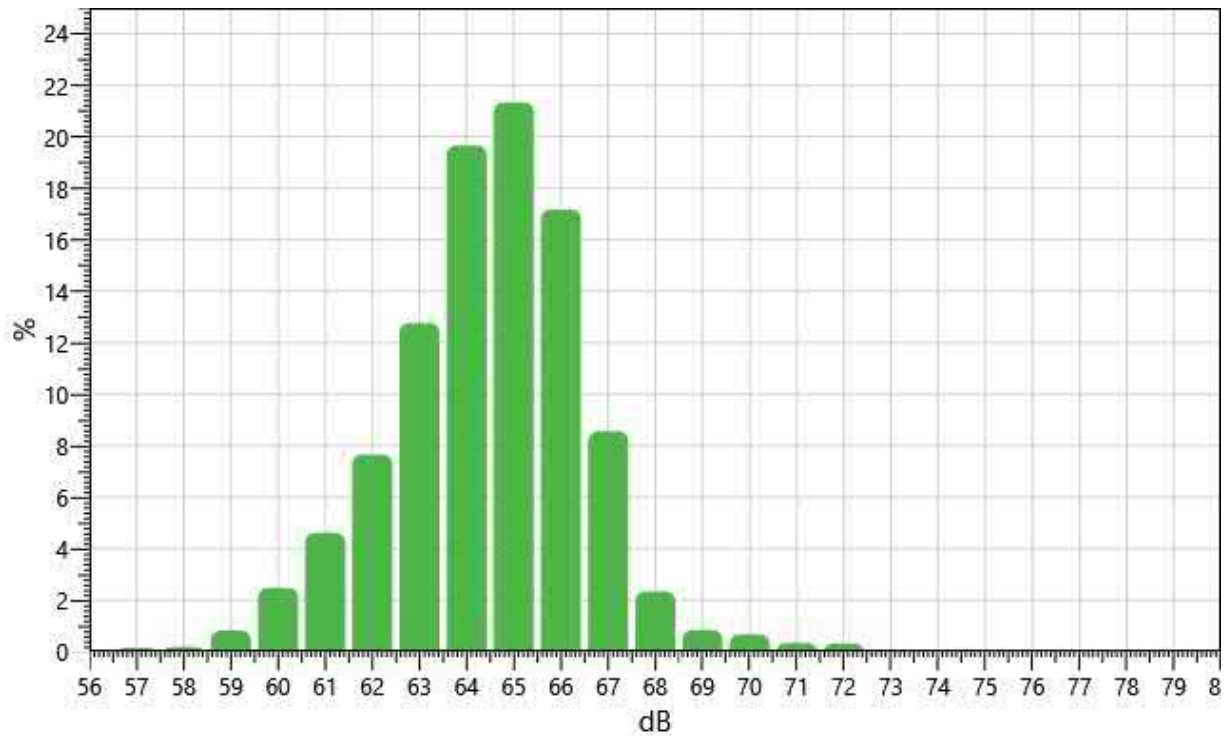
Name	S011_BLI050006_31072020_141352
Start Time	7/29/2020 1:44:39 PM
Stop Time	7/29/2020 3:02:06 PM
Device Name	BLI050006
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	65.3 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	1/3
Exchange Rate	2	3 dB	Weighting	2	C
Response	2	SLOW			

Statistics Chart

S011_BLI050006_31072020_141352: Statistics Chart



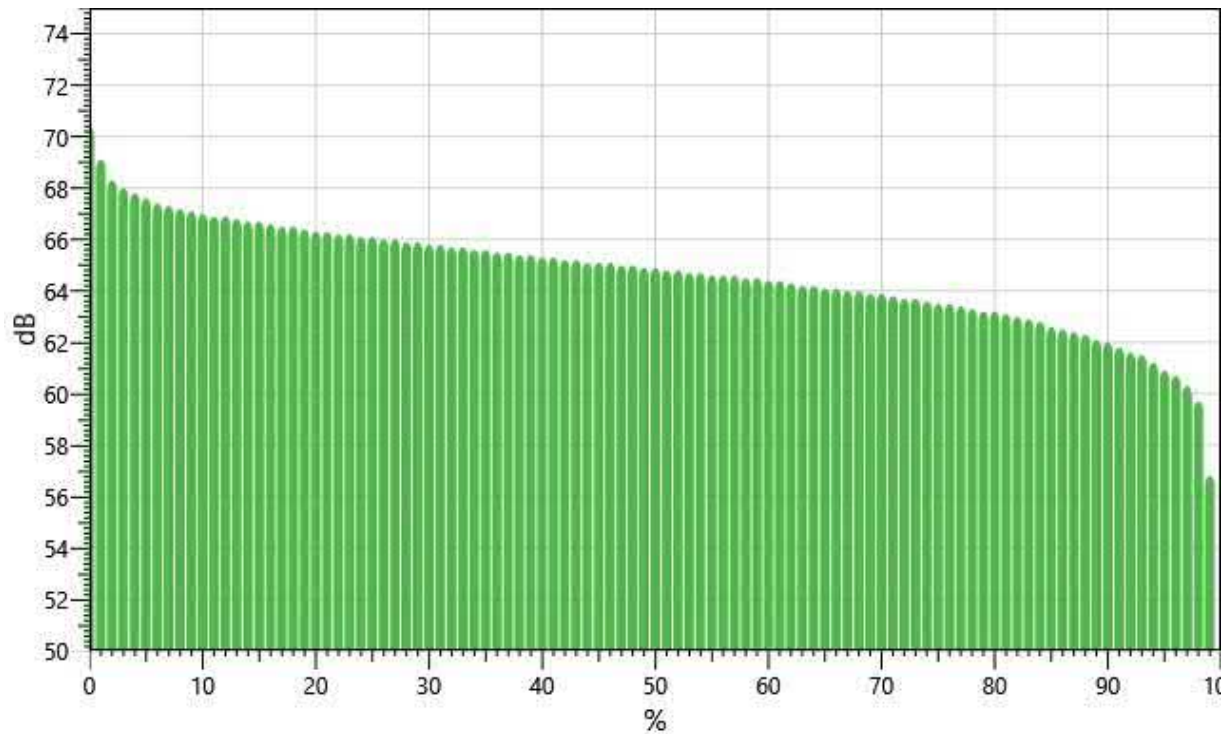
Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
56:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
57:	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.15
58:	0.01	0.01	0.01	0.00	0.01	0.03	0.02	0.03	0.05	0.02	0.19
59:	0.02	0.02	0.04	0.07	0.05	0.09	0.11	0.11	0.15	0.16	0.82
60:	0.17	0.15	0.21	0.22	0.20	0.25	0.21	0.32	0.35	0.40	2.48
61:	0.38	0.50	0.46	0.26	0.29	0.43	0.52	0.52	0.65	0.60	4.62
62:	0.64	0.53	0.69	0.77	0.75	0.77	0.83	0.85	0.88	0.94	7.66
63:	0.88	1.03	1.09	1.16	1.22	1.32	1.40	1.52	1.53	1.61	12.77
64:	1.79	1.98	2.21	1.55	1.26	2.06	2.41	2.14	2.10	2.15	19.66
65:	2.28	2.27	2.21	2.15	2.23	2.08	2.06	1.93	2.16	1.98	21.33
66:	2.01	1.83	1.81	1.93	1.85	1.58	1.60	1.69	1.48	1.39	17.18
67:	1.29	1.29	1.26	0.88	0.57	0.97	0.76	0.53	0.51	0.51	8.56
68:	0.42	0.41	0.37	0.30	0.23	0.17	0.12	0.10	0.10	0.11	2.34
69:	0.12	0.10	0.10	0.08	0.07	0.09	0.07	0.07	0.08	0.06	0.84
70:	0.07	0.07	0.08	0.09	0.04	0.07	0.07	0.07	0.05	0.07	0.67
71:	0.05	0.05	0.04	0.04	0.03	0.03	0.03	0.02	0.02	0.03	0.34

72:	0.02	0.03	0.04	0.04	0.03	0.05	0.05	0.02	0.02	0.02	0.31
73:	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.07
74:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Exceedance Chart

S011_BLI050006_31072020_141352: Exceedance Chart

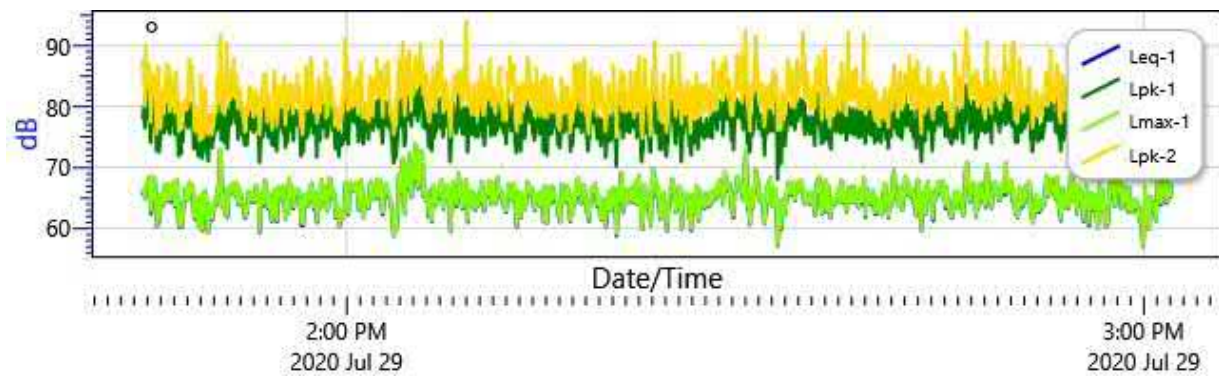


Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		70.4	69.1	68.3	68.0	67.8	67.6	67.4	67.3	67.2
10%:	67.1	67.0	66.9	66.9	66.8	66.7	66.7	66.6	66.5	66.5
20%:	66.4	66.3	66.3	66.2	66.2	66.1	66.1	66.0	66.0	65.9
30%:	65.9	65.8	65.8	65.7	65.7	65.6	65.6	65.5	65.5	65.4
40%:	65.4	65.3	65.3	65.2	65.2	65.1	65.1	65.1	65.0	65.0
50%:	64.9	64.9	64.8	64.8	64.7	64.7	64.6	64.6	64.6	64.5
60%:	64.5	64.4	64.4	64.3	64.2	64.2	64.1	64.1	64.0	64.0
70%:	63.9	63.9	63.8	63.7	63.7	63.6	63.5	63.5	63.4	63.3
80%:	63.2	63.2	63.1	63.0	62.9	62.8	62.6	62.5	62.4	62.3
90%:	62.1	62.0	61.8	61.6	61.5	61.2	60.9	60.7	60.3	59.7
100%:	56.8									

Logged Data Chart

S011_BLI050006_31072020_141352: Logged Data Chart



Appendix F

Noise Model Traffic Inputs

Table 6. US 422 Pottstown Bypass AM and PM Peak Hour Traffic Forecasts

Highway Facility	Location	Current		2025 No-Build		Current/2025		2045 No-Build		2025/2045		2025 Build		Build/No-Build		2045 Build		Build/No-Build	
		Peak Hour Vol.	Peak Hour Vol.	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
US 422 Main Line																			
US 422 WB	Evergreen Rd. to Armand Hammer Blvd.	1,850	2,750	1,940	2,870	90	120	2,070	3,060	130	190	2,230	3,270	290	400	2,550	3,690	480	630
US 422 EB	Armand Hammer Blvd. to Evergreen Rd.	2,200	2,040	2,310	2,140	110	100	2,420	2,260	110	120	2,580	2,400	270	260	2,940	2,740	520	480
US 422 Total	Evergreen Rd. to Armand Hammer Blvd.	4,050	4,790	4,250	5,010	200	220	4,490	5,320	240	310	4,810	5,670	560	660	5,490	6,430	1,000	1,110
US 422 WB	Armand Hammer Blvd. to PA 724	1,800	2,390	1,890	2,510	90	120	2,000	2,650	110	140	2,180	2,890	290	380	2,490	3,280	490	630
US 422 EB	PA 724 to Armand Hammer Blvd.	2,100	2,020	2,190	2,110	90	90	2,270	2,200	80	90	2,490	2,400	300	290	2,830	2,730	560	530
US 422 Total	Armand Hammer Blvd. to PA 724	3,900	4,410	4,080	4,620	180	210	4,270	4,850	190	230	4,670	5,290	590	670	5,320	6,010	1,050	1,160
US 422 WB	PA 724 to Keim St.	1,960	2,550	2,050	2,670	90	120	2,150	2,800	100	130	2,300	3,000	250	330	2,590	3,370	440	570
US 422 EB	Keim St. to PA 724	2,380	2,200	2,490	2,300	110	100	2,580	2,400	90	100	2,620	2,450	130	150	2,970	2,770	390	370
US 422 Total	PA 724 to Keim St.	4,340	4,750	4,540	4,970	200	220	4,730	5,200	190	230	4,920	5,450	380	480	5,560	6,140	830	940
US 422 WB	Keim St. to Hanover St.	1,990	2,590	2,090	2,720	100	130	2,200	2,860	110	140	2,380	3,110	290	390	2,690	3,500	490	640
US 422 EB	Hanover St. to Keim St.	2,480	2,280	2,610	2,400	130	120	2,760	2,540	150	140	2,900	2,670	290	270	3,280	3,020	520	480
US 422 Total	Keim St. to Hanover St.	4,470	4,870	4,700	5,120	230	250	4,960	5,400	260	280	5,280	5,780	580	660	5,970	6,520	1,010	1,120
US 422 WB	Hanover St. to PA 100	1,680	2,150	1,750	2,240	70	90	1,850	2,370	100	130	2,010	2,580	260	340	2,290	2,930	440	560
US 422 EB	PA 100 to Hanover St.	2,190	2,010	2,310	2,120	120	110	2,450	2,250	140	130	2,570	2,360	260	240	2,930	2,690	480	440
US 422 Total	Hanover St. to PA 100	3,870	4,160	4,060	4,360	190	200	4,300	4,620	240	260	4,580	4,940	520	580	5,220	5,620	920	1,000
US 422 WB	PA 100 to Grosstown Rd.	1,300	1,280	1,370	1,330	70	50	1,460	1,430	90	100	1,710	1,700	340	370	1,990	2,020	530	590
US 422 EB	Grosstown Rd. to PA 100	1,120	1,460	1,160	1,530	40	70	1,250	1,640	90	110	1,460	1,870	300	340	1,760	2,170	510	530
US 422 Total	PA 100 to Grosstown Rd.	2,420	2,740	2,530	2,860	110	120	2,710	3,070	180	210	3,170	3,570	640	710	3,750	4,190	1,040	1,120
US 422 WB	Grosstown Rd. to County Line	1,240	1,130	1,310	1,170	70	40	1,390	1,260	80	90	1,610	1,440	300	270	1,870	1,720	480	460
US 422 EB	County Line to Grosstown Rd.	990	1,350	1,040	1,430	50	80	1,120	1,530	80	100	1,250	1,700	210	270	1,500	1,950	380	420
US 422 Total	Grosstown Rd. to County Line	2,230	2,480	2,350	2,600	120	120	2,510	2,790	160	190	2,860	3,140	510	540	3,370	3,670	860	880

