August 28, 2023

IMPROVE 64 PROJECT

Revised Final Traffic Noise Technical Report

PREPARED FOR

INDOT Seymour District

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Executive Summary

The Indiana Department of Transportation (INDOT) is developing a project along I-64 and I-265 in New Albany, Indiana in Floyd County in partnership with the Federal Highway Administration (FHWA). This technical report evaluates the potential noise impacts and analyzes potential abatement for the proposed completion of the Improve 64 Project in conformance with corresponding federal regulations and guidance and the National Environmental Policy Act (NEPA). The determination of noise abatement measures and locations is in compliance with the FHWA's *Procedures for Abatement of Highway Traffic Noise and Construction Noise* as presented in the Code of Federal Regulations, Title 23 Part 772 (23 CFR 772) and INDOT's *Traffic Noise Analysis Procedure* (Noise Policy), last updated in 2022.

The latest version of this technical report, dated August 28, 2023, was updated after the final noise report was issued on April 28, 2023 due to conflicts with overhead transmission lines that were identified during utility coordination for proposed Noise Barrier 6 (NB6). For further discussion, see Section 6.2.

The project is anticipated to include the addition of a travel lane in each direction on I-64 from US 150 to 2,000 feet north of Cherry Street, the addition of an auxiliary lane on I-265 eastbound from I-64 to State Street, and the addition of a travel lane on I-265 eastbound from I-64 to 4,000 feet east of State Street, along with rehabilitation of pavement and bridges throughout the project area. The project also includes the addition of one lane on the I-64 westbound exit ramp to US 150 and reconstruction of the I-64/I-265 system interchange with the addition of one lane to all I-64/I-265 interchange ramps and relocation of the I-64 eastbound to I-265 eastbound ramp within the I-64/I-265 interchange. The noise analysis presents the existing and future acoustical environment at various receptors located along I-64 and I-265 within the study area. Highway improvement projects categorized as Type I according to 23 CFR 772.5 are required to undergo a noise abatement analysis. The project is being studied as a Type I project because of the addition of through travel lanes.

Existing noise measurements were conducted on June 22nd and 23rd, 2021 at ten (10) representative locations in the study area for a duration of 20 minutes at each site. The existing noise measurements were taken to validate use of the FHWA's latest approved version of the Traffic Noise Model, TNM Version 2.5 (TNM), to predict future noise levels. The measurements were made in accordance with FHWA and INDOT guidelines using an integrating sound level analyzer meeting American National Standard Institute and International Electro Technical Commission Type 1 specifications. Traffic counts and vehicle classification were collected concurrently with the noise measurements. To validate TNM, the measured noise levels were compared to the modeled noise levels using the same traffic volumes, speeds, and vehicle types that were present during each field measurement. The modeled noise levels at the ten (10) sites compared within 3 dB(A) of the measured levels, which satisfies the INDOT requirement for validating TNM.

TNM was used to model existing (2019) and design year (2046) worst hourly traffic noise levels within the study area. A total of 836 TNM noise receivers representing 927 noise-sensitive receptor units were modeled for the existing and proposed condition, including 744 receivers representing 799 Activity Category B receptor units (note six of these units qualify as a historic, 4(f) property), 83 receivers representing 114 Category C receptor units (note two of these units qualify as a historic, 4(f) property), four (4) receivers representing eight (8)

Category D receptor units, and five (5) receivers representing six (6) Category E receptor units. Measurement site and receiver locations are shown on the maps in **Appendix A** of this report.

The noise analysis results indicate 158 receiver locations, including 145 receiver locations representing 150 Activity Category B receptor units and 13 receiver locations representing 14 Category C receptor units, would be exposed to 2046 design year noise levels approaching or exceeding the FHWA Noise Abatement Criteria (NAC). The noise levels at these 164 receptor units would range from 66.0 to 75.9 dB(A) $L_{eq(h)}$. Substantial noise level increases, defined by the INDOT Noise Policy as a 15.0 dB(A) or greater noise level increase from existing and future, are not projected to occur within the study area.

Noise abatement was analyzed for impacted receptors per INDOT Noise Policy. Eight (8) noise barrier locations (one of which is a two-barrier system) were modeled in the study area. Shown in **Table 1**, the noise barrier designs ranged from 435 to 5,274 feet in length with heights ranging from 8 to 22 feet and surface area ranging from 8,700 to 105,480 square feet. One noise barrier (NB3) was found not to be feasible as it does not meet INDOT's feasibility goal of 5 dB(A) reduction at a majority (greater than 50%) of the impacted receptors. Four noise barriers (NB1, NB2, NB4a and NB4b) meet INDOT's feasibility goal but are not reasonable as they either do not meet INDOT's Noise Reduction Design Goal (NRDG) of at least a 7 dB(A) reduction for a majority (greater than 50%) of the benefited first row receptors or INDOT's Maximum Square Footage per Benefited Receptor criteria (NB1 and NB4a do not meet either of these requirements). Three noise barriers (NB5, NB6 and NB7) meet INDOT's feasibility and reasonableness goals and are recommended. Noise barriers were not analyzed for impacted receptors in CNEs 11 and 12 because the impacts are directly adjacent to bridges on I-64 that are not being replaced with the project, and noise barriers could not extend on to these bridges; therefore, they would not extend sufficiently past the impacted receptors to reduce noise levels and are not feasible.

Based on the studies completed to date, INDOT has identified 164 impacted receptor units and has determined that noise abatement is likely, but not guaranteed, at three (3) locations. Noise abatement at these locations is based upon preliminary design criteria. Noise abatement at these locations at this time has been estimated to reduce the noise level by a minimum of 7 dB(A) at a majority of the identified impacted receptors. A re-evaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed such that noise abatement is not feasible and reasonable, the abatement measures might not be provided.

The viewpoints of benefited residents and property owners were sought and considered in determining the reasonableness of highway traffic noise abatement measures for the proposed highway construction project. INDOT will incorporate highway traffic noise considerations in on-going activities for public involvement in the highway program. The final decision on the installation of any abatement measure(s) will be made upon the completion of the project's final design.

Table 1. Noise Barrier Summary

Proposed Barrier Location	CNE Area	Length (feet)	Height (feet)	Benefited Recep-tors	Feasibility Criteria Met?	Design Goal Met?	Area (Square Ft.)	Square Ft. per Benefited Receptor	Square Ft. Threshold[1]	Square Ft. Reasonable Criteria Met?
NB1	1	435	20	1	Yes	No	8,700	8,700	1,000	No
NB2	4	1,939	20	11	Yes	Yes	38,780	3,525	1,000	No
NB3	5	1,593	18	1	No	No	28,674	28,674	1,000	No
NB4a	7	5,274	20	40	Yes	No	105,480	2,637	1,000	No
NB4b	9	1,650	8-14	16	Yes	Yes	20,600	1,288[2]	1,250	No
NB5	8, 10	3,926	10-22	140	Yes	Yes	73,668	526	1,250	Yes
NB6[3]	16, 18	4,416	8-20	196	Yes	Yes	80,102	409	1,000	Yes
NB7	17	3,841	10-18	103	Yes	Yes	61,046	593	1,000	Yes

[1] As described in this section, the maximum allowable square footage criterion shown was determined based on As-Built documentation of dates of initial roadway construction (1963 for I-64, 1970 for I-265, and 1926 for US 150). Per INDOT Noise Policy, the allowable maximum square footage per benefited receptor is 1,000 square feet per benefited receptor if a majority (greater than 50%) of the nearby receptors in a given CNE were not constructed prior to the roadway. Development in which a majority (greater than 50%) of the receptors were in place prior to the initial construction of the roadway in its current state (functional classification) will receive additional consideration for noise abatement, and the allowable maximum square footage per benefited receptor that will be considered is 1,250 square feet per benefited receptor.

[2] With the need to locate this noise barrier 10 feet from an existing retaining wall per INDOT's Geotechnical Engineering Division, the noise barrier would need 10 additional feet of height for the approximate 800-foot length of the retaining wall. This would add 8,000 square feet to the noise barrier, resulting in an estimated square footage of 1,788 per benefited receptor.

[3] This barrier analysis was updated after the final noise report was issued in on April 28, 2023 due to conflicts with overhead transmission lines that were identified during utility coordination. A portion of this barrier was lowered and removed to allow sufficient clearance near the overhead transmission lines.

1. Introduction

The Indiana Department of Transportation (INDOT) is developing a project along I-64 and I-265 in New Albany, Indiana (Floyd County) in partnership with the Federal Highway Administration (FHWA). This technical report evaluates the potential noise impacts and analyzes potential abatement for the proposed completion of the Improve 64 Project based on existing and proposed traffic data and engineering designs for the project.

The location of the project in Floyd County, Indiana is shown in **Figure 1**. One build alternative is being evaluated for the project. The noise study area for the project is shown on the maps in **Appendix A** and includes receivers within 500 feet from the preferred alternative (edge of outside travel lane and project termini).

Highway improvement projects categorized as Type I according to 23 CFR 772.5 are required to undergo a noise abatement analysis. The project is being studied as a Type I project because of the addition of through travel lanes.

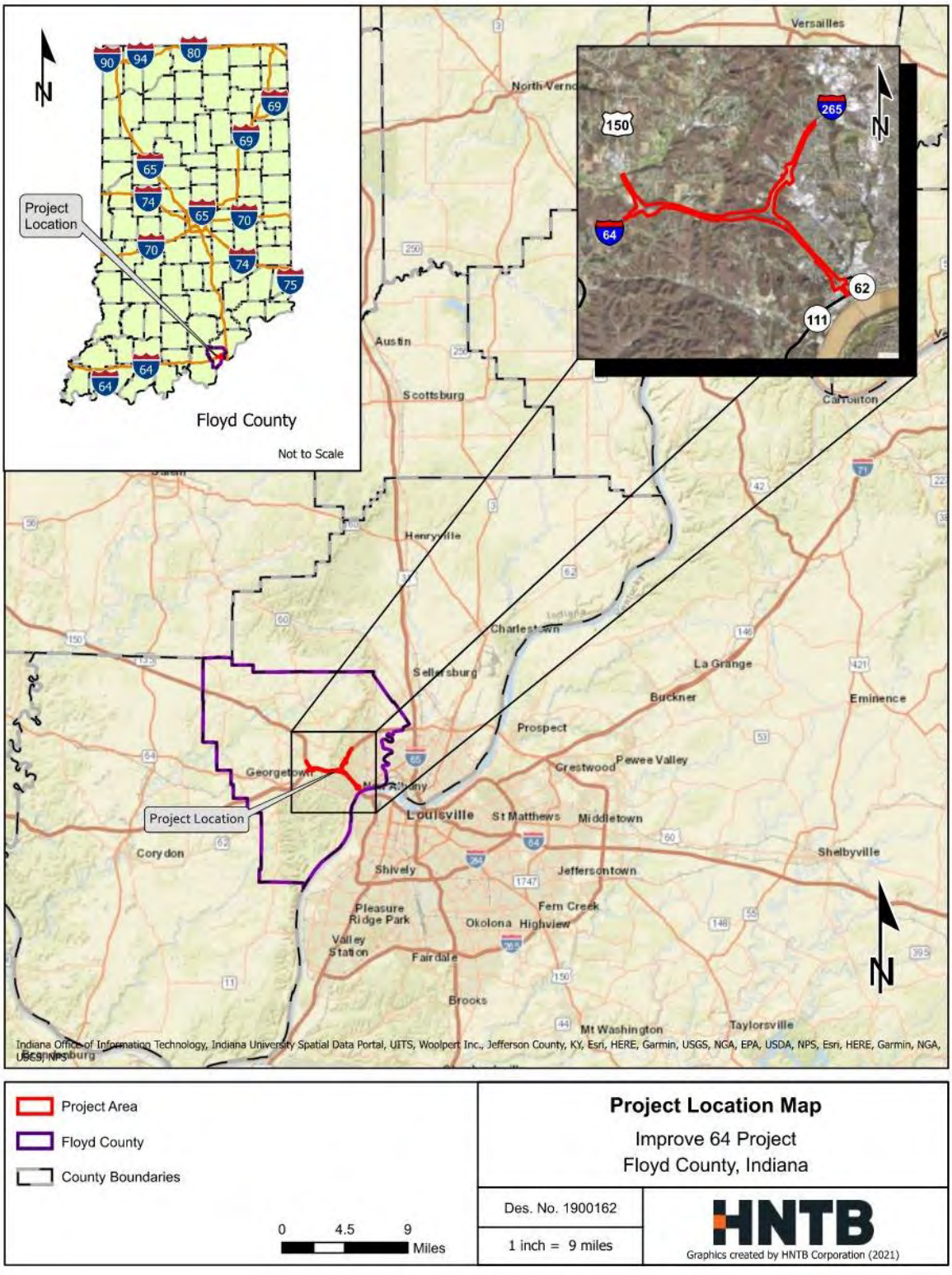
A noise analysis has been completed for the project. As part of this analysis, locations where noise barriers were feasible to analyze have been identified and analyzed to determine if they are feasible and reasonable in accordance with INDOT's *Traffic Noise Analysis Procedure* (Noise Policy), last updated in 2022.

1.1. Project Description

The project is anticipated to include the addition of a travel lane in each direction on I-64 from US 150 to 2,000 feet north of Cherry Street, the addition of an auxiliary lane on I-265 eastbound from I-64 to State Street, and the addition of a travel lane on I-265 eastbound from I-64 to 4,000 feet east of State Street, along with rehabilitation of pavement and bridges throughout the project area. The project also includes the addition of one lane on the I-64 westbound exit ramp to US 150 and reconstruction of the I-64/I-265 system interchange with the addition of one lane to all I-64/I-265 interchange ramps and relocation of the I-64 eastbound to I-265 eastbound ramp within the I-64/I-265 interchange.

Needs for the project include capacity concerns because insufficient freeway capacity in the vicinity of the I-64/I-265 system interchange causes recurring freeway congestion on both I-64 between State Road 62/64 and the Indiana/Kentucky state line and I-265 between I-64 and Grant Line Road. The purpose of the project is to reduce traffic congestion by improving peak hour operating conditions to LOS D or better through the design year resulting in improved travel speeds, reduced queuing, and less congestion-related crashes. These improvements to the I-64 and I-265 corridors will improve mobility within the Louisville Metro Area.

Figure 1. Project Location Map



2. Legislation and Noise Fundamentals

2.1. Regulatory Requirements

Effective control of undesirable traffic noise focuses upon three types of action. These are the control of land uses adjacent to a highway, regulation of vehicle noise emission levels, and mitigation of noise impacts resulting from certain types of highway improvement projects.

The authority to implement planning and land use control in the State of Indiana is under the jurisdiction of local governments. Both FHWA and INDOT encourage local governments to regulate land uses in such a manner that noise sensitive developments are either prohibited from being located adjacent to major transportation facilities, or are planned, designed, and built in such a manner that potential noise impacts can be avoided or minimized.

The Noise Control Act of 1972 gave the U.S. Environmental Protection Agency (USEPA) the authority to establish noise regulations to control major noise sources, including motor vehicles and construction equipment. Furthermore, the USEPA was required to set noise emission standards for motor vehicles used for interstate commerce and FHWA was required to enforce the USEPA noise emission standards through the Office of Motor Carrier Safety.

NEPA gives broad authority and responsibility to Federal agencies to evaluate and mitigate adverse environmental impacts caused by Federal actions. FHWA is required to comply with NEPA including mitigating adverse highway traffic noise effects. The Federal-Aid Highway Act of 1970 mandates FHWA to develop standards for mitigating highway traffic noise. It also requires FHWA to establish traffic noise level criteria for various types of land uses. The Act prohibits FHWA approval of federal-aid highway projects unless adequate consideration has been made for noise abatement measures to comply with the standards.

FHWA regulations for highway traffic noise for federal-aid highway projects are contained in 23 CFR Part 772. The regulations contain Noise Abatement Criteria (NAC), which represent the maximum acceptable level of highway traffic noise for specific types of land uses. The regulations do not mandate that the NAC be met in all situations, but rather require that feasible and reasonable efforts be made to provide noise abatement when the NAC are approached or exceeded.

The traffic noise standards and the description of highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials are found in *Procedures for Abatement of Highway Traffic Noise and Construction Noise* as presented in 23 CFR Part 772. FHWA policy also requires each state Department of Transportation to adopt a state-specific noise policy, approved by FHWA, which defines specific terms and describes how the state implements the noise standard.

The effective date of the most recent FHWA-approved INDOT Noise Policy is January 1, 2023. This policy is applicable to Type I federal-aid highway projects which involve the construction of a highway on a new location or the physical alteration of an existing highway that significantly changes either its horizontal or vertical alignment or increases the number of through traffic lanes. The structure of the policy focuses on the following principal elements:

- Identification of Noise-Sensitive Land Uses.

- Determination of Existing Noise Levels.
- Prediction of Future Noise Levels.
- Identification of Traffic Noise Impacts.
- Identification and Consideration of Abatement.
- Consideration of Construction Noise.
- Coordination with Local Government Officials.

2.2. Traffic Noise

Noise is generally defined as unwanted sound. Airborne sound is what we hear when there are rapid fluctuations (or variations) in air pressure above and below atmospheric pressure. The ear is sensitive to these pressure variations and perceives them as sound. The intensity of these pressure variations causes the ear to discern different levels of loudness.

Sound pressure levels are measured and expressed in decibels (dB). The dB scale is logarithmic (non-linear) and expresses the ratio of the sound pressure level being measured to a standard reference level.

Most sounds occurring in the environment do not consist of a single frequency, but rather a broadband of differing frequencies. Because the human ear does not respond to these frequencies equally, weighting scales are used to define the relative loudness of different frequencies. The "A" weighting scale is widely used in environmental work because it closely resembles the non-linearity of human hearing. The A-weighted sound level in decibels is identified as dB(A).

Although the dB(A) may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources, creating a relatively steady background noise in which no particular source is identifiable. Traffic noise is not constant. It varies as each vehicle passes through a certain location. It is necessary to use a method of measure that will account for the time-varying nature of sound when studying environmental noise. The equivalent sound pressure level (L_{eq}) is defined as the continuous steady sound level that would have the same total A-weighted sound energy as the real fluctuating sound measured over a given period of time. The time-period used to determine traffic noise levels is one hour and uses the descriptor $L_{eq(h)}$.

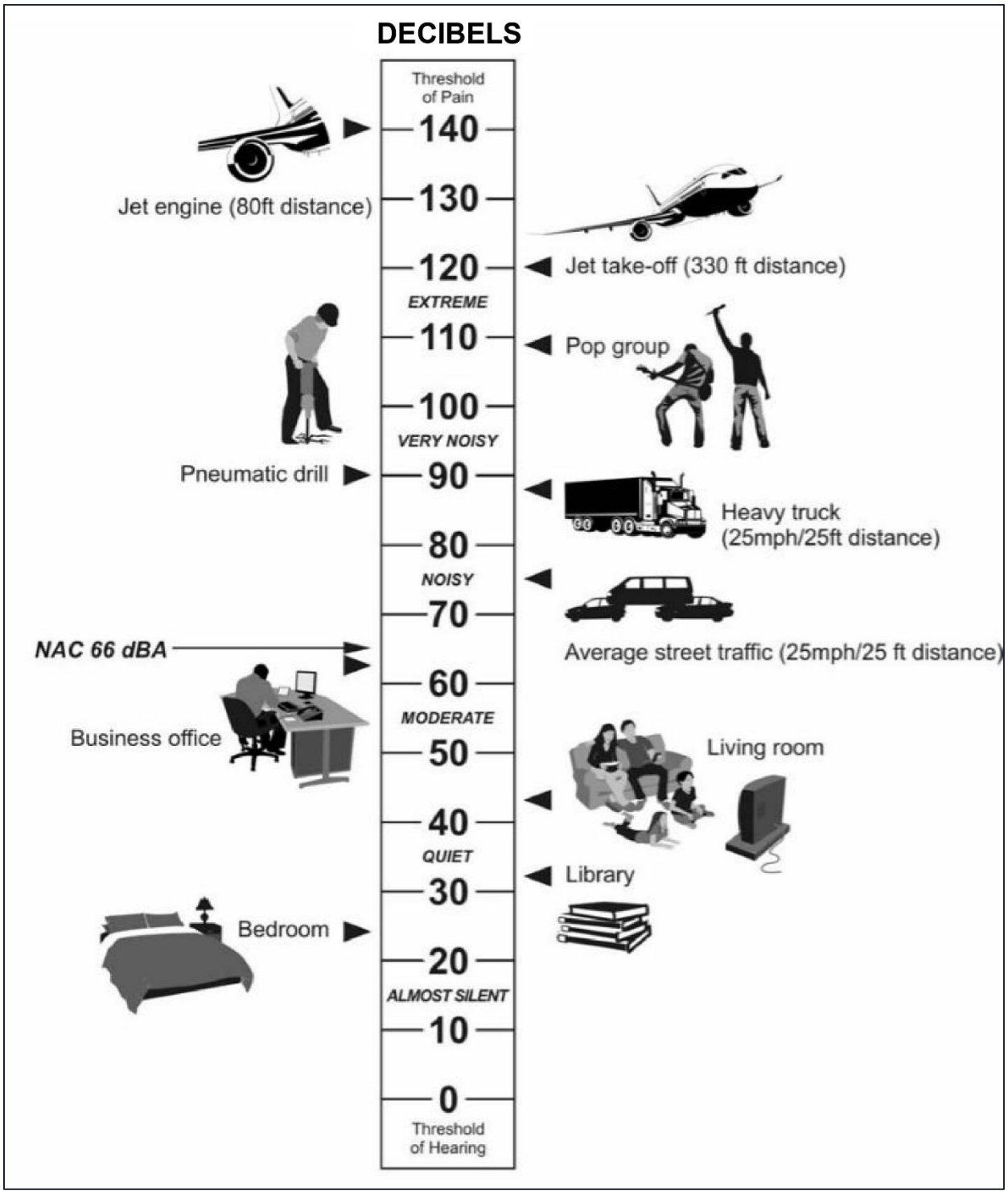
Because decibels are logarithmic units, sound levels cannot be added by ordinary arithmetic means. The following general relationships provide a basic understanding of sound generation and propagation:

- An increase or decrease of 10 dB will be perceived by the human ear to be a doubling or halving (respectively) of the sound level.
- Doubling the traffic volumes, keeping vehicle mix and speeds the same, and not changing the distance between the source and a receiver will increase the traffic noise level by 3 dB, which will be perceived as a barely noticeable change in outdoor settings.

Traffic noise at a receiver is influenced by the following major factors: distance from the traffic to the receiver, volume of traffic, speed of traffic, vehicle mix, and acoustical shielding. Tire sound levels increase with vehicle speed but also depend upon road surface, vehicle weight, tread design and wear. Change in any of these factors

can vary noise levels. At lower speeds, especially in trucks and buses, the dominant noise source is the engine and related accessories. **Figure 2** provides sound levels of typical noise sources.

Figure 2. Sound Levels of Typical Noise Sources



Source: Adopted from "Environmental Criteria for Road Traffic Noise", Environmental Protection Authority, South Sydney, NSW, May 1999, Page 38.

3. Impact Criteria

3.1. Noise Abatement Criteria (NAC)

The INDOT Noise Policy has adopted the NAC that have been established by FHWA (23 CFR Part 772) for determining noise impacts for a variety of land uses. The land-use Activity Categories along with the criteria are presented in **Table 2**. The NAC sound levels are only to be used to determine a roadway noise impact. These are the absolute values where abatement must be considered.

3.2. INDOT Definition of Noise Impacts

Traffic noise impacts occur if either of the following two conditions is met:

- The predicted traffic noise levels approach or exceed the NAC, as shown in **Table 2**. The INDOT Noise Policy defines "approach or exceed" as meaning the future traffic noise levels are within 1 dB(A) lower than the appropriate NAC. For example, for a Category B receptor, 66 dB(A) is approaching 67 dB(A) and would be considered an impact.
- The predicted traffic noise levels substantially exceed the existing noise level. The INDOT Noise Policy defines "substantially exceed" as meaning when future traffic noise levels exceed existing noise levels by 15 dB(A) or more. For example, if a receptor's existing noise level is 50 dB(A) and the predicted future noise level is 65 dB(A), then it would be considered an impact.

Table 2: FHWA Noise Abatement Criteria

Hourly A-Weighted Sound Level – Decibels (dB(A))			
Activity Category	**Criteria[1] $L_{eq(h)}$**	**Evaluation Location**	**Activity Description**
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	Exterior	Residential.
C[2]	67	Exterior	Active sports 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-D or F.
F	-	-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	-	-	Undeveloped lands that are not permitted.

[1] $L_{eq(h)}$ Activity Criteria are only for impact determination and are not design standards for noise abatement measures.

[2] Includes undeveloped lands permitted for this activity category.

Source: Federal Highway Administration (23 CFR Part 772, Table 1).

4. Noise Study Methodology

4.1. Identification of Land Uses

The project is located in a developed area of Floyd County, Indiana, which consists primarily of single-family and multi-family residences (NAC B), recreational facilities at Wesley Chapel UMC Playground, Cherry Valley Golf Course, a permitted neighborhood playground, Pearl's Enrichment Center playground, Anderson Park Baseball Fields, Billy Herman Fields, Joe Kraft basketball court, New Albany Flow Park, and New Beginnings Community Church, West Haven Cemetery and outdoor seating at Floyd County Public Library and Autumn Woods Health Campus (NAC C), three (3) places of worship and one food distribution center (Church of Christ, Revelation Tabernacle Food Distribution Center, Christ Tabernacle Pentecostal, and Pleasant Home Southern Baptist Church) with interior use (NAC D), and six (6) commercial properties represented with five (5) receivers (Holiday Inn Express, Hampton Inn, Floyd County Brewing Company, The Grain Haus, an office building with a porch, and Fairfield Inn & Suites) with outdoor use (NAC E). Note three NAC B receivers (R-6-17 (HP6), R-11-19 (HP3) and R-11-20 (HP4)) are also considered historic properties, three NAC B receivers (R-11-34 (HP5), R-16-21 (HP7), and R-16-62 (HP8)) are representing historic districts, and two NAC C receivers (R-12-4 (HP1) and R-12-5 (HP2)) are considered historic properties but are otherwise not noise-sensitive. The noise study area also includes sparse non-sensitive industrial and commercial land uses (NAC F) and vacant, undeveloped land (NAC G).

The NAC D interior use receptors at Church of Christ, Christ Tabernacle Pentecostal, Pleasant Home Southern Baptist Church, and Revelation Tabernacle Food Distribution Center have been included because for Activity Category C land uses that do not have an exterior area of frequent human use or have exterior use that is far from or physically shielded from the roadway, the noise analysis shall use Activity Category D as the basis for determining noise impact (23 CFR 772). No exterior use area is present at any Activity Category D properties.

Per INDOT Noise Policy, coordination with local governments is necessary to determine if there are any new permitted land uses within the study area for inclusion in the noise analysis. HNTB initiated a request to the city of New Albany and Floyd County to obtain proposed or permitted development plans within the project area. Upon review of documents obtained, it was confirmed that three permitted noise-sensitive developments (West Street Mews Townhomes, Olive Grove Townhomes, and the Village of Autumn Grove) were within the study area limits.