Table 6. US 422 Pottstown Bypass AM and PM Peak Hour Traffic Forecasts

Highway Facility	Location	Current		2025 No-Build		Current/2025		2045 No-Build		2025/2045		2025 Build		Build/No-Build		2045 Build		Build/No-Build	
		Peak Hour Vol.		Peak Hour Vol.		Difference		Peak Hour Vol.		Difference		Peak Hour Vol.		Difference		Peak Hour Vol.		Difference	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
North-South Highway Facilities																			
Armand Hammer Blvd. NB	Yost Rd. to High St.	470	810	480	830	10	20	490	850	10	20	480	830	0	0	510	880	20	30
Armand Hammer Blvd. SB	High St. to Yost Rd.	860	540	870	550	10	10	890	560	20	10	880	550	10	0	940	590	50	30
Armand Hammer Blvd.	Yost Rd. to High St.	1,330	1,350	1,350	1,380	20	30	1,380	1,410	30	30	1,360	1,380	10	0	1,450	1,470	70	60
Moser Rd. NB	Yost Rd. to High St.	130	250	140	270	10	20	150	290	10	20	140	280	0	10	160	300	10	10
Moser Rd. SB	High St. to Yost Rd.	210	280	230	310	20	30	240	320	10	10	230	310	0	0	260	350	20	30
Moser Rd.	Yost Rd. to High St.	340	530	370	580	30	50	390	610	20	30	370	590	0	10	420	650	30	40
Keim St. NB	PA 724 to US 422	100	80	120	100	20	20	180	140	60	40	400	320	280	220	530	420	350	280
Keim St. SB	US 422 to PA 724	30	40	40	50	10	10	50	60	10	10	120	160	80	110	150	200	100	140
Keim St.	PA 724 to US 422	130	120	160	150	30	30	230	200	70	50	520	480	360	330	680	620	450	420
Keim St. NB	US 422 to Industrial Highway	0	0	0	0	0	0	0	0	0	0	270	360	270	360	310	410	310	410
Keim St. SB	Industrial Hwy to US 422	0	0	0	0	0	0	0	0	0	0	370	420	370	420	420	480	420	480
Keim St.	US 422 to Industrial Highway	0	0	0	0	0	0	0	0	0	0	640	780	640	780	730	890	730	890
Hanover St. NB	Cedarville Rd. to PA 724	330	360	340	370	10	10	370	390	30	20	330	380	-10	10	360	410	-10	20
Hanover St. SB	PA 724 to Cedarvill Rd.	360	360	380	380	20	20	400	420	20	40	380	420	0	40	440	480	40	60
Hanover St.	Cedarville Rd. to PA 724	690	720	720	750	30	30	770	810	50	60	710	800	-10	50	800	890	30	80
Hanover St. NB	PA 724 to US 422	350	460	360	470	10	10	370	490	10	20	370	480	10	10	390	510	20	20
Hanover St. SB	US 422 to PA 724	370	410	370	420	0	10	390	430	20	10	370	410	0	-10	410	470	20	40
Hanover St.	PA 724 to US 422	720	870	730	890	10	20	760	920	30	30	740	890	10	0	800	980	40	60
Hanover St. NB	US 422 to River Rd.	440	690	470	730	30	40	470	750	0	20	490	760	20	30	510	790	40	40
Hanover St. SB	River Rd. to US 422	440	470	440	480	0	10	450	490	10	10	450	470	10	-10	480	510	30	20
Hanover St.	US 422 to River Rd.	880	1,160	910	1,210	30	50	920	1,240	10	30	940	1,230	30	20	990	1,300	70	60
Hanover St. NB	River Rd. to Industrial Highway	400	620	410	640	10	20	430	660	20	20	420	650	10	10	450	700	20	40
Hanover St. SB	Industrial Highway to River Rd.	400	370	410	380	10	10	430	390	20	10	420	390	10	10	450	410	20	20
Hanover St.	River Rd. to Industrial Highway	800	990	820	1,020	20	30	860	1,050	40	30	840	1,040	20	20	900	1,110	40	60
Hanover St. NB	Industrial Highway to High St.	250	300	270	320	20	20	280	340	10	20	270	320	0	0	300	360	20	20
Hanover St. SB	High St. to Industrial Highway	410	290	440	310	30	20	480	340	40	30	450	320	10	10	500	360	20	20
Hanover St.	Industrial Highway to High St.	660	590	710	630	50	40	760	680	50	50	720	640	10	10	800	720	40	40
PA 100 NB	Cedarville Rd. to PA 724	680	1,060	720	1,130	40	70	770	1,200	50	70	740	1,150	20	20	800	1,250	30	50
PA 100 SB	PA 724 to Cedarvill Rd.	950	830	990	870	40	40	1,080	950	90	80	1,060	920	70	50	1,160	1,010	80	60
PA 100 Total	Cedarville Rd. to PA 724	1,630	1,890	1,710	2,000	80	110	1,850	2,150	140	150	1,800	2,070	90	70	1,960	2,260	110	110
PA 100 NB	PA 724 to US 422	1,220	1,420	1,330	1,550	110	130	1,410	1,650	80	100	1,310	1,520	-20	-30	1,430	1,660	20	10
PA 100 SB	US 422 to PA 724	1,070	1,110	1,180	1,220	110	110	1,240	1,290	60	70	1,170	1,210	-10	-10	1,250	1,300	10	10
PA 100 Total	PA 724 to US 422	2,290	2,530	2,510	2,770	220	240	2,650	2,940	140	170	2,480	2,730	-30	-40	2,680	2,960	30	20
PA 100 NB	US 422 to High St.	1,150	1,800	1,250	1,950	100	150	1,280	2,010	30	60	1,280	2,010	30	60	1,350	2,120	70	110
PA 100 SB	High St. to US 422	1,690	1,170	1,850	1,280	160	110	1,910	1,330	60	50	1,910	1,330	60	50	2,010	1,390	100	60
PA 100 Total	US 422 to High St.	2,840	2,970	3,100	3,230	260	260	3,190	3,340	90	110	3,190	3,340	90	110	3,360	3,510	170	170
PA 100 NB	King St. to Shoemaker St.	840	1,350	940	1,510	100	160	970	1,560	30	50	960	1,540	20	30	1,000	1,610	30	50
PA 100 SB	King St. to Shoemaker St.	980	910	1,090	1,020	110	110	1,150	1,070	60	50	1,110	1,030	20	10	1,180	1,090	30	20
PA 100 Total	King St. to Shoemaker St.	1,820	2,260	2,030	2,530	210	270	2,120	2,630	90	100	2,070	2,570	40	40	2,180	2,700	60	70
Grosstown Rd NB	US 422 to High St.	110	210	140	250	30	40	160	280	20	30	220	400	80	150	270	490	110	210
Grosstown Rd SB	Hight St. to US 422	180	170	200	190	20	20	220	220	20	30	330	310	130	120	390	370	170	150
Grosstown Rd.	High St. to US 422	290	380	340	440	50	60	380	500	40	60	550	710	210	270	660	860	280	360

Table 6. US 422 Pottstown Bypass AM and PM Peak Hour Traffic Forecasts

Highway Facility	Location	Current		2025 No-Build		Current/2025		2045 No-Build		2025/2045		2025 Build		Build/No-Build		2045 Build		Build/No-Build	
		Peak Hour Vol.	Peak Hour Vol.	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Parallel Roads																			
PA 724 EB	PA 724 Ramps to Old Schuylkill Rd.	920	670	960	700	40	30	1,060	780	100	80	910	640	-50	-60	990	700	-70	-80
PA 724 WB	Old Schuylkill Rd. to PA 724 Ramps	490	840	530	900	40	60	570	960	40	60	480	820	-50	-80	530	910	-40	-50
Schuylkill Rd. (PA 724)	Old Schuylkill Rd. to PA 724 Ramps	1,410	1,510	1,490	1,600	80	90	1,630	1,740	140	140	1,390	1,460	-100	-140	1,520	1,610	-110	-130
PA 724 EB	Keim St. To PA 724 Ramps	490	340	520	360	30	20	580	400	60	40	710	560	190	200	800	630	220	230
PA 724 WB	PA 724 Ramps to Keim St.	190	530	230	590	40	60	270	650	40	60	290	680	60	90	380	790	110	140
Schuylkill Rd. (PA 724)	PA 724 Ramps to Keim St.	680	870	750	950	70	80	850	1,050	100	100	1,000	1,240	250	290	1,180	1,420	330	370
PA 724 EB	Hanover St. To Keim St.	410	270	430	290	20	20	440	300	10	10	340	210	-90	-80	380	230	-60	-70
PA 724 WB	Keim St. to Hanover St.	180	510	220	570	40	60	260	630	40	60	220	500	0	-70	280	580	20	-50
Schuylkill Rd. (PA 724)	Keim St. to Hanover St.	590	780	650	860	60	80	700	930	50	70	560	710	-90	-150	660	810	-40	-120
PA 724 EB	PA 100 to Hanover St.	420	310	460	340	40	30	480	380	20	40	400	300	-60	-40	440	330	-40	-50
PA 724 WB	Hanover St. to PA 100	220	440	230	470	10	30	260	530	30	60	210	430	-20	-40	240	470	-20	-60
Schuylkill Rd. (PA 724)	Hanover St. to PA 100	640	750	690	810	50	60	740	910	50	100	610	730	-80	-80	680	800	-60	-110
PA 724 EB	Laurelwood Rd. to PA 100	330	270	350	290	20	20	400	320	50	30	310	250	-40	-40	350	280	-50	-40
PA 724 WB	PA 100 to Laurelwood Rd.	350	460	370	480	20	20	410	540	40	60	320	430	-50	-50	360	470	-50	-70
Schuylkill Rd. (PA 724)	PA 100 to Laurelwood Rd.	680	730	720	770	40	40	810	860	90	90	630	680	-90	-90	710	750	-100	-110
PA 724 EB	Catfish Ln. to Laurelwood Rd.	320	320	350	350	30	30	390	390	40	40	300	300	-50	-50	310	310	-80	-80
PA 724 WB	Laurelwood Rd. to Catfish Ln.	330	540	360	580	30	40	410	660	50	80	300	480	-60	-100	320	530	-90	-130
Schuylkill Rd. (PA 724)	Laurelwood Rd. to Catfish Ln.	650	860	710	930	60	70	800	1,050	90	120	600	780	-110	-150	630	840	-170	-210
Yost Rd. EB	Moser Rd. to US 422 Ramps	180	300	190	320	10	20	220	370	30	50	170	290	-20	-30	190	320	-30	-50
Yost Rd. WB	US 422 Ramps to Moser Rd.	290	240	320	260	30	20	360	300	40	40	280	230	-40	-30	310	250	-50	-50
Yost Rd.	US 422 Ramps to Moser Rd.	470	540	510	580	40	40	580	670	70	90	450	520	-60	-60	500	570	-80	-100
Industrial Highway EB	Keim St. to Moser Rd./Yost Rd.	240	490	280	570	40	80	320	650	40	80	230	480	-50	-90	250	510	-70	-140
Industrial Highway WB	Moser Rd./Yost Rd. to Keim St.	390	390	450	450	60	60	510	510	60	60	380	380	-70	-70	410	410	-100	-100
Industrial Highway	Moser Rd./Yost Rd. to Keim St.	630	880	730	1,020	100	140	830	1,160	100	140	610	860	-120	-160	660	920	-170	-240
Industrial Highway EB	Hanover St. To Keim St.	230	560	250	610	20	50	260	640	10	30	230	550	-20	-60	240	580	-20	-60
Industrial Highway WB	Keim St. to Hanover St.	370	440	410	480	40	40	430	510	20	30	360	430	-50	-50	380	460	-50	-50
Industrial Highway	Keim St. to Hanover St.	600	1,000	660	1,090	60	90	690	1,150	30	60	590	980	-70	-110	620	1,040	-70	-110
College Dr. EB	High St. to Hanover St.	140	170	150	190	10	20	170	210	20	20	150	180	0	-10	160	200	-10	-10
College Dr. WB	Hanover St. to High St.	100	210	120	250	20	40	130	270	10	20	110	230	-10	-20	120	250	-10	-20
College Dr.	Hanover St. to High St.	240	380	270	440	30	60	300	480	30	40	260	410	-10	-30	280	450	-20	-30
High St. EB	Manatawny St. to Hanover St.	180	280	200	320	20	40	210	320	10	0	190	300	-10	-20	200	320	-10	0
High St. WB	Hanover St. to Manatawny St.	280	230	310	250	30	20	320	260	10	10	290	240	-20	-10	310	250	-10	-10
High St.	Hanover St. to Manatawny St.	460	510	510	570	50	60	530	580	20	10	480	540	-30	-30	510	570	-20	-10
High St. EB	PA 100 Ramps to College Dr.	220	390	230	400	10	10	250	440	20	40	230	410	0	10	240	430	-10	-10
High St. WB	College Dr. to PA 100 Ramps	350	310	360	320	10	10	390	340	30	20	360	320	0	0	380	330	-10	-10
High St.	College Dr. to PA 100 Ramps	570	700	590	720	20	20	640	780	50	60	590	730	0	10	620	760	-20	-20
High St. EB	Berks St. to PA 100 Ramps	650	460	690	490	40	30	730	520	40	30	660	470	-30	-20	690	490	-40	-30
High St. WB	PA 100 Ramps to Berks St.	330	600	350	640	20	40	370	680	20	40	340	610	-10	-30	350	640	-20	-40
High St.	PA 100 Ramps to Berks St.	980	1,060	1,040	1,130	60	70	1,100	1,200	60	70	1,000	1,080	-40	-50	1,040	1,130	-60	-70
King St. EB	Manatawny St. to PA 100	230	370	250	410	20	40	260	420	10	10	240	390	-10	-20	260	420	0	0
King St. WB	PA 100 to Manatawny St.	280	370	300	400	20	30	320	420	20	20	290	380	-10	-20	310	410	-10	-10
King St.	PA 100 to Manatawny St.	510	740	550	810	40	70	580	840	30	30	530	770	-20	-40	570	830	-10	-10

Table 6. US 422 Pottstown Bypass AM and PM Peak Hour Traffic Forecasts

Highway Facility	Location	Current		2025 No-Build		Current/2025		2045 No-Build		2025/2045		2025 Build		Build/No-Build		2045 Build		Build/No-Build	
		Peak Hour Vol.	Peak Hour Vol.	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference	Peak Hour Vol.	Peak Hour Vol.	Difference	Difference
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
US 422 Ramps																			
US 422 EB Off-Ramp	Armand Hammer Blvd.	330	330	340	340	10	10	350	350	10	10	410	410	70	70	440	440	90	90
US 422 WB On-Ramp	Armand Hammer Blvd.	400	380	410	390	10	10	420	390	10	0	430	410	20	20	450	430	30	40
US 422 WB Off-Ramp	Armand Hammer Blvd.	450	740	460	750	10	10	490	800	30	50	480	790	20	40	510	840	20	40
US 422 EB On-Ramp	Armand Hammer Blvd.	430	350	460	370	30	20	500	410	40	40	500	410	40	40	550	450	50	40
US 422 EB On-Ramp	PA 724	0	0	0	0	0	0	0	0	0	0	250	220	250	220	300	270	300	270
US 422 WB Off-Ramp	PA 724	180	280	190	290	10	10	200	310	10	20	260	380	70	90	300	430	100	120
US 422 EB Off-Ramp	PA 724	280	180	300	190	20	10	310	200	10	10	380	270	80	80	440	310	130	110
US 422 WB On-Ramp	PA 724	340	440	350	450	10	10	350	460	0	10	380	490	30	40	400	520	50	60
US 422 EB Off-Ramp	Keim St.	100	80	120	100	20	20	180	140	60	40	280	220	160	120	310	250	130	110
US 422 WB On-Ramp	Keim St.	30	40	40	50	10	10	50	60	10	10	80	110	40	60	100	130	50	70
US 422 EB On-Ramp	Hanover St.	290	270	300	280	10	10	310	290	10	10	330	310	30	30	350	330	40	40
US 422 WB Off-Ramp	Hanover St.	310	440	340	480	30	40	350	490	10	10	370	530	30	50	400	570	50	80
US 422 EB On-Ramp	PA 100 NB to US 422 EB	420	280	460	310	40	30	510	340	50	30	480	320	20	10	540	360	30	20
US 422 WB Off-Ramp	US 422 WB to PA 100 SB	160	350	160	360	0	10	180	400	20	40	190	420	30	60	210	460	30	60
US 422 EB On-Ramp	PA 100 SB to US 422 EB	810	440	860	470	50	30	880	480	20	10	890	480	30	10	940	510	60	30
US 422 WB Off-Ramp	US 422 WB to PA 100 NB	380	710	400	760	20	50	410	770	10	10	420	790	20	30	440	830	30	60
US 422 EB Off-Ramp	US 422 EB to PA 100 NB	40	70	40	80	0	10	50	90	10	10	90	160	50	80	100	180	50	90
US 422 WB On-Ramp	PA 100 SB to US 422 WB	90	70	100	80	10	10	110	80	10	0	210	160	110	80	230	180	120	100
US 422 EB Off-Ramp	US 422 EB to PA 100 SB	120	100	130	110	10	10	140	120	10	10	170	150	40	40	210	170	70	50
US 422 WB On-Ramp	PA 100 NB to US 422 WB	70	120	80	130	10	10	90	150	10	20	100	170	20	40	120	200	30	50
US 422 EB On-Ramp	Grosstown Rd.	160	140	170	150	10	10	190	170	20	20	290	250	120	100	350	310	160	140
US 422 WB Off-Ramp	Grosstown Rd.	80	180	90	200	10	20	100	220	10	20	140	320	50	120	170	370	70	150
US 422 EB Off-Ramp	Grosstown Rd.	30	30	50	50	20	20	60	60	10	10	80	80	30	30	90	90	30	30
US 422 WB On-Ramp	Grosstown Rd.	20	30	30	40	10	10	30	50	0	10	40	60	10	20	50	70	20	20

Roadway	Roadway Segment	2049 No Build		2049 No Build		Annual Growth Rate		2049 No Build	
		Annual Growth Rate	Peak Hour Volume	Annual Growth Rate	Peak Hour Volume	2045 No Build		Peak Hour Volume	
		2018 to 2045 No Build	Projected 2018 to 2045	2025 to 2045 No Build	Projected 2025 to 2045	Highest Projected 2018 to 2025		Highest Projected 2025 to 2045	
US 422 WB	Evergreen Rd. to Armand Hammer Blvd.	0.40%	3109	0.32%	3100	0.40%		3109	
US 422 EB	Armand Hammer Blvd. to Evergreen Rd.	0.38%	2295	0.27%	2285	0.38%		2295	
US 422 Total	Evergreen Rd. to Armand Hammer Blvd.	0.39%	5404	0.30%	5385	0.39%		5404	
US 422 WB	Armand Hammer Blvd. to PA 724	0.38%	2691	0.27%	2679	0.38%		2691	
US 422 EB	PA 724 to Armand Hammer Blvd.	0.32%	2228	0.21%	2219	0.32%		2228	
US 422 Total	Armand Hammer Blvd. to PA 724	0.35%	4919	0.24%	4898	0.35%		4919	
US 422 WB	PA 724 to Keim St.	0.35%	2840	0.24%	2827	0.35%		2840	
US 422 EB	Keim St. to PA 724	0.32%	2432	0.21%	2421	0.32%		2432	
US 422 Total	PA 724 to Keim St.	0.34%	5271	0.23%	5248	0.34%		5271	
US 422 WB	Keim St. to Hanover St.	0.37%	2903	0.25%	2889	0.37%		2903	
US 422 EB	Hanover St. to Keim St.	0.40%	2581	0.28%	2569	0.40%		2581	
US 422 Total	Keim St. to Hanover St.	0.38%	5484	0.27%	5458	0.38%		5484	
US 422 WB	Hanover St. to PA 100	0.36%	2405	0.28%	2397	0.36%		2405	
US 422 EB	PA 100 to Hanover St.	0.42%	2288	0.30%	2277	0.42%		2288	
US 422 Total	Hanover St. to PA 100	0.39%	4693	0.29%	4674	0.39%		4693	
US 422 WB	PA 100 to Grosstown Rd.	0.41%	1454	0.36%	1451	0.41%		1454	
US 422 EB	Grosstown Rd. to PA 100	0.43%	1669	0.35%	1663	0.43%		1669	
US 422 Total	PA 100 to Grosstown Rd.	0.42%	3123	0.35%	3114	0.42%		3123	
US 422 WB	Grosstown Rd. to County Line	0.40%	1281	0.37%	1279	0.40%		1281	
US 422 EB	County Line to Grosstown Rd.	0.46%	1559	0.34%	1551	0.46%		1559	
US 422 Total	Grosstown Rd. to County Line	0.44%	2840	0.35%	2830	0.44%		2840	
Armand Hammer Blvd. NB	Yost Rd. to High St.	0.18%	857	0.12%	855	0.18%		857	
Armand Hammer Blvd. SB	High St. to Yost Rd.	0.13%	564	0.09%	563	0.13%		564	
Armand Hammer Blvd.	Yost Rd. to High St.	0.16%	1420	0.11%	1417	0.16%		1420	
Moser Rd. NB	Yost Rd. to High St.	0.55%	297	0.36%	295	0.55%		297	
Moser Rd. SB	High St. to Yost Rd.	0.50%	327	0.16%	323	0.50%		327	
Moser Rd.	Yost Rd. to High St.	0.52%	623	0.25%	617	0.52%		623	
Keim St. NB	PA 724 to US 422	2.09%	153	1.70%	150	2.09%		153	
Keim St. SB	US 422 to PA 724	1.51%	64	0.92%	63	1.51%		64	
Keim St.	PA 724 to US 422	1.91%	216	1.45%	212	1.91%		216	
Hanover St. NB	Cedarville Rd. to PA 724	0.30%	395	0.26%	395	0.30%		395	
Hanover St. SB	PA 724 to Cedarvill Rd.	0.57%	430	0.50%	429	0.57%		430	
Hanover St.	Cedarville Rd. to PA 724	0.44%	825	0.39%	823	0.44%		825	
Hanover St. NB	PA 724 to US 422	0.23%	495	0.21%	495	0.23%		495	
Hanover St. SB	US 422 to PA 724	0.18%	434	0.12%	433	0.18%		434	
Hanover St.	PA 724 to US 422	0.21%	928	0.17%	927	0.21%		928	
Hanover St. NB	US 422 to River Rd.	0.31%	760	0.14%	755	0.31%		760	
Hanover St. SB	River Rd. to US 422	0.15%	494	0.10%	493	0.15%		494	
Hanover St.	US 422 to River Rd.	0.25%	1253	0.12%	1247	0.25%		1253	
Hanover St. NB	River Rd. to Industrial Highway	0.23%	667	0.15%	665	0.23%		667	
Hanover St. SB	Industrial Highway to River Rd.	0.20%	394	0.13%	393	0.20%		394	
Hanover St.	River Rd. to Industrial Highway	0.22%	1060	0.15%	1057	0.22%		1060	
Hanover St. NB	Industrial Highway to High St.	0.46%	347	0.30%	345	0.46%		347	
Hanover St. SB	High St. to Industrial Highway	0.59%	349	0.46%	347	0.59%		349	

Roadway	Roadway Segment	2049 No Build		2049 No Build		Annual Growth Rate		2049 No Build	
		Annual Growth Rate	Peak Hour Volume	Annual Growth Rate	Peak Hour Volume	2045 No Build		2045 No Build	Peak Hour Volume
		2018 to 2045 No Build	Projected 2018 to 2045	2025 to 2045 No Build	Projected 2025 to 2045	Highest Projected 2018 to 2025		Highest Projected 2018 to 2025	Highest Projected 2025 to 2045
Hanover St.	Industrial Highway to High St.	0.53%	695	0.38%	691	0.53%		0.53%	695
PA 100 NB	Cedarville Rd. to PA 724	0.46%	1223	0.30%	1215	0.46%		0.46%	1223
PA 100 SB	PA 724 to Cedarvill Rd.	0.50%	970	0.44%	967	0.50%		0.50%	970
PA 100 Total	Cedarville Rd. to PA 724	0.48%	2192	0.36%	2182	0.48%		0.48%	2192
PA 100 NB	PA 724 to US 422	0.56%	1688	0.31%	1671	0.56%		0.56%	1688
PA 100 SB	US 422 to PA 724	0.56%	1320	0.28%	1305	0.56%		0.56%	1320
PA 100 Total	PA 724 to US 422	0.56%	3007	0.30%	2976	0.56%		0.56%	3007
PA 100 NB	US 422 to High St.	0.41%	2044	0.15%	2023	0.41%		0.41%	2044
PA 100 SB	High St. to US 422	0.48%	1356	0.19%	1341	0.48%		0.48%	1356
PA 100 Total	US 422 to High St.	0.44%	3399	0.17%	3363	0.44%		0.44%	3399
PA 100 NB	King St. to Shoemaker St.	0.54%	1594	0.16%	1571	0.54%		0.54%	1594
PA 100 SB	King St. to Shoemaker St.	0.60%	1096	0.24%	1081	0.60%		0.60%	1096
PA 100 Total	King St. to Shoemaker St.	0.56%	2690	0.19%	2651	0.56%		0.56%	2690
Grosstown Rd NB	US 422 to High St.	1.07%	293	0.57%	287	1.07%		1.07%	293
Grosstown Rd SB	Hight St. to US 422	0.96%	229	0.74%	227	0.96%		0.96%	229
Grosstown Rd.	High St. to US 422	1.02%	521	0.64%	513	1.02%		1.02%	521
PA 724 EB	PA 724 Ramps to Old Schuylkill Rd.	0.56%	798	0.54%	798	0.56%		0.56%	798
PA 724 WB	Old Schuylkill Rd. to PA 724 Ramps	0.50%	980	0.32%	973	0.50%		0.50%	980
Schuylkill Rd. (PA 724)	Old Schuylkill Rd. to PA 724 Ramps	0.53%	1777	0.42%	1770	0.53%		0.53%	1777
PA 724 EB	Keim St. To PA 724 Ramps	0.60%	410	0.53%	409	0.60%		0.60%	410
PA 724 WB	PA 724 Ramps to Keim St.	0.76%	670	0.49%	663	0.76%		0.76%	670
Schuylkill Rd. (PA 724)	PA 724 Ramps to Keim St.	0.70%	1080	0.50%	1072	0.70%		0.70%	1080
PA 724 EB	Hanover St. To Keim St.	0.39%	305	0.17%	303	0.39%		0.39%	305
PA 724 WB	Keim St. to Hanover St.	0.79%	651	0.50%	643	0.79%		0.79%	651
Schuylkill Rd. (PA 724)	Keim St. to Hanover St.	0.65%	955	0.39%	945	0.65%		0.65%	955
PA 724 EB	PA 100 to Hanover St.	0.76%	392	0.56%	389	0.76%		0.76%	392
PA 724 WB	Hanover St. to PA 100	0.69%	545	0.60%	543	0.69%		0.69%	545
Schuylkill Rd. (PA 724)	Hanover St. to PA 100	0.72%	937	0.58%	932	0.72%		0.72%	937
PA 724 EB	Laurelwood Rd. to PA 100	0.63%	329	0.49%	327	0.63%		0.63%	329
PA 724 WB	PA 100 to Laurelwood Rd.	0.60%	553	0.59%	553	0.60%		0.60%	553
Schuylkill Rd. (PA 724)	PA 100 to Laurelwood Rd.	0.61%	882	0.55%	880	0.61%		0.61%	882
PA 724 EB	Catfish Ln. to Laurelwood Rd.	0.74%	402	0.54%	399	0.74%		0.74%	402
PA 724 WB	Laurelwood Rd. to Catfish Ln.	0.75%	680	0.65%	678	0.75%		0.75%	680
Schuylkill Rd. (PA 724)	Laurelwood Rd. to Catfish Ln.	0.74%	1082	0.61%	1076	0.74%		0.74%	1082
Yost Rd. EB	Moser Rd. to US 422 Ramps	0.78%	382	0.73%	381	0.78%		0.78%	382
Yost Rd. WB	US 422 Ramps to Moser Rd.	0.83%	311	0.72%	309	0.83%		0.83%	311
Yost Rd.	US 422 Ramps to Moser Rd.	0.80%	692	0.72%	690	0.80%		0.80%	692
Industrial Highway EB	Keim St. to Moser Rd./Yost Rd.	1.05%	678	0.66%	668	1.05%		1.05%	678
Industrial Highway WB	Moser Rd./Yost Rd. to Keim St.	1.00%	531	0.63%	523	1.00%		1.00%	531
Industrial Highway	Moser Rd./Yost Rd. to Keim St.	1.03%	1209	0.65%	1191	1.03%		1.03%	1209
Industrial Highway EB	Hanover St. To Keim St.	0.50%	653	0.24%	647	0.50%		0.50%	653
Industrial Highway WB	Keim St. to Hanover St.	0.55%	522	0.30%	517	0.55%		0.55%	522
Industrial Highway	Keim St. to Hanover St.	0.52%	1175	0.27%	1163	0.52%		0.52%	1175
College Dr. EB	High St. to Hanover St.	0.79%	217	0.50%	215	0.79%		0.79%	217

Roadway	Roadway Segment	2049 No Build		2049 No Build		Annual Growth Rate		2049 No Build	
		Annual Growth Rate	Peak Hour Volume	Annual Growth Rate	Peak Hour Volume	2045 No Build		Peak Hour Volume	
		2018 to 2045 No Build	Projected 2018 to 2045	2025 to 2045 No Build	Projected 2025 to 2045	Highest Projected 2018 to 2025		Highest Projected 2025 to 2045	
College Dr. WB	Hanover St. to High St.	0.94%	281	0.39%	275	0.94%		281	
College Dr.	Hanover St. to High St.	0.87%	497	0.44%	489	0.87%		497	
High St. EB	Manatawny St. to Hanover St.	0.50%	327	0.00%	320	0.50%		327	
High St. WB	Hanover St. to Manatawny St.	0.46%	265	0.20%	263	0.46%		265	
High St.	Hanover St. to Manatawny St.	0.48%	592	0.09%	583	0.48%		592	
High St. EB	PA 100 Ramps to College Dr.	0.45%	448	0.48%	449	0.48%		449	
High St. WB	College Dr. to PA 100 Ramps	0.34%	345	0.30%	345	0.34%		345	
High St.	College Dr. to PA 100 Ramps	0.40%	793	0.40%	793	0.40%		793	
High St. EB	Berks St. to PA 100 Ramps	0.46%	530	0.30%	527	0.46%		530	
High St. WB	PA 100 Ramps to Berks St.	0.46%	693	0.30%	689	0.46%		693	
High St.	PA 100 Ramps to Berks St.	0.46%	1223	0.30%	1215	0.46%		1223	
King St. EB	Manatawny St. to PA 100	0.47%	428	0.12%	423	0.47%		428	
King St. WB	PA 100 to Manatawny St.	0.47%	428	0.24%	425	0.47%		428	
King St.	PA 100 to Manatawny St.	0.47%	856	0.18%	847	0.47%		856	
US 422 EB Off-Ramp	Armand Hammer Blvd.	0.22%	354	0.15%	353	0.22%		354	
US 422 WB On-Ramp	Armand Hammer Blvd.	0.10%	392	0.00%	390	0.10%		392	
US 422 WB Off-Ramp	Armand Hammer Blvd.	0.29%	810	0.32%	811	0.32%		811	
US 422 EB On-Ramp	Armand Hammer Blvd.	0.59%	420	0.51%	419	0.59%		420	
US 422 WB Off-Ramp	PA 724	0.38%	315	0.33%	315	0.38%		315	
US 422 EB Off-Ramp	PA 724	0.39%	204	0.26%	203	0.39%		204	
US 422 WB On-Ramp	PA 724	0.16%	464	0.11%	463	0.16%		464	
US 422 EB Off-Ramp	Keim St.	2.09%	153	1.70%	150	2.09%		153	
US 422 WB On-Ramp	Keim St.	1.51%	64	0.92%	63	1.51%		64	
US 422 EB On-Ramp	Hanover St.	0.27%	294	0.18%	293	0.27%		294	
US 422 WB Off-Ramp	Hanover St.	0.40%	498	0.10%	493	0.40%		498	
US 422 EB On-Ramp	PA 100 NB to US 422 EB	0.72%	350	0.46%	347	0.72%		350	
US 422 WB Off-Ramp	US 422 WB to PA 100 SB	0.50%	408	0.53%	409	0.53%		409	
US 422 EB On-Ramp	PA 100 SB to US 422 EB	0.32%	487	0.11%	483	0.32%		487	
US 422 WB Off-Ramp	US 422 WB to PA 100 NB	0.30%	780	0.07%	773	0.30%		780	
US 422 EB Off-Ramp	US 422 EB to PA 100 NB	0.94%	94	0.59%	93	0.94%		94	
US 422 WB On-Ramp	PA 100 SB to US 422 WB	0.50%	82	0.00%	80	0.50%		82	
US 422 EB Off-Ramp	US 422 EB to PA 100 SB	0.68%	124	0.44%	123	0.68%		124	
US 422 WB On-Ramp	PA 100 NB to US 422 WB	0.83%	156	0.72%	155	0.83%		156	
US 422 EB On-Ramp	Grosstown Rd.	0.72%	175	0.63%	175	0.72%		175	
US 422 WB Off-Ramp	Grosstown Rd.	0.75%	227	0.48%	225	0.75%		227	
US 422 EB Off-Ramp	Grosstown Rd.	2.60%	67	0.92%	63	2.60%		67	
US 422 WB On-Ramp	Grosstown Rd.	1.91%	54	1.12%	53	1.91%		54	