4.2. Common Noise Environments (CNE)

Based on a combination of land use, traffic volumes, location of cross streets and residential density, land uses in the study area have been grouped into a series of numbered Common Noise Environments (CNE) that are identified on the maps in **Appendix A**. Eighteen (18) CNEs were identified to facilitate the analysis of highway noise in areas of like land uses. The CNE boundaries and land use within are described below.

CNE 1 is located on the west side of US 150 south of Old Vincennes Road (N) to the I-64 westbound on-ramp. This area consists of two (2) single-family residences (NAC B) and Wesley Chapel playground (NAC C).

CNE 2 is located on the east side of US 150 south of Old Vincennes to approximate 460 feet east of Spring Creek Drive along I-64 westbound. This area consists of four (4) single-family residences (NAC B).

CNE 3 is located on the south side of I-64 and west of US 150 along the I-64 eastbound on-ramp. This area consists of one single-family residence (NAC B).

CNE 4 is located on the north side of I-64 east of W Riley Road and approximately 850 feet west of Murvin Drive. This area consists of single-family residences (NAC B).

CNE 5 is located on the south side of I-64 from Westchester Drive to approximately 500 feet east of Kelleys Ridge. This area consists of single-family residences (NAC B).

CNE 6 is located on the south side of I-64 from approximately 250 west of Murvin Drive to approximately 800 feet northwest of Captain Frank Road underpass. This area consists of single-family residences (NAC B), one of which is also considered a historic property (R-6-17 (HP6)).

CNE 7 is located on the west side of I-64 from approximately 850 northwest of Captain Frank Road underpass to Cherry Street. This area consists of single-family residences (NAC B) and Cherry Valley Golf Course (NAC C).

CNE 8 is located on the east side of I-64 from approximately 30 feet south of Cherry Street to approximately 780 feet north of Captain Frank Road. This area consists of single- and multi-family residences (NAC B), West Haven Cemetery, a permitted townhome development (West Street Mews, R-8-95 through R-8-113), the permitted Olive Grove Townhomes development (R-8-8 through R-8-22) with one permitted playground (R-8-7), Pearl's Enrichment Center playground, and interior space at Church of Christ (NAC D).

CNE 9 is located on the west side of I-64 from Cherry Street to approximately 480 feet south of Commerce Street. This area consists of single-family residences (NAC B).

CNE 10 is located on the east side of I-64 from approximately 30 feet south of Cherry Street to approximately 160 feet north of the I-64 westbound off-ramp. This area consists of Anderson Park Baseball Fields and Billy Herman Fields (NAC C).

CNE 11 is located on the west side of I-64 from approximately 630 feet north of Spring Street to Market Street. This area consists of single- and multi-family residences (NAC B), two of which are also considered historic properties (R-11-19 (HP3) and R-11-20 (HP4)) and one of which represents a historic district (R-11-34 (HP5)), Joe Kraft basketball court (NAC C), Revelation Tabernacle Food Distribution Center (NAC D), and an office building with a porch Holiday Inn Express and Hampton Inn (NAC E).

CNE 12 is located on the east side of I-64 from between Spring Street to Market Street. This area consists of single- and multi-family residences (NAC B), two historical properties (R-12-4 (HP1) and R-12-5 (HP2)), Floyd County Public Library outdoor seating, and New Albany Flow Park (NAC C), Christ Tabernacle and Pleasant Home Southern Baptist Church (NAC D), and an office building with a porch (NAC E), Floyd County Brewing Company and The Grain Haus outdoor restaurant seating (NAC E).

CNE 13 is located on the west side of I-265 from approximately 280 feet north of Kenzig Road and 750 feet south of Paoli Pike. This area consists of single-family residences (NAC B), which includes 15 permitted single-family homes (R-13-1 through R-13-15) in the proposed Village of Autumn Grove development.

CNE 14 is located on the east side of I-265 from approximately 1060 feet south of State Street. This area consists of a Fairfield Inn & Suites (NAC E).

CNE 15 is located on the west side of I-265 north of Paoli Pike. This area consists of New Beginnings Community Church trail (NAC C).

CNE 16 is located on the east side of I-265 north of the I-265 eastbound on-ramp to Glenview Heights. This area consists of single-family residences (NAC B), two of which also represent historic districts (R-16-21 (HP7) and R-16-62 (HP8)).

CNE 17 is located on the west side of I-265 from 1,100 feet north of Paoli Pike to 200 feet north of Barrington Court. This area consists of single-family residences (NAC B).

CNE 18 is located on the east side of I-265 north of Glenview Heights to approximately 150 north of Royal Court. This area consists of single- and multi-family residences (NAC B), and Autumn Woods Health Campus outdoor seating (NAC C).

4.3. Receptors for Non-Residential Land Uses

As stated in Section 4.1, non-residential land uses in the study area with noise-sensitive land use include recreational facilities (Wesley Chapel UMC playground, Cherry Valley Golf Course, a permitted neighborhood playground in CNE 8, Pearl's Enrichment Center playground, Anderson Park baseball fields, Billy Herman Fields, Joe Kraft basketball court, Floyd County Public Library outdoor seating, New Albany Flow Park, and New Beginnings Community Church trail), West Haven Cemetery, and interior use at Church of Christ, Revelation Tabernacle Food Distribution Center, Christ Tabernacle Pentecostal, and Pleasant Home Southern Baptist Church (NAC D). There are also recreational facilities (outdoor seating common spaces) at Autumn Woods Health Campus, which is an assisted living facility in the study area.

Under most situations, a single structure is considered a single receptor. Structures that contain multiple residential units (e.g., apartments) are considered to have one receptor per residential unit. For certain land uses (i.e., parks, trails, etc.), a separate algorithm (shown below) is used to translate usage data into an appropriate number of receptor units, based on converting total usage to equivalent residential units. To determine the number of receptors appropriate for the Wesley Chapel UMC playground, Cherry Valley Golf Course, the permitted neighborhood playground, West Haven Cemetery, Pearl's Enrichment Center playground, Church of Christ (interior), Anderson Park baseball fields, Billy Herman Fields, Joe Kraft basketball court, Revelation Tabernacle Food Distribution Center (interior), Christ Tabernacle Pentecostal (interior), Pleasant Home Southern Baptist Church (interior), Floyd County Public Library, Floyd County New Albany Flow Park, the New Beginnings Church trail, and Autumn Wood Health Campus, the INDOT Noise Policy algorithm was applied based on available usage data.

For recreational facilities (outdoor seating common spaces) at multi-family properties (Autumn Woods Health Campus), the number of units in the property and estimated number of people who spend time outdoors each day were also used to estimate the number of daily users. For the neighborhood playground in the permitted West Mews Street Townhomes development in CNE 8, the number of planned units in the neighborhood was also used to estimate the average number of daily users; a similar process was followed for Joe Kraft basketball court. An explanation of how the number of receptor units was determined for each property is provided below.

Note that other non-residential land uses exist in the study area, including Holiday Inn Express (R-11-1), Fairfield Inn & Suites (R-14-1), and Floyd County Brewing Company and The Grain Haus (R-12-16) with outdoor seating areas, an office building with a porch (R-12-15), and Hampton Inn (R-11-13) with an outdoor pool area (NAC E); however, because these areas are not predicted to experience traffic noise impact, calculation of equivalent residential units was not performed for these NAC E receptors. One unit was assigned to receptors R-11-1, R-11-13, R-12-15 and R-14-1, and two receptors were assigned to receiver R-12-16 representing the two restaurants. A detailed calculation was also not performed for two historic 4(f) properties categorized as NAC C, R-12-4 (HP1) and R-12-5 (HP2), because both are commercial offices without outdoor use (Sedwick Law offices and Exit Realty One, respectively) which are otherwise not noise-sensitive. As a result, typical usage calculations would not apply, and one unit was assigned to each of these receptors. The residential properties in other CNEs (R-11-19 (HP3), R-11-20 (HP4), and R-11-24 (HP5) in CNE 11, R-6-17 (HP6) in CNE 6, R-16-21 (HP7) and R-16-62 (HP8) in CNE 16) that also qualify as historic properties or represent historic districts were assigned one unit as they are single-family residences.

Wesley Chapel UMC Playground

Wesley Chapel UMC (United Methodist Church) playground is located west of US 150 between Old Vincennes and I-64 in CNE 1 and is represented by two (2) receivers (R-1-3 and R-1-4). Based on website research into the church's activities, it is estimated that the playground is used by 30 people per day for up to four hours per day, three days per week for 12 months of the year, resulting in a usage factor of 0.07. Multiplying the usage factor (0.07) by the total assumed daily users (30) gives an average daily number of users that rounds up to three (3) users a day. This average daily number of users (3) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (100%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (3 users per day/2.60 average people per household[1]) X (100% of the property within the study area) = 1.2 (rounds up to 2) receptors.

The two receptor units were applied to the two receivers (R-1-3 and R-1-4) for Wesley Chapel UMC Playground, resulting in 1 unit for each receiver.

Cherry Valley Golf Course

Cherry Valley Golf Course is located west of I-64 along Valley View Road in CNE 7. A total of five (5) receivers (R-7-34, R-7-40, R-7-45, R-7-53, R-7-59) were placed at tee and green locations throughout the course. Through outreach to the golf course staff, it is estimated that the course hosts 9,000 annual users and is open year-round for 12 hours a day, seven days a week, resulting in a usage factor of 0.5. The number of annual users (9,000) was divided by 365 (days per year) to get 25 daily visitors. Multiplying the usage factor (0.5) by the daily visitors (25) gives an average daily number of users that rounds up to 13 users a day. This average daily number

[1] *United States Census Bureau, "QuickFacts, Floyd County, Indiana", https://www.census.gov/quickfacts/fact/table/floydcountyindiana/PST045219, Accessed July 16, 2021.*

of users (13) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (100%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (13 users per day/2.60 average people per household) X (100% of the property within the study area) = 5 receptors.

The five receptor units were applied to the five receiver locations (R-7-34, R-7-40, R-7-45, R-7-53, R-7-59) for Cherry Valley Golf Course, resulting in 1 unit for each receiver.

Permitted Neighborhood Playground (CNE 8)

The neighborhood playground in a permitted development off Linden Meadows Court (Olive Grove Townhomes) within CNE 8 is represented in the model by receiver R-8-7. It is assumed that 25% of the 38 residential houses being built in the subdivision would utilize the playground any given day, rounding up to an estimated ten (10) daily users. It is estimated that the park may be used up to 12 hours per day and seven days per week for 12 months of the year, resulting in a usage factor of 0.50. Multiplying the usage factor (0.50) by the total assumed daily users (10) gives an average daily number of users that rounds up to five (5). This average daily number of users (5) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (100%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (5 users per day/2.60 average people per household) X (100% of the property within the study area) = 1.9 (rounds up to 2) receptors.

The two receptor units were applied to the one receiver (R-8-7) at the permitted playground.

West Haven Cemetery

West Haven Cemetery is located east of I-64, directly south of Lewis Street in CNE 8. A total of two (2) receivers (R-8-66 and R-8-67) were placed at the closest row of grave sites to I-64. Through outreach to the cemetery staff, it is estimated that the cemetery has 20 visitors a day and is open for seven and a half hours a day (7:30am to 3pm), five days a week for 12 months, resulting in a usage factor of 0.22. Multiplying the usage factor (0.22) by the daily visitors (20) gives an average daily number of users that rounds up to five (5). This average daily number of users (5) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the cemetery property within the project boundary (60%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (5 users per day/2.60 average people per household) X (60% of the property within the study area) = 1.2 (rounds up to 2) receptors.

The two (2) receptor units were applied to the two (2) receiver locations (R-8-66 and R-8-67) for West Haven Cemetery within the study area, resulting in one (1) unit for each receiver.

Pearl's Enrichment Center Playground

Pearl's Enrichment Center is located east of I-64 at 1021 West Street in CNE 8. One (1) receiver (R-8-89) was placed on the property's playground. Through outreach to the staff, it is estimated that the playground is used by 16 people (children and staff) per day and is open for ten and a half hours a day (7am to 5:30pm), five days a week for 12 months, resulting in a usage factor of 0.31. Multiplying the usage factor (0.31) by the daily users (16) gives an average daily number of users that rounds up to five (5). This average daily number of users (5) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property within the project boundary (100%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (5 users per day/2.60 average people per household) X (100% of the property within the study area) = 1.9 (rounds up to 2) receptors.

The two (2) receptor units were applied to the one (1) receiver location (R-8-89) for the Pearl's Enrichment Center playground.

Church of Christ

Church of Christ is located at 302 Cherry Street within CNE 8 and is represented in the model by receiver R-8-152. For the interior space (NAC D), website research indicated that the church has capacity for an estimated 75 regular attendees. Based on the occupation of this building estimated at four hours per day and three days per week for 12 months of the year, a usage factor of 0.07 was calculated for this facility. Multiplying the usage factor (0.07) by the total assumed visitors (75) gives an average daily number of users that rounds up to six (6). This average daily number of users (6) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (100%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (6 users per day/2.60 average people per household) X (100% of the property within the study area) = 2.3 (rounds up to 3) receptors.

The three (3) receptor units were applied to R-8-152 for the Church of Christ interior space.