Roadway	Roadway Segment	2049 Build		2049 Build		Annual Growth Rate		2049 Build	
		Annual Growth Rate	Peak Hour Volume	Annual Growth Rate	Peak Hour Volume	2045 Build		Peak Hour Volume	
		2018 to 2045 Build	Projected 2018 to 2045	2025 to 2045 Build	Projected 2025 to 2045	Highest Projected 2018 to 2025		Highest Projected 2025 to 2045	
US 422 WB	Evergreen Rd. to Armand Hammer Blvd.	1.09%	3855	0.61%	3781	1.09%		3855	
US 422 EB	Armand Hammer Blvd. to Evergreen Rd.	1.10%	2863	0.66%	2814	1.10%		2863	
US 422 Total	Evergreen Rd. to Armand Hammer Blvd.	1.10%	6717	0.63%	6594	1.10%		6717	
US 422 WB	Armand Hammer Blvd. to PA 724	1.18%	3438	0.63%	3365	1.18%		3438	
US 422 EB	PA 724 to Armand Hammer Blvd.	1.12%	2855	0.65%	2802	1.12%		2855	
US 422 Total	Armand Hammer Blvd. to PA 724	1.15%	6293	0.64%	6166	1.15%		6293	
US 422 WB	PA 724 to Keim St.	1.04%	3513	0.58%	3450	1.04%		3513	
US 422 EB	Keim St. to PA 724	0.86%	2867	0.62%	2839	0.86%		2867	
US 422 Total	PA 724 to Keim St.	0.96%	6378	0.60%	6289	0.96%		6378	
US 422 WB	Keim St. to Hanover St.	1.12%	3660	0.59%	3584	1.12%		3660	
US 422 EB	Hanover St. to Keim St.	1.05%	3149	0.62%	3096	1.05%		3149	
US 422 Total	Keim St. to Hanover St.	1.09%	6809	0.60%	6680	1.09%		6809	
US 422 WB	Hanover St. to PA 100	1.15%	3068	0.64%	3006	1.15%		3068	
US 422 EB	PA 100 to Hanover St.	1.09%	2809	0.66%	2762	1.09%		2809	
US 422 Total	Hanover St. to PA 100	1.12%	5877	0.65%	5767	1.12%		5877	
US 422 WB	PA 100 to Grosstown Rd.	1.70%	2162	0.87%	2091	1.70%		2162	
US 422 EB	Grosstown Rd. to PA 100	1.48%	2302	0.75%	2236	1.48%		2302	
US 422 Total	PA 100 to Grosstown Rd.	1.59%	4463	0.80%	4327	1.59%		4463	
US 422 WB	Grosstown Rd. to County Line	1.57%	1831	0.89%	1783	1.57%		1831	
US 422 EB	County Line to Grosstown Rd.	1.37%	2060	0.69%	2005	1.37%		2060	
US 422 Total	Grosstown Rd. to County Line	1.46%	3890	0.78%	3787	1.46%		3890	
Armand Hammer Blvd. NB	Yost Rd. to High St.	0.31%	891	0.29%	891	0.31%		891	
Armand Hammer Blvd. SB	High St. to Yost Rd.	0.33%	598	0.35%	599	0.35%		599	
Armand Hammer Blvd.	Yost Rd. to High St.	0.32%	1489	0.32%	1489	0.32%		1489	
Moser Rd. NB	Yost Rd. to High St.	0.68%	309	0.35%	305	0.68%		309	
Moser Rd. SB	High St. to Yost Rd.	0.83%	362	0.61%	359	0.83%		362	
Moser Rd.	Yost Rd. to High St.	0.76%	670	0.49%	663	0.76%		670	
Keim St. NB	PA 724 to US 422	6.33%	537	1.37%	444	6.33%		537	
Keim St. SB	US 422 to PA 724	6.14%	254	1.12%	210	6.14%		254	
Keim St.	PA 724 to US 422	6.27%	791	1.29%	653	6.27%		791	
Hanover St. NB	Cedarville Rd. to PA 724	0.48%	418	0.38%	417	0.48%		418	
Hanover St. SB	PA 724 to Cedarvill Rd.	1.07%	501	0.67%	493	1.07%		501	
Hanover St.	Cedarville Rd. to PA 724	0.79%	919	0.53%	910	0.79%		919	
Hanover St. NB	PA 724 to US 422	0.38%	518	0.30%	517	0.38%		518	
Hanover St. SB	US 422 to PA 724	0.51%	480	0.69%	484	0.69%		484	
Hanover St.	PA 724 to US 422	0.44%	998	0.48%	1000	0.48%		1000	
Hanover St. NB	US 422 to River Rd.	0.50%	806	0.19%	797	0.50%		806	
Hanover St. SB	River Rd. to US 422	0.30%	517	0.41%	519	0.41%		519	
Hanover St.	US 422 to River Rd.	0.42%	1323	0.28%	1315	0.42%		1323	
Hanover St. NB	River Rd. to Industrial Highway	0.45%	713	0.37%	711	0.45%		713	
Hanover St. SB	Industrial Highway to River Rd.	0.38%	417	0.25%	415	0.38%		417	
Hanover St.	River Rd. to Industrial Highway	0.42%	1129	0.33%	1125	0.42%		1129	
Hanover St. NB	Industrial Highway to High St.	0.68%	370	0.59%	369	0.68%		370	
Hanover St. SB	High St. to Industrial Highway	0.80%	372	0.59%	369	0.80%		372	

Roadway	Roadway Segment	2049 Build		2049 Build		Annual Growth Rate	
		Annual Growth Rate	Peak Hour Volume	Annual Growth Rate	Peak Hour Volume	2045 Build	2049 Build
		2018 to 2045 Build	Projected 2018 to 2045	2025 to 2045 Build	Projected 2025 to 2045	Highest Projected 2018 to 2025	Highest Projected 2025 to 2045
Hanover St.	Industrial Highway to High St.	0.74%	742	0.59%	738	0.74%	742
PA 100 NB	Cedarville Rd. to PA 724	0.61%	1281	0.42%	1272	0.61%	1281
PA 100 SB	PA 724 to Cedarvill Rd.	0.73%	1040	0.47%	1030	0.73%	1040
PA 100 Total	Cedarville Rd. to PA 724	0.66%	2321	0.44%	2301	0.66%	2321
PA 100 NB	PA 724 to US 422	0.58%	1699	0.44%	1690	0.58%	1699
PA 100 SB	US 422 to PA 724	0.59%	1331	0.36%	1319	0.59%	1331
PA 100 Total	PA 724 to US 422	0.58%	3030	0.41%	3009	0.58%	3030
PA 100 NB	US 422 to High St.	0.61%	2173	0.27%	2143	0.61%	2173
PA 100 SB	High St. to US 422	0.64%	1426	0.22%	1403	0.64%	1426
PA 100 Total	US 422 to High St.	0.62%	3598	0.25%	3546	0.62%	3598
PA 100 NB	King St. to Shoemaker St.	0.65%	1653	0.22%	1625	0.65%	1653
PA 100 SB	King St. to Shoemaker St.	0.67%	1120	0.28%	1103	0.67%	1120
PA 100 Total	King St. to Shoemaker St.	0.66%	2773	0.25%	2727	0.66%	2773
Grosstown Rd NB	US 422 to High St.	3.19%	556	1.02%	511	3.19%	556
Grosstown Rd SB	Hight St. to US 422	2.92%	416	0.89%	384	2.92%	416
Grosstown Rd.	High St. to US 422	3.07%	971	0.96%	894	3.07%	971
PA 724 EB	PA 724 Ramps to Old Schuylkill Rd.	0.16%	705	0.45%	713	0.45%	713
PA 724 WB	Old Schuylkill Rd. to PA 724 Ramps	0.30%	921	0.52%	930	0.52%	930
Schuylkill Rd. (PA 724)	Old Schuylkill Rd. to PA 724 Ramps	0.24%	1626	0.49%	1642	0.49%	1642
PA 724 EB	Keim St. To PA 724 Ramps	2.31%	691	0.59%	646	2.31%	691
PA 724 WB	PA 724 Ramps to Keim St.	1.49%	839	0.75%	815	1.49%	839
Schuylkill Rd. (PA 724)	PA 724 Ramps to Keim St.	1.83%	1527	0.68%	1460	1.83%	1527
PA 724 EB	Hanover St. To Keim St.	-0.59%	225	0.46%	235	0.46%	235
PA 724 WB	Keim St. to Hanover St.	0.48%	592	0.74%	598	0.74%	598
Schuylkill Rd. (PA 724)	Keim St. to Hanover St.	0.14%	815	0.66%	832	0.66%	832
PA 724 EB	PA 100 to Hanover St.	0.23%	334	0.48%	337	0.48%	337
PA 724 WB	Hanover St. to PA 100	0.24%	475	0.45%	479	0.45%	479
Schuylkill Rd. (PA 724)	Hanover St. to PA 100	0.24%	808	0.46%	815	0.46%	815
PA 724 EB	Laurelwood Rd. to PA 100	0.13%	282	0.57%	287	0.57%	287
PA 724 WB	PA 100 to Laurelwood Rd.	0.08%	472	0.45%	479	0.45%	479
Schuylkill Rd. (PA 724)	PA 100 to Laurelwood Rd.	0.10%	754	0.49%	765	0.49%	765
PA 724 EB	Catfish Ln. to Laurelwood Rd.	-0.12%	309	0.16%	313	0.16%	313
PA 724 WB	Laurelwood Rd. to Catfish Ln.	-0.07%	529	0.50%	541	0.50%	541
Schuylkill Rd. (PA 724)	Laurelwood Rd. to Catfish Ln.	-0.09%	838	0.37%	853	0.37%	853
Yost Rd. EB	Moser Rd. to US 422 Ramps	0.24%	324	0.49%	327	0.49%	327
Yost Rd. WB	US 422 Ramps to Moser Rd.	0.15%	252	0.42%	255	0.42%	255
Yost Rd.	US 422 Ramps to Moser Rd.	0.20%	575	0.46%	581	0.46%	581
Industrial Highway EB	Keim St. to Moser Rd./Yost Rd.	0.15%	514	0.30%	517	0.30%	517
Industrial Highway WB	Moser Rd./Yost Rd. to Keim St.	0.19%	414	0.38%	417	0.38%	417
Industrial Highway	Moser Rd./Yost Rd. to Keim St.	0.16%	927	0.34%	933	0.34%	933
Industrial Highway EB	Hanover St. To Keim St.	0.13%	584	0.27%	587	0.27%	587
Industrial Highway WB	Keim St. to Hanover St.	0.16%	464	0.34%	467	0.34%	467
Industrial Highway	Keim St. to Hanover St.	0.15%	1047	0.30%	1053	0.30%	1053
College Dr. EB	High St. to Hanover St.	0.60%	205	0.53%	205	0.60%	205

Roadway	Roadway Segment	2049 Build		2049 Build		Annual Growth Rate		2049 Build	
		Annual Growth Rate	Peak Hour Volume	Annual Growth Rate	Peak Hour Volume	2045 Build		Peak Hour Volume	
		2018 to 2045 Build	Projected 2018 to 2045	2025 to 2045 Build	Projected 2025 to 2045	Highest Projected 2018 to 2025		Highest Projected 2025 to 2045	
College Dr. WB	Hanover St. to High St.	0.65%	257	0.42%	255	0.65%		257	
College Dr.	Hanover St. to High St.	0.63%	462	0.47%	459	0.63%		462	
High St. EB	Manatawny St. to Hanover St.	0.50%	327	0.32%	325	0.50%		327	
High St. WB	Hanover St. to Manatawny St.	0.31%	254	0.20%	253	0.31%		254	
High St.	Hanover St. to Manatawny St.	0.41%	580	0.27%	577	0.41%		580	
High St. EB	PA 100 Ramps to College Dr.	0.36%	437	0.24%	435	0.36%		437	
High St. WB	College Dr. to PA 100 Ramps	0.23%	334	0.15%	333	0.23%		334	
High St.	College Dr. to PA 100 Ramps	0.31%	770	0.20%	767	0.31%		770	
High St. EB	Berks St. to PA 100 Ramps	0.23%	495	0.21%	495	0.23%		495	
High St. WB	PA 100 Ramps to Berks St.	0.24%	647	0.24%	647	0.24%		647	
High St.	PA 100 Ramps to Berks St.	0.24%	1141	0.23%	1141	0.24%		1141	
King St. EB	Manatawny St. to PA 100	0.47%	428	0.37%	427	0.47%		428	
King St. WB	PA 100 to Manatawny St.	0.38%	417	0.38%	417	0.38%		417	
King St.	PA 100 to Manatawny St.	0.43%	845	0.38%	843	0.43%		845	
US 422 EB Off-Ramp	Armand Hammer Blvd.	1.07%	460	0.35%	447	1.07%		460	
US 422 WB On-Ramp	Armand Hammer Blvd.	0.46%	438	0.24%	435	0.46%		438	
US 422 WB Off-Ramp	Armand Hammer Blvd.	0.47%	856	0.31%	851	0.47%		856	
US 422 EB On-Ramp	Armand Hammer Blvd.	0.94%	468	0.47%	459	0.94%		468	
US 422 WB Off-Ramp	PA 724	1.60%	459	0.62%	441	1.60%		459	
US 422 EB Off-Ramp	PA 724	2.03%	336	0.69%	319	2.03%		336	
US 422 WB On-Ramp	PA 724	0.62%	534	0.30%	527	0.62%		534	
US 422 EB Off-Ramp	Keim St.	4.31%	296	0.64%	257	4.31%		296	
US 422 WB On-Ramp	Keim St.	4.46%	155	0.84%	135	4.46%		155	
US 422 EB On-Ramp	Hanover St.	0.75%	340	0.31%	335	0.75%		340	
US 422 WB Off-Ramp	Hanover St.	0.96%	593	0.36%	579	0.96%		593	
US 422 EB On-Ramp	PA 100 NB to US 422 EB	0.94%	374	0.59%	369	0.94%		374	
US 422 WB Off-Ramp	US 422 WB to PA 100 SB	1.02%	480	0.46%	469	1.02%		480	
US 422 EB On-Ramp	PA 100 SB to US 422 EB	0.55%	522	0.30%	517	0.55%		522	
US 422 WB Off-Ramp	US 422 WB to PA 100 NB	0.58%	850	0.25%	839	0.58%		850	
US 422 EB Off-Ramp	US 422 EB to PA 100 NB	3.56%	208	0.59%	185	3.56%		208	
US 422 WB On-Ramp	PA 100 SB to US 422 WB	3.56%	208	0.59%	185	3.56%		208	
US 422 EB Off-Ramp	US 422 EB to PA 100 SB	1.98%	184	0.63%	175	1.98%		184	
US 422 WB On-Ramp	PA 100 NB to US 422 WB	1.91%	216	0.82%	207	1.91%		216	
US 422 EB On-Ramp	Grosstown Rd.	2.99%	349	1.08%	324	2.99%		349	
US 422 WB Off-Ramp	Grosstown Rd.	2.70%	412	0.73%	381	2.70%		412	
US 422 EB Off-Ramp	Grosstown Rd.	4.15%	106	0.59%	93	4.15%		106	
US 422 WB On-Ramp	Grosstown Rd.	3.19%	80	0.77%	73	3.19%		80	

SR 0422 Traffic Data - 01/25/18 - PA 100 NB						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	62	1	2	2
1:00 AM	2:00 AM	0	35	4	3	0
2:00 AM	3:00 AM	0	27	2	4	2
3:00 AM	4:00 AM	0	52	9	3	4
4:00 AM	5:00 AM	0	162	15	8	4
5:00 AM	6:00 AM	1	407	43	10	6
6:00 AM	7:00 AM	2	714	63	19	11
7:00 AM	8:00 AM	2	913	66	30	14
8:00 AM	9:00 AM	1	707	72	12	12
9:00 AM	10:00 AM	1	611	59	31	7
10:00 AM	11:00 AM	3	653	59	34	6
11:00 AM	12:00 PM	0	686	52	16	8
12:00 PM	1:00 PM	2	778	57	24	11
1:00 PM	2:00 PM	0	807	55	21	7
2:00 PM	3:00 PM	2	929	55	22	9
3:00 PM	4:00 PM	0	1112	78	18	8
4:00 PM	5:00 PM	6	1240	75	15	6
5:00 PM	6:00 PM	0	1263	59	7	0
6:00 PM	7:00 PM	0	869	43	4	2
7:00 PM	8:00 PM	1	601	22	5	0
8:00 PM	9:00 PM	0	554	21	6	3
9:00 PM	10:00 PM	1	314	7	3	1
10:00 PM	11:00 PM	0	147	10	2	0
11:00 PM	12:00 AM	0	94	7	1	1
AM (6 AM to 3 PM)		0.2%	88.8%	7.1%	2.8%	1.1%
PM (3 PM to 6 AM)		0.1%	89.8%	6.0%	2.7%	1.4%

SR 0422 Traffic Data - 01/25/18 - PA 100 SB						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	1	51	0	3	0
1:00 AM	2:00 AM	1	44	1	4	1
2:00 AM	3:00 AM	0	35	0	2	5
3:00 AM	4:00 AM	0	65	3	8	0
4:00 AM	5:00 AM	2	160	29	11	6
5:00 AM	6:00 AM	3	621	75	16	10
6:00 AM	7:00 AM	2	986	74	13	12
7:00 AM	8:00 AM	4	1093	71	13	15
8:00 AM	9:00 AM	4	841	78	26	14
9:00 AM	10:00 AM	6	700	77	25	8
10:00 AM	11:00 AM	3	636	58	20	8
11:00 AM	12:00 PM	0	765	59	16	11
12:00 PM	1:00 PM	7	763	77	36	11
1:00 PM	2:00 PM	1	802	68	19	8
2:00 PM	3:00 PM	0	872	73	11	4
3:00 PM	4:00 PM	1	1076	99	18	7
4:00 PM	5:00 PM	0	1142	88	8	5
5:00 PM	6:00 PM	3	1023	59	12	2
6:00 PM	7:00 PM	2	777	51	11	0
7:00 PM	8:00 PM	0	553	32	3	2
8:00 PM	9:00 PM	0	386	30	5	1
9:00 PM	10:00 PM	0	290	14	0	1
10:00 PM	11:00 PM	0	149	9	1	0
11:00 PM	12:00 AM	0	95	5	2	0
AM (6 AM to 3 PM)		0.3%	88.7%	7.7%	2.2%	1.1%
PM (3 PM to 6 AM)		0.4%	89.6%	5.6%	3.0%	1.3%