Anderson Park Baseball Fields

Anderson Park Baseball Fields, which consists of three baseball fields, is located east of I-64, approximately 400 feet south of Cherry Street in CNE 10. A total of 24 receivers (R-10-1 through R-10-24) were placed to cover the infield positions, outfield positions, and bleachers within the project boundary. Through outreach to the City of New Albany parks department, it is estimated the fields are typically used for 12 hours a day, seven days a week for nine months, resulting in a usage factor of 0.38. Assuming there are nine (9) players on two (2) teams with an equal number of spectators using the three (3) fields at least twice per day, it is estimated that the park hosts 216 players and spectators at any given day ([9X4X3] X 2). Multiplying the usage factor (0.38) by the daily visitors (216) gives an average daily number of users that rounds up to 83 users a day. This average daily number of users (83) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (75%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

(83 users per day/2.60 average people per household) X (75% of the property within the study area) = 23.9 (rounds up to 24) receptors.

The 24 receptor units were applied to the 24 receiver locations (R-10-1 through R-10-24) for Anderson Park Baseball Fields within the study area, resulting in one (1) unit for each receiver.

Billy Herman Fields

Billy Herman Fields which consists of four baseball fields, is located east of I-64, and is approximately 400 feet south of Anderson Park Baseball Fields in CNE 10. A total of 35 receivers (R-10-25 through R-10-59) were placed to cover the infield positions, outfield positions, and bleachers within the project boundary. Through outreach to the City of New Albany parks department, it is estimated the fields are typically used for 12 hours a day, seven days a week for nine months, resulting in a usage factor of 0.38. Assuming there are nine (9) players on two (2) teams with an equal number of spectators using the four (4) fields, along with thirteen (13) additional staff and/or spectators at the announcement/concession building and/or fast-pitch booth, at least twice per day, it is estimated that the park hosts 314 players and spectators at any given day ([(9X4X4)+13] X 2). Multiplying the usage factor (0.38) by the daily visitors (314) gives an average daily number of users that rounds up to 120 users a day. This average daily number of users (120) is then divided by the average persons per household (2.60) in Floyd County and multiplied percent of the property area within the project buffer (75%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

(120 users per day/2.60 average people per household) X (75% of the property within the study area) = 34.6 (rounds up to 35) receptors.

The 35 receptor units were applied to the 35 receiver locations (R-10-25 through R-10-59) for Billy Herman Fields within the study area, resulting in one (1) unit for each receiver.

Joe Kraft Basketball Court

Joe Kraft basketball court located at the corner of West Elm Street and West 6th Street within CNE 11 is represented in the model by receiver R-11-2. It is assumed that 25% of the 40 residential houses in the neighborhood would utilize the playground any given day, rounding up to an estimated 10 daily users. It is estimated that the park may be used up to 12 hours per day (minimal lighting is located on the court) and seven days per week for 12 months of the year, resulting in a usage factor of 0.50. Multiplying the usage factor (0.50) by the total assumed daily users (10) gives an average daily number of users that rounds up to five. This average daily number of users (5) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (100%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

(5 users per day/2.60 average people per household) X (100% of the property within the study area) = 1.9 (rounds up to 2) receptors.

The two (2) receptor units were applied to the one (1) receiver (R-11-2) at Joe Kraft basketball court.

Revelation Tabernacle Food Distribution Center

Revelation Tabernacle Food Distribution Center is located at 602 West Market Street within CNE 11 and is represented by one receiver, R-11-37. Based on website research into the foundations activities, it is estimated that 130 food packages are distributed each week (resulting in 26 per day) and the facility is open for eight hours per day, five days per week for 12 months of the year, resulting in a usage factor of 0.24. Multiplying the usage factor (0.24) by the total assumed daily users (26) gives an average daily number of users that rounds up to seven (7) users a day. This average daily number of users (7) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (50%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (7 users per day/2.60 average people per household) X (50% of the property within the study area) = 1.4 (rounds up to 2) receptors.

The two (2) receptor units were applied to R-11-37 for the Revelation Tabernacle Food Distribution Center.

Christ Tabernacle Pentecostal

Christ Tabernacle Pentecostal is located at 425 Scribner Drive within CNE 12 and is represented in the model by receiver R-12-1. For the interior space (NAC D), staff indicated that the church has capacity for an estimated 25 regular attendees. Based on the occupation of this building estimated (via church signage) at seven and a half hours per day and four days per week for 12 months of the year, a usage factor of 0.18 was calculated for this facility. Multiplying the usage factor (0.18) by the total assumed visitors (25) gives an average daily number of users that rounds up to five (5). This average daily number of users (5) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (100%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (5 users per day/2.60 average people per household) X (100% of the property within the study area) = 1.9 (rounds up to 2) receptors.

The two (2) receptor units were applied to R-12-1 for the Christ Tabernacle Pentecostal interior space.

Pleasant Home Southern Baptist Church

Pleasant Home Southern Baptist Church is located at 411 West First Street within CNE 12 and is represented in the model by receiver R-12-2. For the interior space (NAC D), it was estimated that the church has capacity for an estimated 25 regular attendees. Based on the occupation of this building estimated (via church signage) at three hours per day and two days per week for 12 months of the year, a usage factor of 0.04 was calculated for this facility. Multiplying the usage factor (0.04) by the total assumed visitors (25) gives an average daily number of users of one (1). This average daily number of users (1) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (100%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

(1 user per day/2.60 average people per household) X (100% of the property within the study area) = 0.4 (rounds up to 1) receptor.

The one (1) receptor unit was applied to R-12-2 for the Pleasant Home Southern Baptist Church interior space.

Floyd County Public Library

Floyd County library is located on West Spring Street and Scribner Drive within CNE 12. The library is represented in the model by one receiver, R-12-3, at the outdoor seating at the front entrance. Through outreach to the library staff, it is estimated that the library has 110,000 visitors each year and 25 percent of daily visitors use the outdoor seating for ten hours a day, six days a week, nine months of the year, resulting in a usage factor of 0.27. The number of annual users (110,000) was divided by 365 (days per year) and multiplied by 25 percent to get 76 daily visitors. Multiplying the usage factor (0.27) by the total assumed daily users (76) gives an average daily number of users that rounds up to 21. This average daily number of users (21) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (100%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

(21 users per day/2.60 average people per household) X (100% of the property within the study area) = 8.1 (rounds up to 9) receptors.

The nine (9) receptor units were applied to the one (1) receiver (R-12-3) at the Floyd County Library outdoor seating area.

New Albany Flow Park

New Albany Flow Park, which consists of trails, a skate park, a basketball court, a playground, and an amphitheater, is located east south of West Main Street along the Ohio River in CNE 12. A total of three receivers (R-12-19 through R-12-21) were placed 50 feet from the edge of I-64 within the project boundary. Through outreach to the Carnegie Center, it is estimated the park attracts 18,000 annual visitors. It was assumed the park is typically used for 12 hours a day, seven days a week for 12 months of the year, resulting in a usage factor of 0.50. The number of annual users (18,000) was divided by 365 (days per year) to get 50 daily visitors. Multiplying the usage factor (0.50) by the daily visitors (50) gives an average daily number of users that rounds up to 25 users a day. This average daily number of users (25) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the percent of the property area within the project boundary (25%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

(25 users per day/2.60 average people per household) X (25% of the property within the study area) = 2.4 (rounds up to 3) receptors.

The three (3) receptor units were applied to the three (3) receiver locations (R-12-19 through R-12-21) for Flow Park, resulting in one (1) unit for each receiver.

New Beginnings Community Church Trail

New Beginnings Community Church trail is located at 104 Wooded Valley Drive within CNE 15 and is represented in the model by receiver R-15-1. For the trail (NAC C), website research indicated that it has the potential for up to 40 daily users including parishioners, staff, and members of the community. Based on the hours shown on the website, it was estimated the trail may be used up to four hours per day and five days per week for 12 months of the year, resulting in a usage factor of 0.12 for this trail. Multiplying the usage factor (0.12) by the total assumed users (40) gives an average daily number of users that rounds up to five (5). This average daily number of users (5) is then divided by the average persons per household (2.60) in Floyd County and multiplied by the length of trail within the project buffer. The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (5 users per day/2.60 average people per household) X (250 feet of trail within 500-foot study area / 1,000 feet of trail) = 0.48 (rounds up to 1) receptor.

The one (1) receptor unit was applied to R-15-1 for the New Beginnings Community Church trail.

Autumn Woods Health Campus

Autumn Woods Health Campus is an assisted senior living facility within CNE 18 with five (5) outdoor seating common spaces (NAC C), each represented in the model by a receiver (R-18-74 through R-18-78). There are no patios or balconies associated with specific units on the property. To calculate the number of units at each receiver representing an outdoor space, the facility was called to determine the total number of overnight units (93 senior living apartments) and approximate number of people who spend time outside per day. The facility suggested 20 people spend time outdoors each day per space, which roughly corresponds to the total number of units (93) divided by the number of outdoor seating common spaces (5) identified (93/5 = 18.6, rounds up to 19). Because light posts exist on the property, it was estimated the outdoor seating common spaces may be used up to 18 hours per day and seven days per week for 12 months of the year, resulting in a usage factor of 0.75. Multiplying the usage factor (0.75) by the total assumed users per space (20) gives an average daily number of users of 15. This average daily number of users (15) is then divided by the average persons per household (2.60) in Floyd County and multiplied percent of the property area within the project buffer (75%). The following algorithm was used to calculate the appropriate number of receptors per receiver:

> (15 users per day/2.60 average people per household) X (75% of the property within the study area) = 4.33 (rounds up to 5) receptors.

Five (5) receptor units were applied to each of the five (5) outdoor common space receivers (R-18-74 through R-18-78) for Autumn Woods Heath Campus.

4.4. Determination of Existing Noise Levels

Existing noise level measurements were collected at ten (10) representative sites within the study area on June 22nd and 23rd, 2021. **Table 3** lists these sites and identifies the time of data collection and the traffic mix and observed speed at each location. Measurement sites were selected at Wesley Chapel UMC Playground, Anderson Park Baseball Fields, West Haven Cemetery, and residential areas (NAC B). The locations were selected to cover various distances, CNEs, and variations in topography.

The measurements were made in accordance with FHWA and INDOT guidelines using an integrating sound level analyzer meeting American National Standard Institute and International Electro Technical Commission Type 1 specifications. These short-term measurements were conducted using a Larson-Davis Model Lxt1 sound level meter (serial number 6392). The duration of the measurement at each site was 20 minutes. Calibration on the meter was checked before and after field work using a Larson-Davis Model Cal 200 (serial number 16642). During the measurements the temperature was generally around 72 degrees Fahrenheit and winds were light, having little effect on sound propagation over moderate distances. Temperature, humidity, and winds speeds were within the manufacturer's recommended guidelines for operation of the sound level meter.

The noise field measurement sites (FS), FS-1 through FS-10, are presented on the maps in **Appendix A**. The measured noise levels at sites FS-1 through FS-10 ranged from 50.2 to 72.4 dB(A) L_{eq}. The field data sheets are presented in **Appendix B** of this report and the sound level analyzer laboratory calibration certificates are presented in **Appendix C** of this report.

Measurement results were used to validate the noise model specific to this project for use in this analysis.

Table 3. Measured Existing Noise Levels

Field Measurement Site	Site Description	Date	Start Time	Duration	Traffic[1]						Speed (mph)	Noise Level, dBA L_{eq}
					Roadway	A[a]	MT[b]	HT[c]	MC[d]	Buses[e]		
FS-1	Wesley Chapel Playground	06/22/21	10:12	20 min	US 150 NB	588	15	42	0	6	60	56.5
					US 150 SB	696	750	12	33	0		
FS-2	Single-family residence Kelleys Ridge / Old Vincennes	06/22/21	11:51	20 min	I-64 EB	1899	42	288	0	12	65	60.7
					I-64 WB	1665	30	333	0	9		
FS-3	Single-family residence at Murvin Dr	06/22/21	11:17	20 min	I-64 EB	1794	27	246	0	3	65	50.2
					I-64 WB	1695	66	285	9	12		
FS-4	Single-family residence at 784 Captain Frank Rd	06/22/21	14:10	20 min	I-64 EB	1479	27	252	0	0	65	62.1
					I-64 WB	1890	39	306	3	3		
FS-5	Single-family residence at 640 W 5th St	06/22/21	13:34	20 min	I-64 EB	1419	18	294	0	9	65	68.8
					I-64 WB	1614	27	279	6	3		
FS-6	Anderson Park Baseball Fields	06/23/21	09:57	20 min	I-64 EB	1422	36	282	0	3	65	62.5
					I-64 WB	1341	18	303	3	6		

Field Measurement Site	Site Description	Date	Start Time	Duration	Traffic[1]						Speed (mph)	Noise Level, dBA L_{eq}
					Roadway	A[a]	MT[b]	HT[c]	MC[d]	Buses[e]		
FS-7	West Haven Cemetery	06/23/21	10:32	20 min	I-64 EB	1485	21	300	3	12	65	67.1
					I-64 WB	1440	21	267	6	12		
FS-8	Single-family residence at 331 Kenzig Rd	06/23/21	11:25	20 min	I-265 EB	1854	27	204	0	3	65	62.4
					I-265 WB	1566	18	171	0	3		
FS-9	Single-family residence at 100 Glenmill Rd	06/23/21	14:38	20 min	I-265 EB	1974	30	144	3	0	65	72.4
					I-265 WB	2331	12	195	9	18		
FS-10	Single-family residence near 120 Royal Ct	06/23/21	13:57	20 min	I-265 EB	1905	18	123	3	9	65[f]	62.4
					I-265 WB	1944	18	195	3	15		

[1] Vehicle counts are normalized to 1-hour duration and as classified as follows:

[a] Autos (A) defined as vehicles with 2 axles and 4 tires.

[b] Medium trucks (MT) defined as vehicles with 2 axles and 6 tires

[c] Heavy trucks (HT) defined as vehicles with 3 or more axles

[d] Motorcycle (MC) defined as vehicles with 2 or 3 wheels

[e] Buses defined as vehicles carrying more than 9 passengers

[f] Westbound truck speeds modeled at 55 mph due to road curvature and an approaching 55 mph posted speed limit zone

4.5. Traffic Noise Model

The traffic noise analysis was performed using the FHWA's TNM. TNM was first released in March 1998. Version 2.5 of the model was released in April 2004 and is the latest approved version. TNM estimates vehicle noise emissions based on mean (average) noise emission levels for three classes of vehicles used for this analysis: automobiles, medium trucks (2-axle), and heavy trucks (3-axle or more). The predicted noise levels for the existing year (2019) and design year (2046) build alternative conditions were based on PM peak hour volumes and vehicular fleet mixes for the years 2019 and 2046, as the PM peak volumes were highest thus representing the worst (noisiest) traffic hour when traveling at LOS C speeds or better. Where PM peak hour volumes were anticipated to be worse than LOS C, an equivalent traffic volume that would produce a LOS C was used instead. Posted speeds were used in the models based on speeds observed in the field during the noise measurements.

Terrain and other roadway features were input in to TNM. These inputs include roadway widths (including inner and outer shoulders) and elevations, receiver elevations, intervening terrain, and ground cover. Based on this input data, TNM uses its acoustic algorithms to predict noise levels at receiver locations by considering sound propagation divergence, intervening ground, barriers, building rows, and vegetation. In accordance with the procedure in INDOT's Noise Policy, receptors located within 500 feet of the edge of pavement of the build alternative were assessed for traffic noise impacts.

Receptors are defined as discrete or representative locations in a noise sensitive area(s). Receivers are defined as points where the noise model calculates the noise level. A receiver in the noise model may represent multiple receptors or units.

4.6. Model Validation

Existing noise level measurements were taken at ten (10) representative locations. Traffic counts and vehicle classification were collected concurrently with the noise measurement. Vehicle classifications for the field measurements include passenger vehicles (automobiles), medium trucks, heavy trucks, buses, and motorcycles.

To validate TNM, the measured noise levels were compared to the modeled noise levels using the same traffic volumes, speeds, and vehicle types that were present during each field measurement. **Table 4** summarizes the results of the measured and modeled noise levels at the field measurement sites. Since the TNM modeled field data were within +/-3 dB of the measured noise levels, the model is validated for this study.

The field measurements and the modeled noise levels, using traffic counts taken during the field noise measurements, are used to validate the noise model. These values do not represent the existing worst (noisiest) hour traffic noise levels used throughout the remainder of the noise analysis. These traffic values were only used for model validation.

Table 4. Comparison of Measured and Modeled Noise Levels

Field Measurement Site	Noise Level, dBA $L_{eq(h)}$		Difference
	Measured	Modeled	
FS-1	56.5	55.3	-1.2
FS-2	60.7	60.1	-0.6
FS-3	50.2	52.8	2.6
FS-4	62.1	64.1	2.0
FS-5	68.8	71.7	2.9
FS-6	62.5	63.9	1.4
FS-7	67.1	68.8	1.7
FS-8	62.4	60.7	-1.7
FS-9	72.4	74.6	2.2
FS-10	62.4	65.3	2.9

5. Noise Modeling

TNM was used to model existing year (2019) and design year (2046) worst hourly traffic noise levels within the study area. A total of 836 TNM noise receivers representing 927 noise-sensitive receptor units were modeled for the existing and proposed condition, including 744 receivers representing 799 Activity Category B receptor units (note six of these units qualify as a historic, 4(f) property), 83 receivers representing 114 Category C receptor units (note two of these units qualify as a historic, 4(f) property), four (4) receivers representing eight (8) Category D receptor units, and five (5) receivers representing six (6) Category E receptor units. The location of each receiver is shown on the maps in **Appendix A** of this report. The receivers were modeled five feet above ground for ground level receivers, and an additional ten feet was added to each receiver at the second story or above based on floor (e.g., 15 feet for second story receivers). The modeled noise levels are presented by receiver in **Appendix D** of this report. Receiver identifications (IDs) with a decimal point (.) indicate floor. For example, R-18-1.1 indicates first floor and R-18-1.2 indicates second floor. If there is not a decimal point, it is first floor.

Activity Category C land uses that do not have an exterior area of frequent human use are categorized as Activity Category D land uses, which are evaluated for interior impacts. Receivers R-8-152 (Church of Christ), R-11-37 Revelation Tabernacle Food Distribution Center, R-12-1 (Christ Tabernacle Pentecostal), and R-12-2 (Pleasant Home Southern Baptism Church) were modeled for NAC D (interior) use because they do not have exterior use. Using the values given in Table 6 of FHWA's *Highway Traffic Noise: Analysis and Abatement Guidance*, a building noise reduction factor of 25 dB for masonry buildings with at least single glazed windows (based on observed building material and window type in the field) was applied to modeled exterior noise levels to determine interior noise levels at these receivers. No impacts are predicted at the NAC D receivers based on the estimated interior noise levels.

Receivers R-12-4 (HP1) and R-12-5 (HP2) are commercial offices that are eligible for the National Register of Historic Places and would be protected by Section 4(f). As such, both qualify as a NAC C, which utilize an NAC that approaches (within 1 dB(A)) or exceeds 67 dB(A) $L_{eq(h)}$. Receivers R-11-19 (HP3), R-11-20 (HP4), R-11-34 (HP5), R-6-17 (HP6), R-16-21 (HP7), and R-16-62 (HP8) are single-family residences (NAC B) that are also eligible for the National Register of Historic Places and would be protected by Section 4(f). Note that R-11-34 (HP5), R-16-21 (HP7), and R-16-62 (HP8) represent larger historic districts with the worst case predicted design year noise level.

6. Noise Impacts and Abatement

6.1. Noise Impact Assessment

Existing year (2019) worst (noisiest) traffic hour exterior noise levels range from 39.9 to 74.8 dB(A) $L_{eq(h)}$. Existing year (2019) worst traffic hour interior noise levels range from 29.5 to 39.9 dB(A) $L_{eq(h)}$.

Worst traffic hour exterior noise levels in the design year (2046) range from 41.0 to 75.9 dB(A) $L_{eq(h)}$. Worst traffic hour interior noise levels in the design year (2046) range from 30.6 to 41.3 dB(A) $L_{eq(h)}$. Existing and design year worst traffic hour noise levels are found in **Appendix D** of this report. The locations of the receivers are shown on the traffic analysis noise maps in **Appendix A**.

Predicted future design year (2046) noise levels adjacent to the proposed project would approach or exceed the NAC at 158 receiver locations representing 150 Activity Category B receptor units and 14 Category C receptor units. The noise levels at these 164 receptor units would range from 66.0 to 75.9 dB(A) $L_{eq(h)}$.

Predicted future noise level changes range from a 2.5 dB(A) increase to a 0.5 dB(A) decrease for the impacted receptors. Predicted future noise level changes range from a 2.9 dB(A) increase to a 7.2 dB(A) decrease for all receptors analyzed. The noise level increases are generally due to the roadway widening and lanes shifting closer to some receptors, while the decreases at receivers in CNE 6 and CNE 7 are due to system interchange lanes shifting further away. Substantial noise level increases, 15.0 dB(A) as defined in Section 3.2, are not projected to occur. No impacts are predicted at the NAC D receiver based on the estimated interior noise levels.

Receivers R-12-4 (HP1) and R-12-5 (HP2) were modeled at commercial offices that are eligible for the National Register of Historic Places and would be protected by Section 4(f); therefore, they have been analyzed as Activity Category C receptors. R-12-4 (HP1) has a predicted existing noise level of 66.9 dB(A) and a predicted design year noise level of 67.9 dB(A), resulting in a noise level increase of 0.8 dB(A). R-12-5 (HP2) has a predicted existing noise level of 66.6 dB(A) and a predicted design year noise level of 67.9 dB(A), resulting in a noise level increase of 1.3 dB(A).

Receivers R-11-19 (HP3), R-11-20 (HP4), R-11-34 (HP5), R-6-17 (HP6), R-16-21 (HP7), and R-16-62 (HP8) are single-family residences (NAC B) that are also eligible for the National Register of Historic Places and would be protected by Section 4(f). Note that R-11-34 (HP5), R-16-21 (HP7), and R-16-62 (HP8) represent larger historic districts with the worst case predicted design year noise level. R-11-19 (HP3) has a predicted existing noise level of 68.1 dB(A) and a predicted design year noise level of 68.6 dB(A), resulting in a noise level increase of 0.5 dB(A). R-11-20 (HP4) has a predicted existing noise level of 68.2 dB(A) and a predicted design year noise level of 68.6 dB(A), resulting in a noise level increase of 0.4 dB(A). R-11-34 (HP5) has a predicted existing noise level of 57.3 dB(A) and a predicted design year noise level of 57.9 dB(A), resulting in a noise level increase of 0.6 dB(A). R-6-17 (HP6) has a predicted existing noise level of 66.8 dB(A) and a predicted design year noise level of 65.9 dB(A), resulting in a noise level decrease of 0.9 dB(A). R-16-21 (HP7) has a predicted existing noise level of 71.5 dB(A) and a predicted design year noise level of 72.8 dB(A), resulting in a noise level increase of 1.3 dB(A). R-16-62 (HP8) has a predicted existing noise level of 65.4 dB(A) and a predicted design year noise level of 67.9 dB(A), resulting in a noise level increase of 2.5 dB(A).

6.2. Noise Abatement Measures

Based on the requirements of 23 CFR 772 and within the framework of the INDOT Noise Policy, various methods were reviewed to mitigate the noise impact of the preferred alternative. Among the mitigation options considered were those listed below.

- Restricting truck traffic to specific times of the day.
- Prohibiting truck traffic.
- Altering horizontal and vertical alignments.
- Acquiring property for construction of noise barriers or berms.
- Acquiring property to create buffer zones to prevent development that could be adversely impacted.
- Soundproofing public use or nonprofit institutional buildings in land use Activity Category D only.
- Constructing berms (linear earthen mounds).
- Installing noise barriers (a wall located between the highway and receptors).

Restricting or prohibiting trucks is beyond the scope of this project and would require changes in legislation. Design criteria and recommended termini for the proposed project do not allow for sufficient changes in alignment to provide a noticeable change in the traffic noise levels at the abutting properties. A 15-foot-tall earthen noise berm would have a footprint ranging in width from 35 to 95 feet. Therefore, it is neither feasible nor reasonable to construct noise berms within the study area without acquiring substantial amounts of right-of-way. Soundproofing of buildings is not necessary as noise impact is not predicted at Activity Category D land uses. The construction of noise barriers appears to be the most feasible and reasonable method to mitigate noise impact for this project. Abatement is recommended for consideration where it is feasible and reasonable to construct a noise barrier.

A noise analysis identifies "where noise abatement is feasible and reasonable, and locations with impacts that have no feasible or reasonable noise abatement alternatives." The most efficient location for a noise barrier is as close to the source or the receiver as possible. Therefore, in the areas of the projected noise impacts where a noise barrier was feasible to analyze, noise barriers were generally modeled five feet off the proposed edge of the pavement of I-64, I-265, and US 150, or ten feet off the right-of-way. Sight line distance along I-265 and applicable ramps were considered as necessary.

Factors to be considered in determining noise abatement feasibility, as defined in the INDOT Noise Policy, are listed below.

- Acoustic Feasibility: INDOT requires that noise barriers achieve a 5 dB(A) reduction at a majority (greater than 50%) of the impacted receptors.
- Engineering Feasibility: INDOT requires noise abatement measures to be based on sound engineering practices and standards and requires that any measures be evaluated at the optimum location.

Factors to be considered in determining reasonableness, as defined in the INDOT Noise Policy, are listed below.

Maximum Square Footage per Benefited Receptor: For a noise abatement measure to be reasonable, the required barrier area (in square feet) per benefited receptor must be less than or equal to the allowable barrier area per benefited receptor for that noise abatement location. The square footage of the barrier area will be divided by the number of benefited receptors (those who would receive a reduction of at least 5 dB(A)). The allowable maximum square footage per benefited receptor in Indiana is 1,000 square feet per benefited receptor if a majority (greater than 50%) of the nearby receptors in a given CNE were *not* constructed prior to the roadway. Development in which a majority (greater than 50%) of the receptors *were* in place prior to the initial construction of the roadway in its current state (functional classification) will receive additional consideration for noise abatement, and the allowable maximum square footage per benefited receptor that will be considered is 1,250 square feet per benefited receptor.

- Noise Reduction Design Goal (NRDG): INDOT's goal for substantial noise reduction is to provide at least a 7 dB(A) reduction for a majority (greater than 50%) of the benefited first row receptors in the design year.
- Views of Residents and Property Owners: A survey will be mailed to each benefited receptor to consider the views of residents and property owners for abatement found to be feasible and reasonable. The concerns and opinions of the residents and property owners are balanced with other considerations in determining whether a barrier is appropriate for a given location.

At a minimum, the Handbook requires that noise barriers be analyzed as a noise abatement measure. Eighteen (18) CNEs were identified within the project limits. CNEs 2, 3, 6, 10, 13, 14, and 15 have no impacted receptors with the future (2046) Build alternative and do not require abatement analysis. CNEs 11 and 12 (which include the historic property receptors R-11-19 (HP3), R-11-20 (HP4), R-11-34 (HP5), R-12-4 (HP1) and R-12-5 (HP2)) are directly adjacent to bridges on I-64 that are not being replaced with the project, and noise barriers could not extend on to these bridges; therefore, they would not extend sufficiently past the impacted receptors to reduce noise levels and are not feasible. Abatement analysis was completed for eight (8) noise barriers in the remaining nine (9) CNE areas (CNEs 1, 4, 5, 7, 8, 9, 16, 17 and 18) where impacted noise receptors were identified. Noise barrier locations are shown in **Appendix A**.