SR 0422 Traffic Data - 01/25/18 - Ramp R (SR 422 WB On Ramp from PA 100 SB)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	8	0	0	0
1:00 AM	2:00 AM	0	1	1	0	0
2:00 AM	3:00 AM	0	3	2	0	0
3:00 AM	4:00 AM	0	5	0	0	0
4:00 AM	5:00 AM	0	10	0	2	2
5:00 AM	6:00 AM	0	33	2	5	0
6:00 AM	7:00 AM	0	69	2	8	1
7:00 AM	8:00 AM	0	93	4	5	0
8:00 AM	9:00 AM	0	64	7	3	3
9:00 AM	10:00 AM	0	55	4	7	1
10:00 AM	11:00 AM	0	62	3	5	5
11:00 AM	12:00 PM	0	62	5	8	5
12:00 PM	1:00 PM	0	69	3	6	3
1:00 PM	2:00 PM	0	65	0	7	5
2:00 PM	3:00 PM	0	66	4	5	4
3:00 PM	4:00 PM	0	77	3	2	1
4:00 PM	5:00 PM	0	69	1	4	0
5:00 PM	6:00 PM	0	52	2	0	0
6:00 PM	7:00 PM	0	76	1	1	0
7:00 PM	8:00 PM	0	54	0	2	0
8:00 PM	9:00 PM	0	41	1	1	0
9:00 PM	10:00 PM	0	35	1	1	0
10:00 PM	11:00 PM	0	16	1	0	0
11:00 PM	12:00 AM	0	8	0	0	0
AM (6 AM to 3 PM)		0.0%	84.0%	4.5%	7.6%	3.9%
PM (3 PM to 6 AM)		0.0%	88.3%	7.7%	3.0%	1.0%

SR 0422 Traffic Data - 01/25/18 - Ramp T (SR 422 EB Off Ramp to PA 100 SB)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	6	0	1	0
1:00 AM	2:00 AM	0	6	0	1	0
2:00 AM	3:00 AM	0	5	1	1	0
3:00 AM	4:00 AM	0	8	0	2	0
4:00 AM	5:00 AM	0	26	4	1	1
5:00 AM	6:00 AM	0	118	3	4	2
6:00 AM	7:00 AM	0	100	4	1	1
7:00 AM	8:00 AM	0	121	6	2	1
8:00 AM	9:00 AM	0	108	2	7	0
9:00 AM	10:00 AM	0	76	0	5	0
10:00 AM	11:00 AM	0	66	1	1	0
11:00 AM	12:00 PM	0	58	6	6	2
12:00 PM	1:00 PM	0	63	3	3	1
1:00 PM	2:00 PM	0	70	4	0	0
2:00 PM	3:00 PM	0	74	1	1	1
3:00 PM	4:00 PM	0	74	2	0	0
4:00 PM	5:00 PM	0	95	4	0	0
5:00 PM	6:00 PM	0	93	1	3	0
6:00 PM	7:00 PM	0	66	1	1	0
7:00 PM	8:00 PM	0	44	0	0	0
8:00 PM	9:00 PM	0	25	1	0	0
9:00 PM	10:00 PM	0	19	0	0	0
10:00 PM	11:00 PM	0	11	1	1	0
11:00 PM	12:00 AM	0	3	0	0	0
AM (6 AM to 3 PM)		0.0%	92.4%	3.4%	3.3%	0.8%
PM (3 PM to 6 AM)		0.0%	90.9%	3.3%	5.4%	0.3%

SR 0422 Traffic Data - 01/25/18 - Ramp V (Rt. 422 EB On Ramp from Rt. 100 NB)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	13	0	2	0
1:00 AM	2:00 AM	0	8	0	0	0
2:00 AM	3:00 AM	0	11	0	1	1
3:00 AM	4:00 AM	0	21	1	1	1
4:00 AM	5:00 AM	0	105	14	6	2
5:00 AM	6:00 AM	0	254	20	4	0
6:00 AM	7:00 AM	0	369	21	10	3
7:00 AM	8:00 AM	0	401	22	13	4
8:00 AM	9:00 AM	0	252	17	7	0
9:00 AM	10:00 AM	0	217	9	7	3
10:00 AM	11:00 AM	0	207	7	9	1
11:00 AM	12:00 PM	0	186	10	3	0
12:00 PM	1:00 PM	0	196	13	7	4
1:00 PM	2:00 PM	0	207	13	0	2
2:00 PM	3:00 PM	0	226	6	7	2
3:00 PM	4:00 PM	0	279	9	7	1
4:00 PM	5:00 PM	0	254	6	6	2
5:00 PM	6:00 PM	0	276	14	2	1
6:00 PM	7:00 PM	0	180	7	0	0
7:00 PM	8:00 PM	0	121	1	3	0
8:00 PM	9:00 PM	0	101	3	2	2
9:00 PM	10:00 PM	0	66	1	0	0
10:00 PM	11:00 PM	0	36	1	1	0
11:00 PM	12:00 AM	0	13	3	0	0
AM (6 AM to 3 PM)		0.0%	92.0%	4.7%	2.5%	0.8%
PM (3 PM to 6 AM)		0.0%	91.8%	4.2%	2.9%	1.1%

SR 0422 Traffic Data - 01/25/18 - Ramp P (SR 422 WB Off Ramp to PA 100 NB)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	49	3	1	2
1:00 AM	2:00 AM	0	26	3	1	0
2:00 AM	3:00 AM	0	12	3	3	0
3:00 AM	4:00 AM	0	20	2	7	3
4:00 AM	5:00 AM	0	40	8	4	1
5:00 AM	6:00 AM	0	117	10	15	3
6:00 AM	7:00 AM	0	219	17	37	4
7:00 AM	8:00 AM	0	361	23	25	7
8:00 AM	9:00 AM	0	305	25	42	8
9:00 AM	10:00 AM	0	283	32	34	6
10:00 AM	11:00 AM	0	310	27	33	10
11:00 AM	12:00 PM	0	318	30	48	11
12:00 PM	1:00 PM	0	334	28	40	4
1:00 PM	2:00 PM	0	367	31	38	5
2:00 PM	3:00 PM	1	489	61	35	8
3:00 PM	4:00 PM	0	661	82	18	4
4:00 PM	5:00 PM	0	727	52	9	4
5:00 PM	6:00 PM	0	645	41	4	4
6:00 PM	7:00 PM	0	529	33	1	1
7:00 PM	8:00 PM	0	368	24	7	0
8:00 PM	9:00 PM	0	255	8	4	0
9:00 PM	10:00 PM	0	236	13	1	1
10:00 PM	11:00 PM	0	138	11	3	0
11:00 PM	12:00 AM	0	93	0	0	1
AM (6 AM to 3 PM)		0.0%	81.5%	7.3%	9.4%	1.7%
PM (3 PM to 6 AM)		0.0%	86.5%	7.4%	4.8%	1.3%

SR 0422 Traffic Data - 01/25/18 - Ramp Q (SR 422 WB off Ramp to PA 100 SB)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	15	0	0	0
1:00 AM	2:00 AM	0	17	0	1	0
2:00 AM	3:00 AM	0	8	0	0	0
3:00 AM	4:00 AM	0	6	0	2	0
4:00 AM	5:00 AM	0	20	1	1	0
5:00 AM	6:00 AM	0	57	3	1	1
6:00 AM	7:00 AM	0	135	5	2	3
7:00 AM	8:00 AM	0	151	3	0	3
8:00 AM	9:00 AM	0	157	8	7	4
9:00 AM	10:00 AM	0	141	4	14	3
10:00 AM	11:00 AM	0	133	3	7	1
11:00 AM	12:00 PM	0	161	7	4	1
12:00 PM	1:00 PM	0	159	9	10	3
1:00 PM	2:00 PM	0	194	4	4	3
2:00 PM	3:00 PM	0	221	8	6	1
3:00 PM	4:00 PM	0	313	14	9	3
4:00 PM	5:00 PM	0	342	11	1	0
5:00 PM	6:00 PM	0	305	4	4	1
6:00 PM	7:00 PM	0	224	4	1	0
7:00 PM	8:00 PM	0	160	4	0	0
8:00 PM	9:00 PM	0	115	4	0	0
9:00 PM	10:00 PM	0	89	2	0	0
10:00 PM	11:00 PM	0	43	0	1	0
11:00 PM	12:00 AM	0	39	0	0	0
AM (6 AM to 3 PM)		0.0%	91.9%	3.2%	3.5%	1.4%
PM (3 PM to 6 AM)		0.0%	95.1%	1.8%	2.9%	0.2%

SR 0422 Traffic Data - 01/25/18 - Ramp S (SR 422 EB On Ramp from PA 100 SB)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	25	0	3	0
1:00 AM	2:00 AM	0	19	0	4	0
2:00 AM	3:00 AM	0	18	0	10	0
3:00 AM	4:00 AM	0	55	0	6	0
4:00 AM	5:00 AM	1	186	6	5	1
5:00 AM	6:00 AM	1	483	29	18	2
6:00 AM	7:00 AM	2	806	27	44	5
7:00 AM	8:00 AM	0	692	14	30	7
8:00 AM	9:00 AM	0	532	13	44	4
9:00 AM	10:00 AM	0	382	12	34	6
10:00 AM	11:00 AM	0	334	14	22	6
11:00 AM	12:00 PM	0	346	11	37	3
12:00 PM	1:00 PM	0	369	12	33	7
1:00 PM	2:00 PM	0	352	8	25	4
2:00 PM	3:00 PM	0	418	16	20	3
3:00 PM	4:00 PM	0	471	11	12	3
4:00 PM	5:00 PM	0	455	13	6	2
5:00 PM	6:00 PM	0	440	5	5	0
6:00 PM	7:00 PM	0	323	9	4	0
7:00 PM	8:00 PM	0	239	3	3	0
8:00 PM	9:00 PM	1	213	2	4	2
9:00 PM	10:00 PM	0	119	1	3	0
10:00 PM	11:00 PM	0	115	1	2	1
11:00 PM	12:00 AM	0	40	0	1	1
AM (6 AM to 3 PM)		0.0%	89.7%	2.8%	6.5%	1.0%
PM (3 PM to 6 AM)		0.1%	91.8%	1.4%	6.3%	0.4%

SR 0422 Traffic Data - 01/25/18 - Ramp U (Rt. 422 EB Off Ramp to Rt. 100 NB)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	4	0	0	0
1:00 AM	2:00 AM	0	3	0	0	0
2:00 AM	3:00 AM	0	6	1	2	0
3:00 AM	4:00 AM	0	5	1	1	0
4:00 AM	5:00 AM	0	7	0	2	0
5:00 AM	6:00 AM	0	24	2	1	0
6:00 AM	7:00 AM	0	24	1	0	3
7:00 AM	8:00 AM	0	35	0	7	0
8:00 AM	9:00 AM	0	50	5	6	3
9:00 AM	10:00 AM	0	32	3	4	5
10:00 AM	11:00 AM	0	35	5	3	2
11:00 AM	12:00 PM	0	49	4	3	2
12:00 PM	1:00 PM	0	50	2	4	2
1:00 PM	2:00 PM	0	48	1	5	1
2:00 PM	3:00 PM	0	53	2	6	5
3:00 PM	4:00 PM	0	71	0	5	1
4:00 PM	5:00 PM	0	59	2	2	0
5:00 PM	6:00 PM	0	79	1	0	0
6:00 PM	7:00 PM	0	32	1	2	0
7:00 PM	8:00 PM	0	38	1	2	0
8:00 PM	9:00 PM	0	34	0	0	0
9:00 PM	10:00 PM	0	28	1	1	0
10:00 PM	11:00 PM	0	15	0	2	0
11:00 PM	12:00 AM	0	8	0	0	0
AM (6 AM to 3 PM)		0.0%	81.8%	4.9%	8.0%	5.3%
PM (3 PM to 6 AM)		0.0%	90.3%	3.1%	6.5%	0.1%

SR 0422 Traffic Data - 01/25/18 - Ramp O (SR 422 WB on ramp from PA 100 NB)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	8	0	0	0
1:00 AM	2:00 AM	0	8	0	0	0
2:00 AM	3:00 AM	0	7	0	0	0
3:00 AM	4:00 AM	0	4	2	0	2
4:00 AM	5:00 AM	0	10	1	1	0
5:00 AM	6:00 AM	0	9	4	1	1
6:00 AM	7:00 AM	0	43	10	0	1
7:00 AM	8:00 AM	0	59	6	1	0
8:00 AM	9:00 AM	0	41	10	4	1
9:00 AM	10:00 AM	0	38	6	6	2
10:00 AM	11:00 AM	0	43	5	7	3
11:00 AM	12:00 PM	1	47	12	6	1
12:00 PM	1:00 PM	0	55	11	1	4
1:00 PM	2:00 PM	0	77	8	3	2
2:00 PM	3:00 PM	0	69	13	3	1
3:00 PM	4:00 PM	0	101	18	2	0
4:00 PM	5:00 PM	0	117	14	2	1
5:00 PM	6:00 PM	0	111	9	0	0
6:00 PM	7:00 PM	0	73	10	2	0
7:00 PM	8:00 PM	0	68	6	0	0
8:00 PM	9:00 PM	0	55	6	1	0
9:00 PM	10:00 PM	0	35	1	1	0
10:00 PM	11:00 PM	0	14	2	1	0
11:00 PM	12:00 AM	0	15	2	0	0
AM (6 AM to 3 PM)		0.2%	78.1%	13.7%	5.5%	2.6%
PM (3 PM to 6 AM)		0.0%	85.9%	9.9%	2.0%	2.2%

SR 0422 Traffic Data - 01/25/18 - Hanover Street						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	22	0	0	0
1:00 AM	2:00 AM	0	22	0	0	0
2:00 AM	3:00 AM	0	27	0	1	1
3:00 AM	4:00 AM	0	29	1	0	1
4:00 AM	5:00 AM	0	116	3	5	0
5:00 AM	6:00 AM	0	263	7	4	0
6:00 AM	7:00 AM	2	506	19	10	3
7:00 AM	8:00 AM	4	669	17	11	9
8:00 AM	9:00 AM	1	543	16	17	1
9:00 AM	10:00 AM	0	463	15	15	0
10:00 AM	11:00 AM	0	463	14	11	0
11:00 AM	12:00 PM	0	502	16	28	1
12:00 PM	1:00 PM	3	481	15	19	1
1:00 PM	2:00 PM	1	497	12	14	1
2:00 PM	3:00 PM	1	643	16	21	5
3:00 PM	4:00 PM	0	796	20	14	4
4:00 PM	5:00 PM	10	796	14	16	2
5:00 PM	6:00 PM	6	732	14	15	0
6:00 PM	7:00 PM	0	422	5	6	0
7:00 PM	8:00 PM	0	322	4	4	0
8:00 PM	9:00 PM	0	267	5	5	0
9:00 PM	10:00 PM	0	189	2	7	0
10:00 PM	11:00 PM	0	87	0	1	0
11:00 PM	12:00 AM	0	71	1	1	0
AM (6 AM to 3 PM)		0.2%	93.7%	2.8%	2.9%	0.4%
PM (3 PM to 6 AM)		0.1%	96.3%	1.4%	1.7%	0.5%

SR 0422 Traffic Data - 01/25/18 - RAMP N (422 EB On Ramp from Hanover St)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	13	0	0	0
1:00 AM	2:00 AM	0	8	0	1	0
2:00 AM	3:00 AM	0	9	0	1	0
3:00 AM	4:00 AM	0	13	0	0	0
4:00 AM	5:00 AM	0	53	2	0	0
5:00 AM	6:00 AM	0	157	3	1	0
6:00 AM	7:00 AM	0	225	5	1	0
7:00 AM	8:00 AM	0	287	4	2	1
8:00 AM	9:00 AM	1	229	6	1	0
9:00 AM	10:00 AM	0	182	6	0	0
10:00 AM	11:00 AM	1	181	13	6	1
11:00 AM	12:00 PM	0	163	8	3	1
12:00 PM	1:00 PM	2	233	4	4	1
1:00 PM	2:00 PM	0	203	7	1	1
2:00 PM	3:00 PM	1	193	4	0	1
3:00 PM	4:00 PM	0	265	8	0	1
4:00 PM	5:00 PM	1	206	7	1	0
5:00 PM	6:00 PM	1	192	5	0	0
6:00 PM	7:00 PM	0	124	2	0	0
7:00 PM	8:00 PM	1	104	2	0	0
8:00 PM	9:00 PM	0	112	4	0	0
9:00 PM	10:00 PM	0	55	1	0	0
10:00 PM	11:00 PM	0	42	1	1	0
11:00 PM	12:00 AM	0	20	0	0	0
AM (6 AM to 3 PM)		0.2%	95.5%	3.0%	0.9%	0.3%
PM (3 PM to 6 AM)		0.1%	96.5%	1.7%	1.6%	0.0%

SR 0422 Traffic Data - 01/25/18 - RAMP M (SR 422 WB off ramp at Hanover Street)						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	28	0	0	0
1:00 AM	2:00 AM	0	12	0	0	0
2:00 AM	3:00 AM	0	8	0	1	0
3:00 AM	4:00 AM	0	10	0	0	0
4:00 AM	5:00 AM	0	15	0	0	2
5:00 AM	6:00 AM	0	46	3	0	1
6:00 AM	7:00 AM	0	115	5	1	1
7:00 AM	8:00 AM	0	279	9	1	1
8:00 AM	9:00 AM	0	256	15	8	1
9:00 AM	10:00 AM	0	260	12	1	2
10:00 AM	11:00 AM	0	232	15	5	0
11:00 AM	12:00 PM	0	217	8	2	3
12:00 PM	1:00 PM	2	264	11	6	4
1:00 PM	2:00 PM	0	230	9	3	1
2:00 PM	3:00 PM	1	265	14	4	2
3:00 PM	4:00 PM	0	406	13	2	1
4:00 PM	5:00 PM	0	354	15	0	0
5:00 PM	6:00 PM	1	414	19	0	1
6:00 PM	7:00 PM	0	269	5	0	0
7:00 PM	8:00 PM	0	207	6	1	0
8:00 PM	9:00 PM	0	139	1	0	0
9:00 PM	10:00 PM	0	93	0	0	0
10:00 PM	11:00 PM	0	71	1	1	0
11:00 PM	12:00 AM	0	52	1	1	0
AM (6 AM to 3 PM)		0.1%	93.6%	4.3%	1.3%	0.7%
PM (3 PM to 6 AM)		0.0%	96.3%	1.7%	1.0%	0.9%