Investigation to determine receptors that were in place prior to the initial construction of the roadway in its current state was pursued to determine the cost effectiveness criterion for the noise barrier areas. Construction dates for receptors were determined using Indiana Geographic Information Office county land parcel data and the Indiana Department of Local Government Finance 2020 Real Property database table of improvements.[2] As-Built documentation was used to determine roadway construction date and are as follows:

- I-64: 1963
- I-265: 1970

[2] *Indiana Data Sharing Dashboard, https://www.arcgis.com/apps/dashboards/4302f9d9fd2a4915b5d49826e457d003; Indiana Map, https://maps.indiana.edu/layerGallery.html?category=Land.*

- US 150: 1926

The analyzed noise barriers (NB1 through NB7) were modeled with TNM for the preferred alternative and are described below:

- **NB1 —** located west of US 150 between Old Vincennes Road and the Wesley Chapel entrance roadway, approximately ten feet off the edge of the pavement of US 150 southbound due to terrain features. NB1 is shown on Page A-2 of the figures in **Appendix A**. NB1 meets INDOT's feasibility goal as 100 percent of the impacted receptors achieve a 5 dB(A) reduction. However, the Noise Reduction Design Goal of 7 dB(A) for greater than 50 percent of the first row benefited receptors is not met, with zero percent of first row benefited receptors achieving 7 dB(A) noise reduction. The estimated square footage per benefited receptor (8,700) would also exceed the allowable maximum square footage per benefited receptor of 1,000 per benefited receptor.

- **NB2 —** located north of I-64 approximately 675 feet west of Andres Way and 350 feet east of the Woodland Lakes Drive entrance roadway. NB2 is primarily five feet off the proposed edge of pavement, except for a 500-foot segment that is approximately 15 to 30 feet off the proposed edge of pavement due to terrain features, a 425-foot segment that is ten feet off the right-of-way, and along I-64 over the Quarry Road overpass where the barrier is on the structure being replaced with the project. NB2 is shown on Page A-3 of the figures in **Appendix A**. NB2 meets INDOT's feasibility goal as 100 percent of the impacted receptors achieve a 5 dB(A) reduction. The Noise Reduction Design Goal of 7 dB(A) for greater than 50 percent of the first row benefited receptors is also met with 80 percent of first row benefited receptors achieving 7 dB(A) noise reduction; however, the estimated square footage per benefited receptor (3,525) would exceed the allowable maximum square footage per benefited receptor of 1,000 per benefited receptor.

- **NB3 —** located south of I-64 approximately 175 feet west of Westchester Drive and 280 feet west of Quarry Road. NB3 is primarily ten feet off the right-of-way, except for a 150-foot segment that is ten feet from the proposed edge of pavement along I-64 where the terrain is at a higher elevation. NB3 is shown on Page A-3 of the figures in **Appendix A**. NB3 does not meet INDOT's feasibility goal as only 50 percent of the impacted receptors achieve a 5 dB(A) reduction, and the Noise Reduction Design Goal of 7 dB(A) for greater than 50 percent of the first row benefited receptors is also not met, with zero percent of first row benefited receptors achieving 7 dB(A) noise reduction. The estimated square footage per benefited receptor (28,674) would also exceed the allowable maximum square footage per benefited receptor of 1,000 per benefited receptor.

- **NB4a —** located west of I-64 approximately 705 feet northwest of Captain Frank Road to the Cherry Street overpass bridge. NB4a is shown on Pages A-5 and A-8 of the figures in **Appendix A**. NB4a meets INDOT's feasibility goal as 89 percent of the impacted receptors achieve a 5 dB(A) reduction. However, the Noise Reduction Design Goal of 7 dB(A) for greater than 50 percent of the first row benefited receptors is not met, with only 29 percent of first row benefited receptors achieving 7 dB(A) noise reduction. The estimated square footage per benefited receptor (2,637) would also exceed the allowable maximum square footage per benefited receptor of 1,000 per benefited receptor.

- **NB4b —** located west of I-64 from the Cherry Street overpass bridge to approximately 670 feet south of Commerce Street. NB4b is shown on Page A-9 of the figures in **Appendix A**. NB4b meets INDOT's feasibility goal as 100 percent of the impacted receptors achieve a 5 dB(A) reduction. The Noise Reduction Design Goal of 7 dB(A) for greater than 50 percent of the first row benefited receptors is

also met with 60 percent of first row benefited receptors achieving 7 dB(A) noise reduction; however, the estimated square footage per benefited receptor (1,288) would exceed the allowable maximum square footage per benefited receptor of 1,250 per benefited receptor. It should also be noted that while NB4b was modeled on top of an existing retaining wall for some portions, further coordination with INDOT's Geotechnical Engineering Division indicated a noise barrier would need to be located 10 feet from the existing retaining wall, which would further increase the surface area. The existing retaining wall extends for approximately 800 feet of the barrier alignment and placing the noise barrier 10 feet from this retaining wall would increase the height of the noise barrier by 10 feet for this section. This would add 8,000 square feet to the noise barrier, resulting in an estimated square footage of 1,788 per benefited receptor.

Note that NB4a and NB4b were originally analyzed as one barrier (NB4); however, the barriers were re-analyzed separately in an effort to find a more reasonable barrier for NB4b. NB4 was a two-wall barrier system. Because the Cherry Street overpass bridge is not being replaced with the project, the first segment was north of the Cherry Street overpass, and the second segment was south of the Cherry Street overpass. The Noise Reduction Design Goal of a 7 dB(A) for greater than 50% of the first row benefited receptors is not met with NB4, with only 41 percent of first row benefited receptors achieving 7 dB(A) noise reduction. In addition, the estimated square footage per benefited receptor (2,198) would exceed the allowable maximum square footage per benefited receptor of 1,250 per benefited receptor.

- **NB5 —** located east of I-64 approximately 75 feet north of Cottom Street and 600 feet south of Cherry Street. NB5, a two-barrier system, is five feet off the proposed edge of pavement along I-64 westbound. Because the Cherry Street overpass bridge is not being replaced with the project, the first segment is north of the Cherry Street overpass, and the second segment is south of the Cherry Street overpass. NB5 is shown on Pages A-8 and A-9 of the figures in **Appendix A**. NB5 meets INDOT's feasibility goal as 92 percent of the impacted receptors achieve a 5 dB(A) reduction, and the Noise Reduction Design Goal of 7 dB(A) for greater than 50 percent of the first row benefited receptors is also met with 97 percent of first row benefited receptors achieving 7 dB(A) noise reduction. The estimated square footage per benefited receptor (526) is less than the allowable maximum square footage per benefited receptor of 1,250 per benefited receptor. Therefore, NB5 is both feasible and reasonable pending public input.

- **NB6 —** located east of I-265 from Maevi Drive to 400 feet south of the Green Valley Road overpass. The design of this barrier, including height limitations and a gap near overhead transmission lines between Wedgewood Drive to Redwood Drive, was updated after the final noise report was issued on April 28, 2023 due to conflicts with overhead transmission lines that were identified during utility coordination. NB6 is primarily five feet off the proposed edge of pavement along I-265 eastbound, except between Wedgewood Drive and Redwood Drive, where the barrier is ten feet off the right-of-way and includes an approximate 110-foot gap to provide sufficient clearance for overhead transmission lines. NB6 is shown on Pages A-6 and A-7 of the figures in **Appendix A**. NB6 meets INDOT's feasibility goal as 100 percent of the impacted receptors achieve a 5 dB(A) reduction, and the Noise Reduction Design Goal of 7 dB(A) for greater than 50 percent of the first row benefited receptors is also met with 92 percent of first row benefited receptors achieving 7 dB(A) noise reduction. The estimated square footage per benefited receptor (409) is less than the allowable maximum square footage per benefited receptor of 1,000 per benefited receptor. Therefore, NB6 is both feasible and reasonable pending public input.

- **NB7 —** located west of I-265 from approximately 235 feet south of Village Pine Drive to 630 feet north of Barrington Court and is five feet off the proposed edge of pavement, except along the I-265 westbound State Street off-ramp where it is 15 feet off the proposed edge of pavement due to sight line constraints. NB7 is shown on Pages A-6 and A-7 of the figures in **Appendix A**. NB7 meets INDOT's feasibility goal as 100 percent of the impacted receptors achieve a 5 dB(A) reduction, and the Noise Reduction Design Goal of 7 dB(A) for greater than 50 percent of the first row benefited receptors is also met with 100 percent of first row benefited receptors achieving 7 dB(A) noise reduction. The estimated square footage per benefited receptor (593) is less than the allowable maximum square footage per benefited receptor of 1,000 per benefited receptor. Therefore, NB7 is both feasible and reasonable pending public input.

Each barrier is summarized in **Table 5**. The table presents the proposed barrier location or identification number, the CNE area, barrier length and height, barrier surface area, number benefited receptors adjacent to the proposed noise barrier, and a yes or no statement as to whether a noise barrier meets INDOT's feasibility and reasonableness criteria as previously defined. The square footage per benefited receptor is the surface area of the noise barrier divided by the number of benefited receptors.

Maps showing receiver locations, including impact and benefit status, and the analyzed noise barrier locations are shown on the maps in **Appendix A**. Additional details regarding the noise barrier analysis results are provided in **Appendix E**. If pertinent parameters change substantially during the continuing project design, the noise abatement decision may be changed with the final project design.

Table 5. Noise Barrier Summary

Proposed Barrier Location	CNE Area	Length (feet)	Height (feet)	Benefited Recep-tors	Feasibility Criteria Met?	Design Goal Met?	Area (Square Ft.)	Square Ft. per Benefited Receptor	Square Ft. Threshold[1]	Square Ft. Reasonable Criteria Met?
NB1	1	435	20	1	Yes	No	8,700	8,700	1,000	No
NB2	4	1,939	20	11	Yes	Yes	38,780	3,525	1,000	No
NB3	5	1,593	18	1	No	No	28,674	28,674	1,000	No
NB4a	7	5,274	20	40	Yes	No	105,480	2,637	1,000	No
NB4b	9	1,650	8-14	16	Yes	Yes	20,600	1,288[2]	1,250	No
NB5	8, 10	3,926	10-22	140	Yes	Yes	73,668	526	1,250	Yes
NB6[3]	16, 18	4,416	8-20	196	Yes	Yes	80,102	409	1,000	Yes
NB7	17	3,841	10-18	103	Yes	Yes	61,046	593	1,000	Yes

[1] As described in this section, the maximum allowable square footage criterion shown was determined based on As-Built documentation of dates of initial roadway construction (1963 for I-64, 1970 for I-265, and 1926 for US 150). Per INDOT Noise Policy, the allowable maximum square footage per benefited receptor is 1,000 square feet per benefited receptor if a majority (greater than 50%) of the nearby receptors in a given CNE were not constructed prior to the roadway. Development in which a majority (greater than 50%) of the receptors were in place prior to the initial construction of the roadway in its current state (functional classification) will receive additional consideration for noise abatement, and the allowable maximum square footage per benefited receptor that will be considered is 1,250 square feet per benefited receptor.

[2] With the need to locate this noise barrier 10 feet from an existing retaining wall per INDOT's Geotechnical Engineering Division, the noise barrier would need 10 additional feet of height for the approximate 800-foot length of the retaining wall. This would add 8,000 square feet to the noise barrier, resulting in an estimated square footage of 1,788 per benefited receptor.

[3] This barrier analysis was updated after the final noise report was issued in on April 28, 2023 due to conflicts with overhead transmission lines that were identified during utility coordination. A portion of this barrier was lowered and removed to allow sufficient clearance near the overhead transmission lines.

7. Information for Local Officials

The distances to 66 dB(A) $L_{eq(h)}$ and 71 dB(A) $L_{eq(h)}$, which vary along the project corridor, were developed to assist local planning authorities in developing land use control over the remaining undeveloped lands along the project to prevent further development of incompatible land use. Undeveloped areas exist along both sides of I-64, I-265, and US 150. Note that the distances to each noise level described below are approximations for each area as the topography adjacent to the project roadways varies considerably in the study area.

- In the undeveloped areas of CNE 2 the distance to 66 dBA $L_{eq(h)}$ would be approximately 75 feet from the proposed edge of pavement, and the distance to 71 dB(A) $L_{eq(h)}$ would be approximately 50 feet from the proposed edge of pavement, along the northbound lanes of US 150. The distance to 66 dBA $L_{eq(h)}$ would be approximately 25 feet from the proposed edge of pavement, while the distance to 71 dB(A) $L_{eq(h)}$ would be within the right-of way, along I-64 westbound.
- In the undeveloped area east of CNE 4, the distance to 66 dBA $L_{eq(h)}$ would be approximately 350 feet from the proposed edge of pavement, and the distance to 71 dB(A) $L_{eq(h)}$ would be approximately 200 feet from the proposed edge of pavement, along I-64 westbound.
- In the undeveloped area between CNE 5 and CNE 6, the distance to 66 dBA $L_{eq(h)}$ would be approximately 125 feet from the proposed edge of pavement, and the distance to 71 dB(A) $L_{eq(h)}$ would be approximately 100 feet from the proposed edge of pavement, along I-64 eastbound.
- In the undeveloped area south of CNE 14, the distance to 66 dBA $L_{eq(h)}$ would be approximately 200 feet from the proposed edge of pavement, and the distance to 71 dB(A) $L_{eq(h)}$ would be approximately 100 feet from the proposed edge of pavement, along I-265 eastbound.
- In the undeveloped area north of CNE 17 (between Barrington Court and Green Valley Drive), the distance to 66 dBA $L_{eq(h)}$ would be approximately 250 feet from the proposed edge of pavement, and the distance to 71 dB(A) $L_{eq(h)}$ would be approximately 100 feet from the proposed edge of pavement, along I-265 westbound.