SR 0422 Traffic Data - 01/25/18 - SR 0422 EB						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	111	0	5	0
1:00 AM	2:00 AM	0	63	5	8	0
2:00 AM	3:00 AM	0	56	2	3	0
3:00 AM	4:00 AM	0	53	17	12	0
4:00 AM	5:00 AM	0	115	6	18	0
5:00 AM	6:00 AM	0	311	18	19	0
6:00 AM	7:00 AM	0	731	26	24	1
7:00 AM	8:00 AM	0	847	38	27	2
8:00 AM	9:00 AM	0	604	34	25	3
9:00 AM	10:00 AM	0	484	48	41	1
10:00 AM	11:00 AM	0	495	49	40	0
11:00 AM	12:00 PM	1	562	58	54	0
12:00 PM	1:00 PM	0	604	54	32	0
1:00 PM	2:00 PM	0	716	55	28	0
2:00 PM	3:00 PM	0	972	47	27	4
3:00 PM	4:00 PM	0	1362	29	16	0
4:00 PM	5:00 PM	0	1460	17	18	1
5:00 PM	6:00 PM	0	1346	9	3	3
6:00 PM	7:00 PM	0	929	11	12	3
7:00 PM	8:00 PM	0	740	4	6	0
8:00 PM	9:00 PM	0	578	4	7	0
9:00 PM	10:00 PM	0	444	3	6	0
10:00 PM	11:00 PM	0	289	5	4	0
11:00 PM	12:00 AM	0	192	3	5	0
AM (6 AM to 3 PM)		0.0%	88.8%	6.3%	4.7%	0.2%
PM (3 PM to 6 AM)		0.0%	92.4%	3.3%	4.3%	0.0%

SR 0422 Traffic Data - 01/25/18 - SR 0422 WB						
Start	End	Motorcycles	Automobiles	Medium Trucks	Heavy Trucks	Buses
12:00 AM	1:00 AM	0	39	6	10	0
1:00 AM	2:00 AM	0	45	5	7	0
2:00 AM	3:00 AM	0	55	11	13	1
3:00 AM	4:00 AM	0	141	11	18	0
4:00 AM	5:00 AM	0	510	14	18	2
5:00 AM	6:00 AM	0	1181	53	43	0
6:00 AM	7:00 AM	0	1327	36	25	2
7:00 AM	8:00 AM	0	1339	37	38	1
8:00 AM	9:00 AM	0	1094	70	40	1
9:00 AM	10:00 AM	0	739	40	25	1
10:00 AM	11:00 AM	0	608	51	32	0
11:00 AM	12:00 PM	0	580	50	39	0
12:00 PM	1:00 PM	0	588	42	32	0
1:00 PM	2:00 PM	0	651	22	22	5
2:00 PM	3:00 PM	0	644	31	29	5
3:00 PM	4:00 PM	0	773	22	14	2
4:00 PM	5:00 PM	0	977	9	11	0
5:00 PM	6:00 PM	0	986	8	14	1
6:00 PM	7:00 PM	0	622	7	13	1
7:00 PM	8:00 PM	1	426	4	6	1
8:00 PM	9:00 PM	0	290	9	2	0
9:00 PM	10:00 PM	0	255	2	5	0
10:00 PM	11:00 PM	0	153	3	9	0
11:00 PM	12:00 AM	0	73	3	5	0
AM (6 AM to 3 PM)		0.0%	91.1%	5.0%	3.7%	0.2%
PM (3 PM to 6 AM)		0.0%	90.0%	4.2%	5.7%	0.2%

Table I-4 shows the non-uniform traffic distributions used in the scenarios for the 4- and 8-lane highways, while Table I-5 shows the traffic distributions for the 12-lane highway. These distributions were based on an analysis of the traffic data that were collected by the Volpe Center for the Phase 1 TNM Validation Study.

Table I-4. Non-uniform Traffic Distributions for 4- and 8-lane Facilities

With a Typical Truck Percentage in the Traffic Flow						
Facility:	4-lane		8-lane			
Lane:	1	2	1	2	3	4
Lane % MT+Bus	81.8	18.2	38.1	40.5	17.3	4.1
Lane % HT	76.9	23.1	49.4	35.8	11.8	3.1
Lane % Trucks	77.7	22.3	44.2	38.5	13.7	3.6
Lane % Car	53.0	47.0	30.4	26.5	29.1	14.0
% Total Traffic	55.3	44.7	31.5	27.6	27.8	13.1

With a High Truck Percentage in the Traffic Flow						
Facility:	4-lane		8-lane			
Lane:	1	2	1	2	3	4
Lane % MT+Bus	82.8	17.2	49.0	32.3	14.9	3.8
Lane % HT	74.7	25.3	38.1	52.7	9.0	0.2
Lane % Trucks	76.0	24.0	41.6	45.8	11.2	1.4
Lane % Car	55.3	44.7	32.4	26.5	27.4	13.7
% Total Traffic	60.6	39.4	33.7	29.6	25.0	11.7

Table I-5. Non-uniform Traffic Distributions for 12-lane Facilities

With a Typical Truck Percentage in the Traffic Flow						
Lane:	1	2	3	4	5	6
Lane % MT+Bus	17.8	18.1	34.9	25.7	1.9	1.7
Lane % HT	8.3	17.1	37.1	34.1	1.9	1.6
Lane % Trucks	10.8	17.5	36.8	31.3	1.9	1.7
Lane % Car	12.1	16.0	22.4	21.6	15.1	12.9
% Total Traffic	12.0	16.1	23.7	22.3	13.9	11.9

Appendix G

Equivalent Residential Unit Calculations and Coordination

Category B Exterior Uses	Swim Clubs	Athletic Facility			Playground		
Name of Category C Site	Laurelwood Swim Club	Coventry Little League	River Bend Park (Soccer)	River Bend Park (Baseball)	Bryton Park	Penn St Courts	Riverside Park
Average Event Attendance of Outside Use Area	-	86.81318681	34	50		-	-
Average Time Used by Each Person Per Event (hours)		2	4	4			
Average Number of Events per Event Day		14.57142857	1.71	0.85			
Capacity of Site	800	-	-	-	1	1	1
Average Use Factor	0.65625						
Hours Available Per Day	9						
Average Time Used by Each Person Per Day (hours)	-	2529.984301			50	200	150
Persons Using Per Day							
Person-Hours Per Day	4725		232.56	170	50	200	150
Days Per Year Used	90	210	180	60	365	365	300
Person-Hours Used Per Year = I x J	425250	531296.7033	41860.8	10200	18250	73000	45000
Equivalent Residential Units (ERU) = Row K Value divided by 13578	31.32	39.13	3.08	0.75	1.34	5.38	3.31
Category B Exterior Uses	Cemetery (Case 2)						
Name of Category C Site	Mt Zion Cemetery						
Average Event Attendance of Outside Use Area	2						
Average Time Used by Each Person Per Event (hours)	1						
Capacity of Site	9976						
Days Per Year Used	1						
Person-Hours Used Per Year = I x J	19952						
Equivalent Residential Units (ERU) = Row K Value divided by 13578	1.469435852						
grid points within overall land use activity area	33						
Apply this value equally to each grid point in 130' grid	0.04						

Cheang, Miles

From: Kevin Kirby <kkirby@pgsd.org>
Sent: Wednesday, February 26, 2020 5:04 PM
To: Margherita, Steven
Subject: Re: [EXTERNAL]

no problem, thank you

On Wed, Feb 26, 2020 at 4:57 PM Margherita, Steven <Steven.Margherita@jacobs.com> wrote:

I think this covers everything, thank you for your help Kevin.

Steven Margherita | Urban Planner

862-242-7393 | steven.margherita@jacobs.com

From: Kevin Kirby <kkirby@pgsd.org>
Sent: Wednesday, February 26, 2020 4:56 PM
To: Margherita, Steven <Steven.Margherita@jacobs.com>; CLL Board of Directors <coventrylittleleague@gmail.com>
Subject: [EXTERNAL]

Hi Steven,

I am responding to the email below for Coventry LL.

Hello,

My name is Steven and I would like to know if I can get some information regarding events, games, and attendance at the baseball fields at 333 S Penn St, Pottstown, PA 19465. I work for Jacobs Engineering on behalf of the Pennsylvania Department of Transportation and information about how many and how often people use the baseball fields will help us understand how affected the people who use it are by the noise from the near by highways. Specifically if I could learn the average event attendance, the average length of each event, the average number of events per day, and the days per year the park is used, event meaning anytime the fields are used, for practice or baseball games. Exact numbers are not a necessity if they are not available, an estimate will do if needed.

We have 4 baseball/softball fields that are utilized from March-October

During the week we have approximately 150 people per day at the fields for various practices.

On weekends we have closer to 1000 or more people there for games throughout the days.

Practices are 90 minutes and there are 2-3 practices per night on each field.

There are 5-8 games per weekend day on each field, each game has a 2 hour time limit.

Please let me know if you need anything else.

--

Thank you,

Kevin F. Kirby

Assistant Principal

Pottsgrove Middle School

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Thank you,

Kevin F. Kirby

Assistant Principal

Pottsgrove Middle School

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Cheang, Miles

From: jeffrokicki0502@comcast.net
Sent: Sunday, March 8, 2020 8:13 PM
To: Margherita, Steven
Subject: [EXTERNAL] RE: swimclub questions

Steven,

Thank you once again for reaching out to us regarding the ongoing upgrading and construction on 422.

As a little background Laurelwood Swim Club has been serving the community for 60 years. We have grown over the years and remain one of the healthiest swim clubs in the area. We currently have over 300 families that are members or approx. 1500 individuals.

At the present time we average on a weekday between 200 to 400 people a day visiting our club. On weekends it averages 400 to 800 people visiting on a daily basis. We also host swim meets with other area pools.

It is our understanding that 422 could move closer to the property line of the club by 1 to 2 feet and I would assume that the construction, as it did further west, would take down some of trees between the 422 and the club. If those two items were to happen, it would negatively affect the operations of the club as the vision of the cars speeding by and the noise would rise to a level that could very well affect the clubs membership.

I am happy to discuss it with you if you need further information. If you could keep us up to date of what is occurring with the construction we would greatly appreciate it.

Thank you for your time.

Jeff Rokicki
Jeffrokicki0502@comcast.net
(610) 310-1096

From: Margherita, Steven <Steven.Margherita@jacobs.com>
Sent: Wednesday, March 4, 2020 4:46 PM
To: President@laurelwoodswimclub.com; membership@laurelwoodswimclub.com; treasurer@laurelwoodswimclub.com
Subject: swimclub questions

Hello,

My name is Steven and I am working on behalf of the Pennsylvania Department of Transportation and I had a few questions concerning the usage of the Laurelwood Swim Club. In the future there may be some renovations of the highway adjacent to the swim club and in order to better understand what impact traffic noise has on the swim club I would need to know what the maximum capacity is as well as how many people use the swim club on an average day in season. This information will be used to determine if the area around the swim club may be in need of a wall to mitigate traffic noise.

Thank you for your assistance,

Steven Margherita | Urban Planner
862-242-7393 | steven.margherita@jacobs.com

Riverbend Park Rentals 2019

Riverbend Park (3 fields)50+ people	June 20, 21	Pottstown Rumble
Anderson Fields 30+ people	3/12-5/14	Coventry Rugby Wildcats
Scherfel/Anderson 25+ people	3/25-5/6	West Mont Christian
Anderson/Batdorf 50+ people	4/6/19	Perkiomen Valley Baseball
Anderson, Deegan, Batdorf 50+ people	4/27/19	Softball Tournament
Riverbend Batdorf 50+ people	4/5-6/7	Storm Youth Baseball
Riverbend Park (3 fields) 50+ people	5/11/19	Koley Wunder Softball Tourn
Riverbend Batdorf & Anderson 50+ people	8/11/19	Zach Ambruch ball games
Deegan/Batdorf/Anderson 40+ people	March-May	Coventry Soccer
Deegan/Batdorf/Anderson40+ people	Sept/Nov	Coventry Soccer



Cheang, Miles

From: Denise Diehl <admin@northcoventry.us>
Sent: Wednesday, March 4, 2020 10:26 AM
To: Margherita, Steven
Subject: [EXTERNAL] RE: Riverbend Park rentals for 2019

Between all of the renters all 3 fields are usually booked 6 days a week and also sometimes on Sundays for makeup games from rain.

Denise Diehl
North Coventry Township
845 S Hanover Street
Pottstown, PA 19465

610-323-1694
Fax 610-323-7239

From: Margherita, Steven [mailto:Steven.Margherita@jacobs.com]
Sent: Wednesday, March 04, 2020 10:23 AM
To: Denise Diehl <admin@northcoventry.us>
Subject: RE: Riverbend Park rentals for 2019

Hello Denise,
Thanks you for helping me out with the park numbers, this will be a big help for me. Just to clarify, for the events that take place over multiple days or months, how often are they happening? For example Coventry Soccer meets from March to May and is attended by 40+ people, but on which days? Once every week? Thanks again for helping me out.

Steven Margherita | Urban Planner
862-242-7393 | steven.margherita@jacobs.com

From: Denise Diehl <admin@northcoventry.us>
Sent: Wednesday, March 4, 2020 9:13 AM
To: Margherita, Steven <Steven.Margherita@jacobs.com>
Subject: [EXTERNAL] Riverbend Park rentals for 2019

Denise Diehl
North Coventry Township
845 S Hanover Street
Pottstown, PA 19465

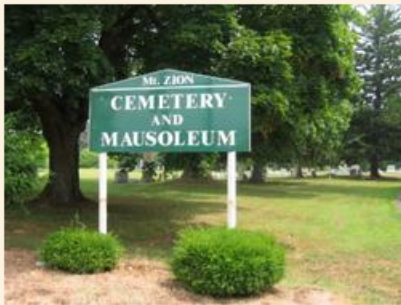


Photo added by [Diana in Pelham, AL](#)

Mount Zion Cemetery and Mausoleum

LOCATION 225 East Schuylkill Road
North Coventry Township, Chester County, Pennsylvania, USA [Show Map](#)

PHONE 610-326-1549

WEBSITE aftercareplanning.com/mt-zion-cemetery-mausoleum/

MEMORIALS [9,977 added](#) (78% photographed)

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[CEMETERY](#) [PHOTOS 7](#) [MAP](#)

There is confusion because the cemetery has a Pottstown, Pa mailing address. The town is seated in Montgomery County, but the actual burials are in Chester County. The cemetery is on the Chester County side of the Schuylkill River which is the deliniation between the counties.

Mt. Zion Cemetery is located in North Coventry Township in Pottstown, Pa.

Postal address:
225 East Schuylkill Road
Pottstown
Montgomery County
Pennsylvania USA
Postal Code: 19465

Search Memorials in Mount Zion Cemetery and Mausoleum

First Name

Middle Name

Last Name

Year Born

Exact ▾

Year Died

Exact ▾

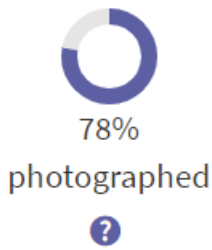
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[Tutorials](#)

Cheang, Miles

From: Denise Diehl <admin@northcoventry.us>
Sent: Monday, November 23, 2020 9:41 AM
To: Margherita, Steven
Subject: [EXTERNAL] RE: parcel question

Steven, we do not have any building plans or permits for this parcel. The only thing in our system from this parcel was back in 1988 a denial to place a billboard on this parcel because it did not meet the set back requirements.

Thanks I hope this helps.

Have a great Thanksgiving and stay SAFE.

Denise Diehl
North Coventry Township
845 S Hanover Street
Pottstown, PA 19465

610-323-1694
Fax 610-323-7239

From: Margherita, Steven <Steven.Margherita@jacobs.com>
Sent: Friday, November 20, 2020 4:23 PM
To: Denise Diehl <admin@northcoventry.us>
Subject: parcel question

Denise,

Thank you again for all of your help so far. There is one more parcel we would like some information on. Attached is a picture of the parcel in question and the UPI is 17-3-17. Essentially what we need to know is still if there are any permits pulled for building on the parcels, but also any other information on the parcel that you could provide would also be very helpful. Basically what we are wondering is the status of the structure on the left side of the parcel in the attached image. When we visited North Coventry this building seemed to be abandoned and we just need confirmation that this still the case and that there are no plans for that to change.

Thanks,

Steven Margherita | Urban Planner
steven.margherita@jacobs.com

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Cheang, Miles

From: Denise Diehl <admin@northcoventry.us>
Sent: Wednesday, November 18, 2020 4:09 PM
To: Margherita, Steven
Subject: [EXTERNAL] RE: Building permits

I have checked out data base and there have been no permits or SALDO for any of the parcels you listed below.

So to my knowledge they are all still vacant properties.

Denise Diehl
North Coventry Township
845 S Hanover Street
Pottstown, PA 19465

610-323-1694
Fax 610-323-7239

From: Margherita, Steven <Steven.Margherita@jacobs.com>
Sent: Wednesday, November 18, 2020 3:57 PM
To: Denise Diehl <admin@northcoventry.us>
Subject: RE: Building permits

Denise,

We already know the current zoning information/classification of the parcels throughout our project area. What we need to confirm is:

- Are the currently vacant parcels that we are inquiring about still vacant
- Can you confirm that no permits have been pulled to build on the parcels for future development.

If we can get this definitively answered we can move forward with our project.

Thank you for your help,
Steven

From: Denise Diehl <admin@northcoventry.us>
Sent: Wednesday, November 18, 2020 3:31 PM
To: Margherita, Steven <Steven.Margherita@jacobs.com>
Subject: [EXTERNAL] RE: Building permits

Steven, I would be able to give you the property addresses and the zoning district, but I am unable to find anything in our data base showing if any of the parcels that you mentioned are able to have future development. Do you want me to send you the property addresses and zoning districts?

Denise Diehl
North Coventry Township
845 S Hanover Street
Pottstown, PA 19465

610-323-1694
Fax 610-323-7239

From: mschwenk@ltlconsultants.com <mschwenk@ltlconsultants.com>
Sent: Tuesday, November 17, 2020 9:58 AM
To: Denise Diehl <admin@northcoventry.us>
Subject: FW: Building permits

Michael R. Schwenk
Building Code Official
Cert. No.: 002979

LTL Consultants, LTD.
One Town Centre Drive
P.O. Box 241
Oley, PA 19547

Cell No.: 570-573-9975

From: Margherita, Steven <Steven.Margherita@jacobs.com>
Sent: Monday, November 16, 2020 10:12 AM
To: mschwenk@ltlconsultants.com
Subject: Building permits

Hello,

I am working for Jacobs Engineering Group on behalf of the Pennsylvania Dept of Transportation on a project that will redesign the intersection of highways US 422 and PA 100 in North Coventry. I have questions concerning some vacant parcels I hope you could help answer. I have a list of parcel UPIs and if possible I would like to use those with whatever records you have to determine if any of them are permitted for future development.

UPI
17-3D-83
17-3D-146
17-3D-62
17-3-26
17-3C-158
17-3C-151
17-3C-148
17-3-31

17-3D-154
17-3D-153
17-3D-152
17-3D-151
17-3D-107.1
17-3C-123
17-3D-150
17-3D-138
17-3B-25
17-3B-44
17-3C-63
17-3-4
17-3-2.2
17-3-3.5
17-3-3.2
17-3C-25
17-3C-39
17-3C-4.1
17-3C-36
17-3B-2
17-3C-4
17-3-34.1
17-3-23
17-3C-91
17-3C-92
17-3D-1
17-3-21
17-3-29.1
17-3G-20.1

Any help you could provide me would be very much appreciated.

Thank you,

Steven Margherita | Urban Planner
steven.margherita@jacobs.com

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Appendix H

Warranted, Feasible, and Reasonable Worksheets

**Highway Traffic Noise Abatement
Warranted, Feasible, and Reasonable Worksheet – Noise Wall**

Date	6/30/2023
Project Name	State Route (SR) 0422 Pottstown Bypass Express Reconstruction Project
County	Chester
SR, Section	SR 0422, Section M2B
Community Name and/or NSA #	NSA A
Noise Wall Identification (i.e., Wall 1)	Barrier A

General

1. Type of project (new location, reconstruction, etc.):

Reconstruction

2. Total number of impacted receptor units in community

Category A units impacted	0
Category B units impacted	16
Category C units impacted	31.3
Category D units impacted (if interior analysis required)	0
Category E units impacted	0

Warranted

1. Community Documentation

a. Date community was permitted (for new developments or developments planned for or under construction)

N/A

b. Date of approval for the Categorical Exclusion (CE), Record of Decision (ROD), or Finding of No Significant Impact (FONSI):

CEE 5/17/2006
CE Re-Evaluation 12/22/2010

c. Does the date in 1.a precede the date in 1.b? If yes, proceed to Warranted Item 2. If no, consideration of noise abatement is not warranted. Proceed to “Decision” block and answer “no” to warranted question. As the reason for this decision, state that “Community was permitted after the date of approval of *CE, ROD, or FONSI, as appropriate.*”

N/A	Yes	N/A	No
-----	-----	-----	----

2. Criteria requiring consideration of noise abatement (note N/A if category is not impacted or present or analysis not required). A “yes” answer to any of the following three questions requires the consideration of noise abatement.

a. With the proposed project, are design year noise levels predicted to approach or exceed the NAC level(s) in Table 1?

✓	Yes	No
---	-----	----

b. With the proposed project, is there predicted to be a substantial design year noise level increase of 10 dB(A) or more at Activity Category A, B, C, D, or E receptor(s)?

Yes	✓	No
-----	---	----

c. With the proposed project, are design year noise levels predicted to be less than existing noise levels, but still approach or exceed the NAC levels in Table 1 for the relevant Activity Category?

Yes	✓	No
-----	---	----

Feasibility – Questions 1c through 7 must all be answered “yes” for a noise barrier to be determined to be feasible.

1. Impacted receptor units

a. Total number of impacted receptor units:

47.3

b. Percentage of impacted receptor units receiving 5 dB(A) or more insertion loss:

100%

c. Is the percentage 50 or greater?

✓

Yes

No

2. Can the noise wall be designed and physically constructed at the proposed location?

✓

Yes

No

3. Can the noise wall be constructed without causing a safety problem?

✓

Yes

No

4. Can the noise wall be constructed without restricting access to vehicular or pedestrian travel?

✓

Yes

No

5. Can the noise wall be constructed in a manner that allows for access for required maintenance and inspection operations?

✓

Yes

No

6. Can the noise wall be constructed in a manner that permits utilities to function in a normal manner?

✓

Yes

No

7. Can the noise wall be constructed in a manner that permits drainage features to function in a normal manner?

✓

Yes

No

Reasonableness

1. Community Desires Related to the Barrier

a. Do at least 50 percent of the responding benefited receptor unit owner(s) and renters desire the noise wall? If yes, continue with Reasonableness questions. If no, the noise wall can be considered not to be reasonable. Proceed to “Decision” block and answer “no” to reasonableness question. As the reason for this decision, state that “The majority of the benefited receptor unit owners do not desire the noise wall.”

TBD

Yes

TBD

No

2. Square Footage Per Benefited Receptor (SF/BR) Evaluation

a. Area (SF) of the proposed noise wall

26,529

b. Number of benefited receptor units (any unit receiving 5 dB(A) or more insertion loss)

62.3

c. $SF/BR = 2a/2b$

426

d. Is 2c less than or equal to the MaxSF/BR value of 2000?

✓

Yes

No

3. Noise Reduction Design Goals (Activity Categories A, B, C, and E) A “yes” answer is required to Question 3a. for the noise wall to be determined to be reasonable. Questions 3b through 3e represent desirable goals that need not be met for a noise wall to be determined reasonable. However, they must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|--------------|------------------|
| a. Does the noise wall reduce design year exterior_noise levels by at least 7 dB(A) for at least one benefited receptor? | <u>✓</u> Yes | <u> </u> No |
| b. Does the noise wall provide an insertion loss of at least 7 dB(A) for more receptors than required under 3a.while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u>✓</u> Yes | <u> </u> No |
| c. Does the noise wall provide insertion losses of greater than 7 dB(A) while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u>✓</u> Yes | <u> </u> No |
| d. Does the noise wall reduce future exterior levels to the low-60-decibel range (60-63) for Category B and C receptors and the upper-60 dB(A) range (65-68) for Category E receptors? | <u>✓</u> Yes | <u> </u> No |
| e. Does the noise wall reduce design year noise levels back to existing levels? | <u>✓</u> Yes | <u> </u> No |

4. Noise Reduction Design Goals (Activity Category D) A “yes” answer is required to Question 4a. for the barrier to be determined to be reasonable. Question 4b represents a desirable goal that need not be met for a noise wall to be determined reasonable. However, this goal must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|----------------|---------------|
| a. Does noise wall reduce design year interior_noise levels by at least 7 dB(A) for the facility’s analysis point? | <u>N/A</u> Yes | <u>N/A</u> No |
| b. While conforming to the MaxSF/BR criteria and justified by a “point of diminishing returns’ evaluation, does the noise wall provide an interior insertion loss above the 7 dB(A) minimum | <u>N/A</u> Yes | <u>N/A</u> No |

Decision

Is the Noise Wall WARRANTED?

✓ Yes

 No

Is the Noise Wall FEASIBLE?

✓ Yes

 No

Is the Noise Wall REASONABLE?

✓ Yes

 No

Additional Reasons for Decision:

Responsible/Qualified Individuals Making the Above Decisions

PennDOT, Engineering District Environmental Manager

Date

Miles Cheang, Traffic Noise Abatement Specialist, Jacobs Engineering

6/30/2023

Qualified Professional Performing the Analysis
(name, title, and company name)

Date

**Highway Traffic Noise Abatement
Warranted, Feasible, and Reasonable Worksheet – Noise Wall**

Date	6/30/2023
Project Name	State Route (SR) 0422 Pottstown Bypass Express Reconstruction Project
County	Chester
SR, Section	SR 0422, Section M2B
Community Name and/or NSA #	NSA B
Noise Wall Identification (i.e., Wall 1)	Barrier B

General

1. Type of project (new location, reconstruction, etc.):	Reconstruction
2. Total number of impacted receptor units in community	
Category A units impacted	0
Category B units impacted	1
Category C units impacted	1.5
Category D units impacted (if interior analysis required)	0
Category E units impacted	0

Warranted

1. Community Documentation		
a. Date community was permitted (for new developments or developments planned for or under construction)	N/A	
b. Date of approval for the Categorical Exclusion (CE), Record of Decision (ROD), or Finding of No Significant Impact (FONSI):	CEE 5/17/2006 CE Re-Evaluation 12/22/2010	
c. Does the date in 1.a precede the date in 1.b? If yes, proceed to Warranted Item 2. If no, consideration of noise abatement is not warranted. Proceed to “Decision” block and answer “no” to warranted question. As the reason for this decision, state that “Community was permitted after the date of approval of <i>CE, ROD, or FONSI, as appropriate.</i> ”	N/A Yes	N/A No
2. Criteria requiring consideration of noise abatement (note N/A if category is not impacted or present or analysis not required). A “yes” answer to any of the following three questions requires the consideration of noise abatement.		
a. With the proposed project, are design year noise levels predicted to approach or exceed the NAC level(s) in Table 1?	✓ Yes	_____ No
b. With the proposed project, is there predicted to be a substantial design year noise level increase of 10 dB(A) or more at Activity Category A, B, C, D, or E receptor(s)?	_____ Yes	✓ No
c. With the proposed project, are design year noise levels predicted to be less than existing noise levels, but still approach or exceed the NAC levels in Table 1 for the relevant Activity Category?	_____ Yes	✓ No

Feasibility – Questions 1c through 7 must all be answered “yes” for a noise barrier to be determined to be feasible.

1. Impacted receptor units

a. Total number of impacted receptor units:

2.5

b. Percentage of impacted receptor units receiving 5 dB(A) or more insertion loss:

60%

c. Is the percentage 50 or greater?

✓

Yes

No

2. Can the noise wall be designed and physically constructed at the proposed location?

✓

Yes

No

3. Can the noise wall be constructed without causing a safety problem?

✓

Yes

No

4. Can the noise wall be constructed without restricting access to vehicular or pedestrian travel?

✓

Yes

No

5. Can the noise wall be constructed in a manner that allows for access for required maintenance and inspection operations?

✓

Yes

No

6. Can the noise wall be constructed in a manner that permits utilities to function in a normal manner?

✓

Yes

No

7. Can the noise wall be constructed in a manner that permits drainage features to function in a normal manner?

✓

Yes

No

Reasonableness

1. Community Desires Related to the Barrier

a. Do at least 50 percent of the responding benefited receptor unit owner(s) and renters desire the noise wall? If yes, continue with Reasonableness questions. If no, the noise wall can be considered not to be reasonable. Proceed to “Decision” block and answer “no” to reasonableness question. As the reason for this decision, state that “The majority of the benefited receptor unit owners do not desire the noise wall.”

N/A

Yes

N/A

No

2. Square Footage Per Benefited Receptor (SF/BR) Evaluation

a. Area (SF) of the proposed noise wall

13,898

b. Number of benefited receptor units (any unit receiving 5 dB(A) or more insertion loss)

1.5

c. $SF/BR = 2a/2b$

9,265

d. Is 2c less than or equal to the MaxSF/BR value of 2000?

Yes

✓

No

3. Noise Reduction Design Goals (Activity Categories A, B, C, and E) A “yes” answer is required to Question 3a. for the noise wall to be determined to be reasonable. Questions 3b through 3e represent desirable goals that need not be met for a noise wall to be determined reasonable. However, they must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|-------------------|------------------|
| a. Does the noise wall reduce design year exterior_noise levels by at least 7 dB(A) for at least one benefited receptor? | <u>✓</u> Yes | <u> </u> No |
| b. Does the noise wall provide an insertion loss of at least 7 dB(A) for more receptors than required under 3a.while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u> </u> Yes | <u>✓</u> No |
| c. Does the noise wall provide insertion losses of greater than 7 dB(A) while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u> </u> Yes | <u>✓</u> No |
| d. Does the noise wall reduce future exterior levels to the low-60-decibel range (60-63) for Category B and C receptors and the upper-60 dB(A) range (65-68) for Category E receptors? | <u>✓</u> Yes | <u> </u> No |
| e. Does the noise wall reduce design year noise levels back to existing levels? | <u>✓</u> Yes | <u> </u> No |

4. Noise Reduction Design Goals (Activity Category D) A “yes” answer is required to Question 4a. for the barrier to be determined to be reasonable. Question 4b represents a desirable goal that need not be met for a noise wall to be determined reasonable. However, this goal must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|----------------|---------------|
| a. Does noise wall reduce design year interior_noise levels by at least 7 dB(A) for the facility’s analysis point? | <u>N/A</u> Yes | <u>N/A</u> No |
| b. While conforming to the MaxSF/BR criteria and justified by a “point of diminishing returns’ evaluation, does the noise wall provide an interior insertion loss above the 7 dB(A) minimum | <u>N/A</u> Yes | <u>N/A</u> No |

Decision

Is the Noise Wall WARRANTED?

✓ Yes

 No

Is the Noise Wall FEASIBLE?

✓ Yes

 No

Is the Noise Wall REASONABLE?

 Yes

✓ No

Additional Reasons for Decision:

Responsible/Qualified Individuals Making the Above Decisions

PennDOT, Engineering District Environmental Manager

Date

Miles Cheang, Traffic Noise Abatement Specialist, Jacobs Engineering

6/30/2023

Qualified Professional Performing the Analysis
(name, title, and company name)

Date

**Highway Traffic Noise Abatement
Warranted, Feasible, and Reasonable Worksheet – Noise Wall**

Date	6/30/2023
Project Name	State Route (SR) 0422 Pottstown Bypass Express Reconstruction Project
County	Chester
SR, Section	SR 0422, Section M2B
Community Name and/or NSA #	NSA C
Noise Wall Identification (i.e., Wall 1)	Barrier C

General

1. Type of project (new location, reconstruction, etc.):	Reconstruction
2. Total number of impacted receptor units in community	
Category A units impacted	0
Category B units impacted	1
Category C units impacted	0
Category D units impacted (if interior analysis required)	0
Category E units impacted	0

Warranted

1. Community Documentation		
a. Date community was permitted (for new developments or developments planned for or under construction)	N/A	
b. Date of approval for the Categorical Exclusion (CE), Record of Decision (ROD), or Finding of No Significant Impact (FONSI):	CEE 5/17/2006 CE Re-Evaluation 12/22/2010	
c. Does the date in 1.a precede the date in 1.b? If yes, proceed to Warranted Item 2. If no, consideration of noise abatement is not warranted. Proceed to “Decision” block and answer “no” to warranted question. As the reason for this decision, state that “Community was permitted after the date of approval of <i>CE, ROD, or FONSI, as appropriate.</i> ”	N/A Yes	N/A No
2. Criteria requiring consideration of noise abatement (note N/A if category is not impacted or present or analysis not required). A “yes” answer to any of the following three questions requires the consideration of noise abatement.		
a. With the proposed project, are design year noise levels predicted to approach or exceed the NAC level(s) in Table 1?	✓ Yes	_____ No
b. With the proposed project, is there predicted to be a substantial design year noise level increase of 10 dB(A) or more at Activity Category A, B, C, D, or E receptor(s)?	_____ Yes	✓ No
c. With the proposed project, are design year noise levels predicted to be less than existing noise levels, but still approach or exceed the NAC levels in Table 1 for the relevant Activity Category?	_____ Yes	✓ No

Feasibility – Questions 1c through 7 must all be answered “yes” for a noise barrier to be determined to be feasible.