These predictions indicate that noise levels within the distances listed, measured perpendicular to the nearest proposed edge of pavement, would be greater than the NAC of 66 dB(A) $L_{eq(h)}$ for Activity Categories B and C and 71 dB(A) $L_{eq(h)}$ for Activity Category E as described. It is recommended that any future development proposed in the project area be modeled with accurate survey data to avoid creating incompatible land uses adjacent to the project.

8. Public Involvement

As described in the INDOT Noise Policy, INDOT is required to seek the input of owners and residents of properties benefited by proposed noise barriers. The concerns and opinions of the property owners and the unit occupants will be balanced with other considerations in determining whether a barrier is appropriate for a given location. The results of the noise barrier survey are presented in **Table 6**.

The noise analysis identified three noise barrier locations as being feasible and potentially reasonable, NB5, NB6, and NB7. Noise barrier survey postcards were mailed to benefited receptors and businesses that could have their line-of-sight blocked for these three (3) noise barriers on December 20, 2022, asking if they were in favor of a noise barrier near their property. The transmittal letter also included an invitation to a noise public meeting. The noise public meeting was held on January 24, 2023, at the New Albany Schools Educational Support Center. The purpose of the noise public meeting was to educate neighborhood residents on INDOT's Noise Policy and encourage benefited receptors to complete a survey on whether they were in favor of a noise barrier at that location or not. Approximately 58 people attended the public meeting. A second round of survey postcards was mailed to benefited receptors for NB5 and NB7 on February 13, 2023, who did not respond to the original survey for these two (2) noise barriers because a 50% response rate was not received with the first mailing. Hard copies of the survey postcard mailings were hand delivered to 18 residences on Ealy Street for NB5 because all original mailings were returned to sender as undeliverable. Public involvement materials, comments received during the response period, and responses to comments are included in Appendix F.

Per INDOT's Noise Policy, "if the total respondents to the survey do not total a majority (more than 50%) of the benefited receptors and affected property owners, then a second survey will be mailed out to solicit the views of those who did not respond. If a majority of benefited receptors still do not respond, no third survey is required. FHWA and INDOT Project Management will discuss the results of the surveys and determine the next course of action if a majority of benefited receptors do not respond. This may include applying elements of the project's Environmental Justice Community Engagement Plan if present. Failure to respond to the survey by the benefited receptor will not be assumed to count either for or against noise abatement." Because the response rate for NB5 after the second round of surveys was less than 50%, representatives from FHWA, INDOT Project Management, and INDOT Environmental Services discussed NB5 at a meeting on March 28, 2023 and at a follow up meeting on April 14, 2023. It was ultimately decided NB5 would be constructed because 81% of the responders were in favor of construction and because it will mitigate noise impacts in an elevated Environmental Justice census block group.

Based on the results of the analysis and considering the viewpoints of benefited receptors and other considerations, INDOT is planning on constructing noise barriers at selected locations, as described below.

- NB5: located east of I-64 approximately 75 feet north of Cottom Street and 600 feet south of Cherry Street. NB5, a two-barrier system, is five feet off the proposed edge of pavement along I-64 westbound. Because the Cherry Street overpass bridge is not being replaced with the project, the first segment is north of the Cherry Street overpass, and the second segment is south of the Cherry Street overpass.

- NB6: located east of I-265 from Maevi Drive to 400 feet south of the Green Valley Road overpass. NB6 is primarily five feet off the proposed edge of pavement along I-265 eastbound, except between Wedgewood Drive and Redwood Drive where the barrier is ten feet off the right-of-way.
- NB7: located west of I-265 from approximately 235 feet south of Village Pine Drive to 630 feet north of Barrington Court and is five feet off the proposed edge of pavement, except along the I-265 westbound State Street off-ramp where it is 15 feet off the proposed edge of pavement due to sight line constraints.

Factors considered in recommending these noise barriers are as follows:

- Survey of Benefited Receptors. In accordance with the INDOT Noise Policy, surveys were sent to obtain the views of benefited receptors (property owners and residents) and a noise public meeting was held to describe the results of the noise analysis and encourage survey response. Seventeen percent (17%) of NB5 benefited receptors responded, with 81% expressing support. Fifty-four percent (54%) of NB6 benefited receptors responded, with 98% expressing support.[3] Fifty-five percent (55%) of NB7 benefited receptors responded, with 93% expressing support.
- Although the response rate for NB5 was less than 50%, the majority of the responses were in favor of construction and the noise barrier will mitigate noise in an elevated Environment Justice census block group.
- Other Considerations. According to the INDOT Noise Policy, a re-evaluation of the noise analysis will occur during final design. If it is determined that conditions have changed such that noise abatement is not feasible and reasonable, the abatement measures might not be provided.

[3] *After noise barrier public involvement took place, this barrier analysis was updated due to conflicts with overhead transmission lines that were identified during utility coordination. None of the benefited receptors lost (seven total) with the utility easement adjustments responded during the noise barrier public involvement. Therefore, the percent expressing support (98%) is still valid, although the percent of respondents (54%) would be slightly higher based on the current number of benefits with the updated NB6 barrier analysis.*

Table 6. Noise Barrier Survey and Response Statistics

Noise Barrier	Benefited Receptors	Number of Surveys Mailed[1]	Number of Surveys Returned	Percent of Benefited Receptors Responding to Survey	Number of Surveys in Favor of Barrier	Percent of Benefited Receptors in Favor of Barrier[2]
NB5	140	156	26	17%	21	81%
NB6[3]	196	308	166	54%	163	98%
NB7	103	104	57	55%	53	93%

[1] Mailings returned to sender twice because they were vacant were removed from the total number of receptors.

[2] Percent of benefited receptors in favor of the barrier is based on the number of "Yes" responses out of the total number of returned mailers.

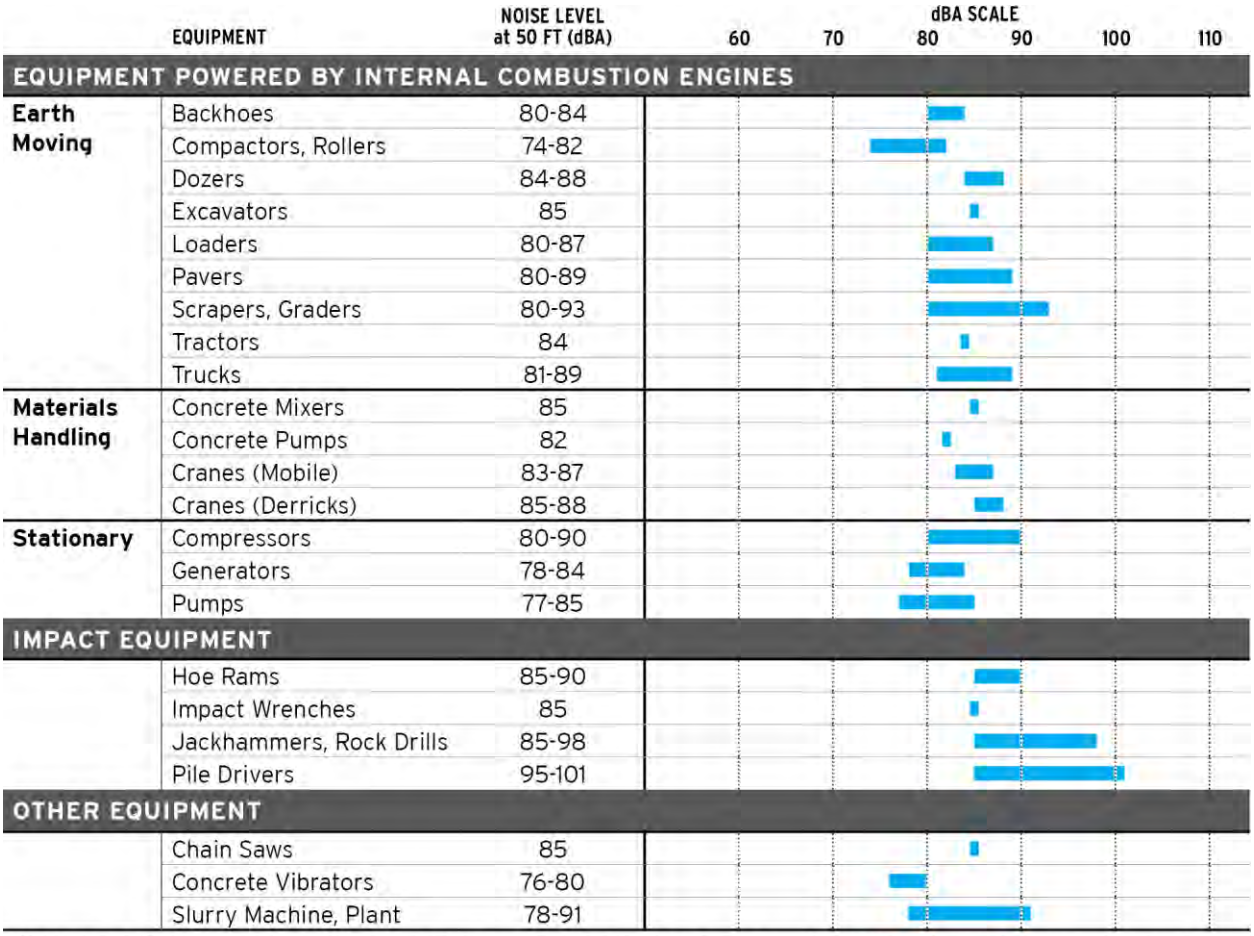
[3] After noise barrier public involvement took place, this barrier analysis was updated due to conflicts with overhead transmission lines that were identified during utility coordination. None of the benefited receptors lost (seven total) with the utility easement adjustments responded during the noise barrier public involvement. Therefore, the percent expressing support (98%) is still valid, although the percent of respondents (54%) would be slightly higher based on the current number of benefits with the updated NB6 barrier analysis.

9. Construction Noise

Construction of the proposed improvements will result in a temporary increase in the ambient noise level along US 150, I-64 and I-265. The major construction elements of this project are expected to be demolition, hauling, grading, and paving. General construction noise impacts for passerby and those individuals living or working near the project can be expected from demolition, earth moving, pile driving, and paving operations. Equipment associated with construction generally includes backhoes, graders, pavers, concrete trucks, compressors, and other miscellaneous heavy equipment.

Figure 3 shows some typical peak operating noise levels for equipment at 50 feet, grouping construction equipment according to mobility and operating characteristics. Considering the temporary nature of specific construction stages, and thus construction noise, impacts are not expected to be substantial. The typical outdoor to indoor noise reduction qualities of the homes, places of worship, schools, and businesses are believed to be sufficient to moderate the effects of intrusive construction noise. INDOT will be sensitive to local needs and may adjust work practices to reduce inconvenience to the public.

Figure 3. Construction Equipment Sound Levels



	EQUIPMENT	NOISE LEVEL at 50 FT (dBA)
EQUIPMENT POWERED BY INTERNAL COMBUSTION ENGINES		
Earth Moving	Backhoes	80-84
	Compactors, Rollers	74-82
	Dozers	84-88
	Excavators	85
	Loaders	80-87
	Pavers	80-89
	Scrapers, Graders	80-93
	Tractors	84
	Trucks	81-89
Materials Handling	Concrete Mixers	85
	Concrete Pumps	82
	Cranes (Mobile)	83-87
	Cranes (Derricks)	85-88
Stationary	Compressors	80-90
	Generators	78-84
	Pumps	77-85
IMPACT EQUIPMENT		
	Hoe Rams	85-90
	Impact Wrenches	85
	Jackhammers, Rock Drills	85-98
	Pile Drivers	95-101
OTHER EQUIPMENT		
	Chain Saws	85
	Concrete Vibrators	76-80
	Slurry Machine, Plant	78-91

SOURCE: FHWA, Effective Noise Control During Nighttime Construction, *https://ops.fhwa.dot.gov/wz/workshops/accessible/schexnayder_paper.htm*

10. Statement of Likelihood

Based on the studies complete to date, the State of Indiana has identified 164 impacted receptor units and has determined that noise abatement is likely, but not guaranteed, at three (3) locations. Each barrier's preliminary location and physical description are provided in **Table 7**.

Table 7. Proposed Noise Barrier Locations

Proposed Barrier Location	CNE Area	Preliminary General Location	GIS Location[1] Start/End (Lat./Long.)	Length (feet)	Height (feet)	Area (Square Ft.)	Material (Construction Material, Surface Texture, Foundation)
NB5	8, 10	East of I-64 from 75 feet north of Cottom Street and 600 feet south of Cherry Street	Start 38°17.366" N, 85°50.0026" W End 38°17.4298" N, 85°50.077" W (*break for Cherry Street overpass*) Start 38°17.4544" N, 85°50.1059" W End 38°17.8707" N 85°50.5814" W	3,926	10-22	73,668	Concrete with drilled shaft footings
NB6	16, 18	East of I-265 from Maevi Drive to 400 feet south of the Green Valley Road overpass	Start 38°18.7336" N, 85°50.6403" W End 38°19.4071" N, 85°50.2555" W	4,416	8-20	80,102	Concrete with drilled shaft footings
NB7	17	West of I-265 from 235 feet south of Village Pine Drive to 630 feet north of Barrington Court	Start 38° 19.4029" N, 85° 50.2986" W End 38°18.8703" N, 85°50.6896" W	3,841	10-18	61,046	Concrete with drilled shaft footings

[1] GIS Location start/end is given in the direction of travel of the roadway.