1. Impacted receptor units

a. Total number of impacted receptor units:

b. Percentage of impacted receptor units receiving 5 dB(A) or more insertion loss:

c. Is the percentage 50 or greater?

2. Can the noise wall be designed and physically constructed at the proposed location?

3. Can the noise wall be constructed without causing a safety problem?

4. Can the noise wall be constructed without restricting access to vehicular or pedestrian travel?

5. Can the noise wall be constructed in a manner that allows for access for required maintenance and inspection operations?

6. Can the noise wall be constructed in a manner that permits utilities to function in a normal manner?

7. Can the noise wall be constructed in a manner that permits drainage features to function in a normal manner?

		1
		100%
✓	Yes	No
✓	Yes	No
✓	Yes	No
✓	Yes	No
✓	Yes	No
✓	Yes	No
✓	Yes	No

Reasonableness

1. Community Desires Related to the Barrier

a. Do at least 50 percent of the responding benefited receptor unit owner(s) and renters desire the noise wall? If yes, continue with Reasonableness questions. If no, the noise wall can be considered not to be reasonable. Proceed to “Decision” block and answer “no” to reasonableness question. As the reason for this decision, state that “The majority of the benefited receptor unit owners do not desire the noise wall.”

N/A	Yes	N/A	No
-----	-----	-----	----

2. Square Footage Per Benefited Receptor (SF/BR) Evaluation

a. Area (SF) of the proposed noise wall

b. Number of benefited receptor units (any unit receiving 5 dB(A) or more insertion loss)

c. $SF/BR = 2a/2b$

d. Is 2c less than or equal to the MaxSF/BR value of 2000?

	4,375
	1.00
	4,375
Yes	✓ No

3. Noise Reduction Design Goals (Activity Categories A, B, C, and E) A “yes” answer is required to Question 3a. for the noise wall to be determined to be reasonable. Questions 3b through 3e represent desirable goals that need not be met for a noise wall to be determined reasonable. However, they must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|-------------------|------------------|
| a. Does the noise wall reduce design year exterior_noise levels by at least 7 dB(A) for at least one benefited receptor? | <u>✓</u> Yes | <u> </u> No |
| b. Does the noise wall provide an insertion loss of at least 7 dB(A) for more receptors than required under 3a.while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u> </u> Yes | <u>✓</u> No |
| c. Does the noise wall provide insertion losses of greater than 7 dB(A) while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u> </u> Yes | <u>✓</u> No |
| d. Does the noise wall reduce future exterior levels to the low-60-decibel range (60-63) for Category B and C receptors and the upper-60 dB(A) range (65-68) for Category E receptors? | <u>✓</u> Yes | <u> </u> No |
| e. Does the noise wall reduce design year noise levels back to existing levels? | <u>✓</u> Yes | <u> </u> No |

4. Noise Reduction Design Goals (Activity Category D) A “yes” answer is required to Question 4a. for the barrier to be determined to be reasonable. Question 4b represents a desirable goal that need not be met for a noise wall to be determined reasonable. However, this goal must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|----------------|---------------|
| a. Does noise wall reduce design year interior_noise levels by at least 7 dB(A) for the facility’s analysis point? | <u>N/A</u> Yes | <u>N/A</u> No |
| b. While conforming to the MaxSF/BR criteria and justified by a “point of diminishing returns’ evaluation, does the noise wall provide an interior insertion loss above the 7 dB(A) minimum | <u>N/A</u> Yes | <u>N/A</u> No |

Decision

Is the Noise Wall WARRANTED?

✓ Yes

 No

Is the Noise Wall FEASIBLE?

✓ Yes

 No

Is the Noise Wall REASONABLE?

 Yes

✓ No

Additional Reasons for Decision:

Responsible/Qualified Individuals Making the Above Decisions

PennDOT, Engineering District Environmental Manager

Date

Miles Cheang, Traffic Noise Abatement Specialist, Jacobs Engineering

6/30/2023

Qualified Professional Performing the Analysis
(name, title, and company name)

Date

**Highway Traffic Noise Abatement
Warranted, Feasible, and Reasonable Worksheet – Noise Wall**

Date	6/30/2023
Project Name	State Route (SR) 0422 Pottstown Bypass Express Reconstruction Project
County	Chester
SR, Section	SR 0422, Section M2B
Community Name and/or NSA #	NSA D
Noise Wall Identification (i.e., Wall 1)	Barrier D

General

1. Type of project (new location, reconstruction, etc.):	Reconstruction
<hr/>	
2. Total number of impacted receptor units in community	
Category A units impacted	0
Category B units impacted	6
Category C units impacted	0
Category D units impacted (if interior analysis required)	0
Category E units impacted	0

Warranted

1. Community Documentation		
a. Date community was permitted (for new developments or developments planned for or under construction)	N/A	
b. Date of approval for the Categorical Exclusion (CE), Record of Decision (ROD), or Finding of No Significant Impact (FONSI):	CEE 5/17/2006 CE Re-Evaluation 12/22/2010	
c. Does the date in 1.a precede the date in 1.b? If yes, proceed to Warranted Item 2. If no, consideration of noise abatement is not warranted. Proceed to “Decision” block and answer “no” to warranted question. As the reason for this decision, state that “Community was permitted after the date of approval of <i>CE, ROD, or FONSI, as appropriate.</i> ”	N/A Yes	N/A No
<hr/>		
2. Criteria requiring consideration of noise abatement (note N/A if category is not impacted or present or analysis not required). A “yes” answer to any of the following three questions requires the consideration of noise abatement.		
a. With the proposed project, are design year noise levels predicted to approach or exceed the NAC level(s) in Table 1?	✓ Yes	_____ No
b. With the proposed project, is there predicted to be a substantial design year noise level increase of 10 dB(A) or more at Activity Category A, B, C, D, or E receptor(s)?	_____ Yes	✓ No
c. With the proposed project, are design year noise levels predicted to be less than existing noise levels, but still approach or exceed the NAC levels in Table 1 for the relevant Activity Category?	_____ Yes	✓ No

Feasibility – Questions 1c through 7 must all be answered “yes” for a noise barrier to be determined to be feasible.

1. Impacted receptor units

a. Total number of impacted receptor units:

6

b. Percentage of impacted receptor units receiving 5 dB(A) or more insertion loss:

100%

c. Is the percentage 50 or greater?

✓

Yes

No

2. Can the noise wall be designed and physically constructed at the proposed location?

✓

Yes

No

3. Can the noise wall be constructed without causing a safety problem?

✓

Yes

No

4. Can the noise wall be constructed without restricting access to vehicular or pedestrian travel?

✓

Yes

No

5. Can the noise wall be constructed in a manner that allows for access for required maintenance and inspection operations?

✓

Yes

No

6. Can the noise wall be constructed in a manner that permits utilities to function in a normal manner?

✓

Yes

No

7. Can the noise wall be constructed in a manner that permits drainage features to function in a normal manner?

✓

Yes

No

Reasonableness

1. Community Desires Related to the Barrier

a. Do at least 50 percent of the responding benefited receptor unit owner(s) and renters desire the noise wall? If yes, continue with Reasonableness questions. If no, the noise wall can be considered not to be reasonable. Proceed to “Decision” block and answer “no” to reasonableness question. As the reason for this decision, state that “The majority of the benefited receptor unit owners do not desire the noise wall.”

TBD

Yes

TBD

No

2. Square Footage Per Benefited Receptor (SF/BR) Evaluation

a. Area (SF) of the proposed noise wall

22,442

b. Number of benefited receptor units (any unit receiving 5 dB(A) or more insertion loss)

14.00

c. $SF/BR = 2a/2b$

1,603

d. Is 2c less than or equal to the MaxSF/BR value of 2000?

✓

Yes

No

3. Noise Reduction Design Goals (Activity Categories A, B, C, and E) A “yes” answer is required to Question 3a. for the noise wall to be determined to be reasonable. Questions 3b through 3e represent desirable goals that need not be met for a noise wall to be determined reasonable. However, they must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|--------------|------------------|
| a. Does the noise wall reduce design year exterior_noise levels by at least 7 dB(A) for at least one benefited receptor? | <u>✓</u> Yes | <u> </u> No |
| b. Does the noise wall provide an insertion loss of at least 7 dB(A) for more receptors than required under 3a.while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u>✓</u> Yes | <u> </u> No |
| c. Does the noise wall provide insertion losses of greater than 7 dB(A) while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u>✓</u> Yes | <u> </u> No |
| d. Does the noise wall reduce future exterior levels to the low-60-decibel range (60-63) for Category B and C receptors and the upper-60 dB(A) range (65-68) for Category E receptors? | <u>✓</u> Yes | <u> </u> No |
| e. Does the noise wall reduce design year noise levels back to existing levels? | <u>✓</u> Yes | <u> </u> No |

4. Noise Reduction Design Goals (Activity Category D) A “yes” answer is required to Question 4a. for the barrier to be determined to be reasonable. Question 4b represents a desirable goal that need not be met for a noise wall to be determined reasonable. However, this goal must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|----------------|---------------|
| a. Does noise wall reduce design year interior_noise levels by at least 7 dB(A) for the facility’s analysis point? | <u>N/A</u> Yes | <u>N/A</u> No |
| b. While conforming to the MaxSF/BR criteria and justified by a “point of diminishing returns’ evaluation, does the noise wall provide an interior insertion loss above the 7 dB(A) minimum | <u>N/A</u> Yes | <u>N/A</u> No |

Decision

Is the Noise Wall WARRANTED?

✓ Yes

 No

Is the Noise Wall FEASIBLE?

✓ Yes

 No

Is the Noise Wall REASONABLE?

✓ Yes

 No

Additional Reasons for Decision:

Responsible/Qualified Individuals Making the Above Decisions

PennDOT, Engineering District Environmental Manager

Date

Miles Cheang, Traffic Noise Abatement Specialist, Jacobs Engineering

6/30/2023

Qualified Professional Performing the Analysis
(name, title, and company name)

Date

**Highway Traffic Noise Abatement
Warranted, Feasible, and Reasonable Worksheet – Noise Wall**

Date	6/30/2023
Project Name	State Route (SR) 0422 Pottstown Bypass Express Reconstruction Project
County	Chester
SR, Section	SR 0422, Section M2B
Community Name and/or NSA #	NSA E
Noise Wall Identification (i.e., Wall 1)	Barrier E

General

1. Type of project (new location, reconstruction, etc.):	Reconstruction
2. Total number of impacted receptor units in community	
Category A units impacted	0
Category B units impacted	8
Category C units impacted	0.405
Category D units impacted (if interior analysis required)	0
Category E units impacted	0

Warranted

1. Community Documentation		
a. Date community was permitted (for new developments or developments planned for or under construction)	N/A	
b. Date of approval for the Categorical Exclusion (CE), Record of Decision (ROD), or Finding of No Significant Impact (FONSI):	CEE 5/17/2006 CE Re-Evaluation 12/22/2010	
c. Does the date in 1.a precede the date in 1.b? If yes, proceed to Warranted Item 2. If no, consideration of noise abatement is not warranted. Proceed to “Decision” block and answer “no” to warranted question. As the reason for this decision, state that “Community was permitted after the date of approval of <i>CE, ROD, or FONSI, as appropriate.</i> ”	N/A Yes	N/A No
2. Criteria requiring consideration of noise abatement (note N/A if category is not impacted or present or analysis not required). A “yes” answer to any of the following three questions requires the consideration of noise abatement.		
a. With the proposed project, are design year noise levels predicted to approach or exceed the NAC level(s) in Table 1?	✓ Yes	_____ No
b. With the proposed project, is there predicted to be a substantial design year noise level increase of 10 dB(A) or more at Activity Category A, B, C, D, or E receptor(s)?	_____ Yes	✓ No
c. With the proposed project, are design year noise levels predicted to be less than existing noise levels, but still approach or exceed the NAC levels in Table 1 for the relevant Activity Category?	_____ Yes	✓ No

Feasibility – Questions 1c through 7 must all be answered “yes” for a noise barrier to be determined to be feasible.

1. Impacted receptor units

a. Total number of impacted receptor units:

8.405

b. Percentage of impacted receptor units receiving 5 dB(A) or more insertion loss:

98%

c. Is the percentage 50 or greater?

✓

Yes

No

2. Can the noise wall be designed and physically constructed at the proposed location?

✓

Yes

No

3. Can the noise wall be constructed without causing a safety problem?

✓

Yes

No

4. Can the noise wall be constructed without restricting access to vehicular or pedestrian travel?

✓

Yes

No

5. Can the noise wall be constructed in a manner that allows for access for required maintenance and inspection operations?

✓

Yes

No

6. Can the noise wall be constructed in a manner that permits utilities to function in a normal manner?

✓

Yes

No

7. Can the noise wall be constructed in a manner that permits drainage features to function in a normal manner?

✓

Yes

No

Reasonableness

1. Community Desires Related to the Barrier

a. Do at least 50 percent of the responding benefited receptor unit owner(s) and renters desire the noise wall? If yes, continue with Reasonableness questions. If no, the noise wall can be considered not to be reasonable. Proceed to “Decision” block and answer “no” to reasonableness question. As the reason for this decision, state that “The majority of the benefited receptor unit owners do not desire the noise wall.”

TBD

Yes

TBD

No

2. Square Footage Per Benefited Receptor (SF/BR) Evaluation

a. Area (SF) of the proposed noise wall

19,316

b. Number of benefited receptor units (any unit receiving 5 dB(A) or more insertion loss)

13.45

c. $SF/BR = 2a/2b$

1,436

d. Is 2c less than or equal to the MaxSF/BR value of 2000?

✓

Yes

No

3. Noise Reduction Design Goals (Activity Categories A, B, C, and E) A “yes” answer is required to Question 3a. for the noise wall to be determined to be reasonable. Questions 3b through 3e represent desirable goals that need not be met for a noise wall to be determined reasonable. However, they must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|--------------|------------------|
| a. Does the noise wall reduce design year exterior_noise levels by at least 7 dB(A) for at least one benefited receptor? | <u>✓</u> Yes | <u> </u> No |
| b. Does the noise wall provide an insertion loss of at least 7 dB(A) for more receptors than required under 3a.while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u>✓</u> Yes | <u> </u> No |
| c. Does the noise wall provide insertion losses of greater than 7 dB(A) while still conforming to the MaxSF/BR value of 2,000 and a “point of diminishing returns” evaluation? | <u>✓</u> Yes | <u> </u> No |
| d. Does the noise wall reduce future exterior levels to the low-60-decibel range (60-63) for Category B and C receptors and the upper-60 dB(A) range (65-68) for Category E receptors? | <u>✓</u> Yes | <u> </u> No |
| e. Does the noise wall reduce design year noise levels back to existing levels? | <u>✓</u> Yes | <u> </u> No |

4. Noise Reduction Design Goals (Activity Category D) A “yes” answer is required to Question 4a. for the barrier to be determined to be reasonable. Question 4b represents a desirable goal that need not be met for a noise wall to be determined reasonable. However, this goal must be addressed and should be considered in the determination of the recommended noise wall.

- | | | |
|---|----------------|---------------|
| a. Does noise wall reduce design year interior_noise levels by at least 7 dB(A) for the facility’s analysis point? | <u>N/A</u> Yes | <u>N/A</u> No |
| b. While conforming to the MaxSF/BR criteria and justified by a “point of diminishing returns’ evaluation, does the noise wall provide an interior insertion loss above the 7 dB(A) minimum | <u>N/A</u> Yes | <u>N/A</u> No |

Decision

Is the Noise Wall WARRANTED?

✓ Yes

 No

Is the Noise Wall FEASIBLE?

✓ Yes

 No

Is the Noise Wall REASONABLE?

✓ Yes

 No

Additional Reasons for Decision:

Responsible/Qualified Individuals Making the Above Decisions

PennDOT, Engineering District Environmental Manager

Date

Miles Cheang, Traffic Noise Abatement Specialist, Jacobs Engineering

6/30/2023

Qualified Professional Performing the Analysis
(name, title, and company name)

Date

Appendix I

List of Preparers

List of Preparers/Reviewers

Jacobs Engineering

Tom Cornell, PE

Project Manager

Education: B.S., Civil Engineering

Professional Experience: 17 Years

Role: QA/QC, Report Preparation

Miles Cheang

Principal Noise & Air

Education: B.A., Urban Planning

Professional Experience: 20 Years

Role: Noise Monitoring, Model Development, Impact and Abatement Analysis, Report Preparation

Steven Margherita

Environmental Planner

Education: B.A., GIS

Professional Experience: 4 Years

Role: Noise Monitoring, Model Development, Report Preparation, Graphics, QA/QC

Appendix J

Noise Abatement Report Forms

(To be included when available)