Noise abatement at these locations is based upon preliminary design criteria. Noise abatement at these locations at this time has been estimated to reduce the noise level by a minimum of 7 dB(A) at a majority of the identified impacted receptors. A re-evaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed such that noise abatement is not feasible and reasonable, the abatement measures might not be provided. The final decision on the installation of any abatement measure(s) will be made upon the completion of the project's final design. The viewpoints of benefited residents and property owners were sought and considered in determining the reasonableness of highway traffic noise abatement measures for the proposed highway construction project. INDOT will

incorporate highway traffic noise considerations in on-going activities for public involvement in the highway program.

11. Conclusion

INDOT has identified those noise receptors that would be exposed to future design year (2046) noise levels approaching or exceeding the FHWA NAC. Predicted future design year (2046) noise levels adjacent to the proposed project would approach or exceed the NAC of 67 dB(A) $L_{eq(h)}$ at 158 receiver locations representing 150 Activity Category B receptor units and 14 Category C receptor units. The noise levels at these 164 receptors would range from 66.0 to 75.9 dB(A) $L_{eq(h)}$.

Eight (8) noise barrier locations (one of which is a two-barrier system) were modeled in the study area. The noise barrier designs ranged from 435 feet to 5,274 feet in length, 8 to 22 feet in height, and ranged in surface area from 8,700 to 105,480 square feet. Noise abatement at these locations is based upon preliminary design criteria. INDOT has determined that noise abatement is likely, but not guaranteed at three (3) locations. Additional details regarding the noise barrier analysis results are provided in **Appendix E**. If pertinent parameters change substantially during the continuing project design, the noise abatement decision may be changed with the final project design.

12. References

Anderson, G. S., C.S.Y. Lee, G.G. Fleming and C. Menge, "FHWA Traffic Noise Model®, Version 1.0 User's Guide", Federal Highway Administration, January 1998, p. 60.

FHWA, "Highway Traffic Noise: Analysis and Abatement Guidance", FHWA-HEP-10-035, https://www.in.gov/indot/files/FHWA-Highway-Traffic-Noise-Analysis-and-Abatement-Guidance-December-2011.pdf, December 2011.

FHWA, Noise Policy FAQs – Frequently Asked Questions, https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/faq_nois.cfm#D4e.

FHWA, "Procedures for Abatement of Highway Traffic Noise and Construction Noise", Code of Federal Regulations, Title 23 Part 772 (23 CFR 722), July 13, 2010.

Indiana Data Sharing Dashboard, GIS Data Harvest Program, 2020 Data Harvest, April 28, 2021, https://www.arcgis.com/apps/dashboards/4302f9d9fd2a4915b5d49826e457d003, Accessed September 22, 2021.

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INDOT, "Traffic Noise Analysis Procedure", https://secure.in.gov/indot/engineering/files/2022-INDOT-Noise-Policy-Signed-Final-101222.pdf, October 12, 2022.

Lau, Michael C., Cynthia S. Y. Lee, Gregg G. Judith L. Rochat, Eric R. Boeker, and Gregg C. Fleming, "FHWA Traffic Noise Model® Users Guide (Version 2.5 Addendum)", Federal Highway Administration, April 2004.

United States Census Bureau, "QuickFacts, Floyd County, Indiana", https://www.census.gov/quickfacts/fact/table/floydcountyindiana/PST045219, Accessed July 16, 2021.

Appendix A. Traffic Noise Analysis Maps

Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
- Feasible Not Reasonable Noise Barrier
- Feasible and Reasonable Noise Barrier
- Not Feasible Noise Barrier
- Proposed Improvements

- Noise Study Area – 500 feet
- Common Noise Environment
- Historic Districts

Note: Receiver ID may represent multiple floors or receptor dwelling units.

N

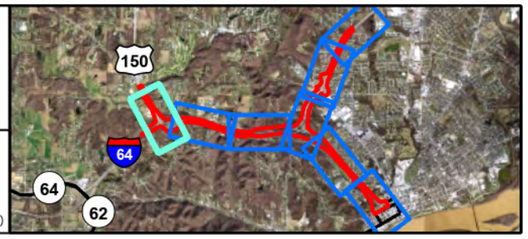
Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

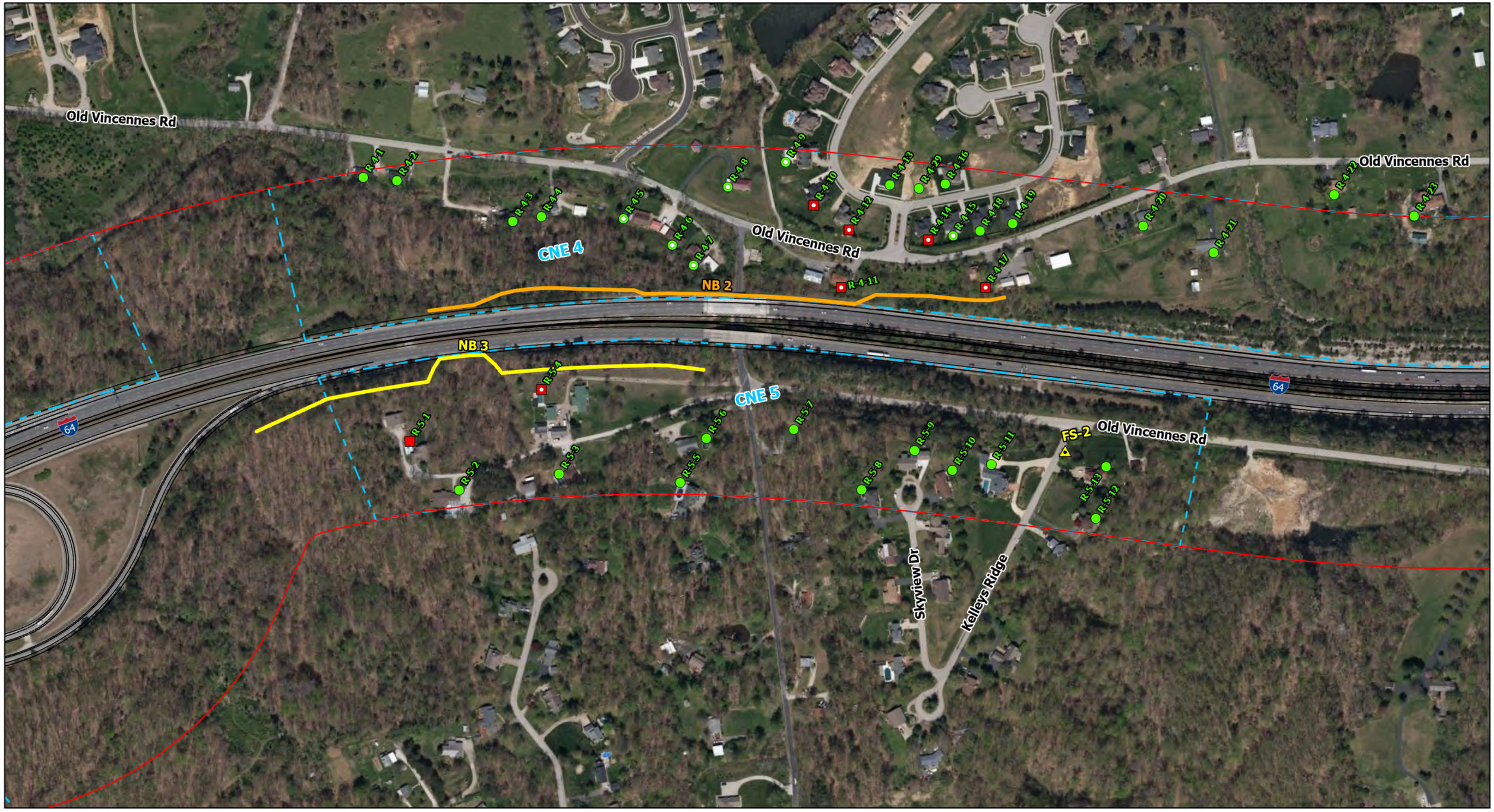
1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES

Graphics created by HNTB Corporation (2022)





Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
- Feasible Not Reasonable Noise Barrier
- Feasible and Reasonable Noise Barrier
- Not Feasible Noise Barrier
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- Common Noise Environment
- Historic Districts

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Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES

Graphics created by HNTB Corporation (2022)

Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
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N

Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES

Graphics created by HNTB Corporation (2022)

Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

Measurement Sites

Feasible Not Reasonable Noise Barrier

Feasible and Reasonable Noise Barrier

Not Feasible Noise Barrier

Proposed Improvements

Noise Study Area – 500 feet

Common Noise Environment

Historic Districts

Note: Receiver ID may represent multiple floors or receptor dwelling units.

Traffic Noise Study

Improve 64 Project

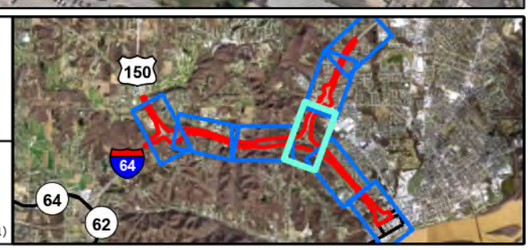
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES

Graphics created by HNTB Corporation (2021)



Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
- Feasible Not Reasonable Noise Barrier
- Feasible and Reasonable Noise Barrier
- Not Feasible Noise Barrier
- Proposed Improvements

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- Common Noise Environment
- Historic Districts

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N

Traffic Noise Study

Improve 64 Project

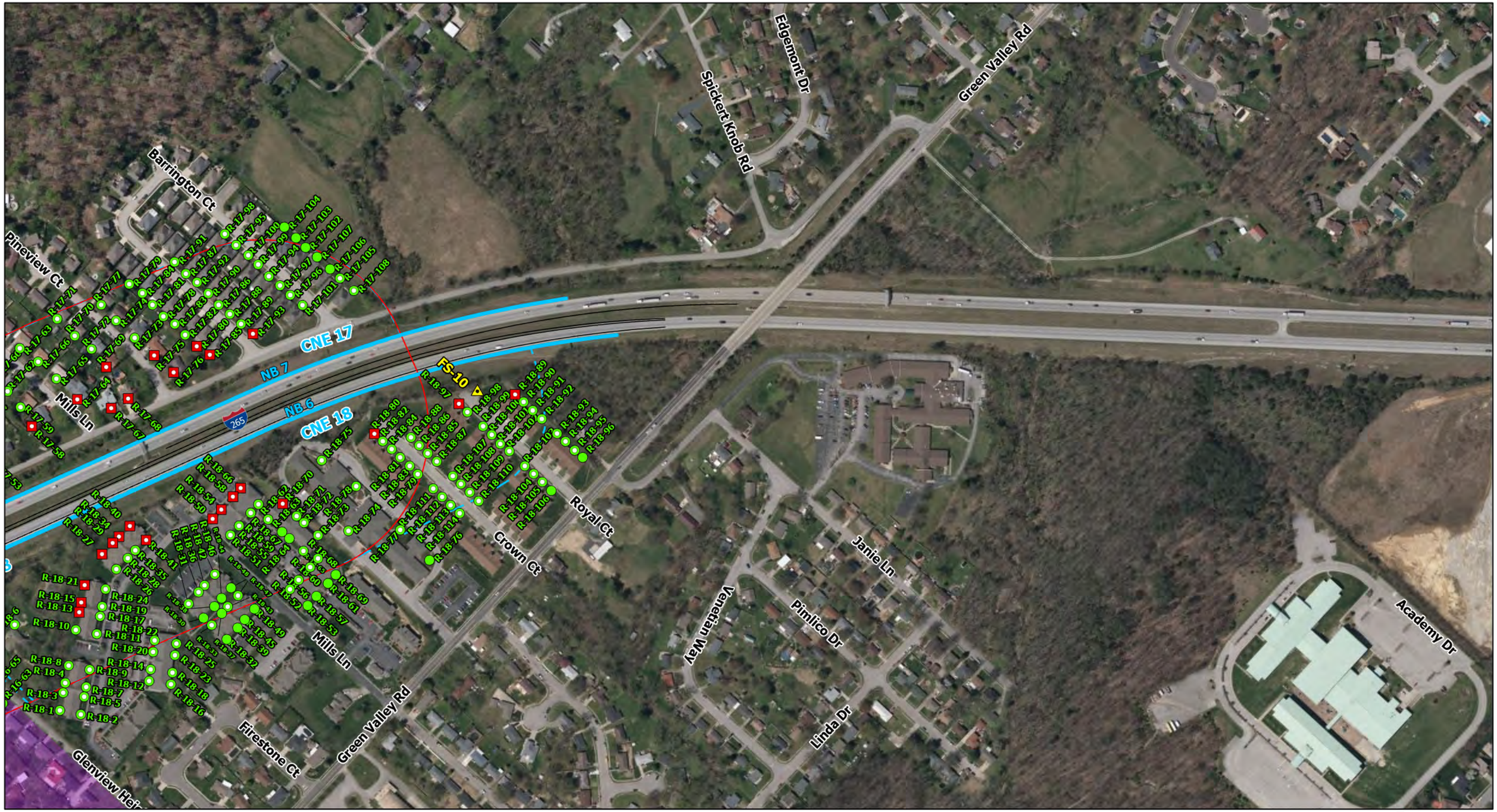
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES

Graphics created by HNTB Corporation (2022)



Receiver
- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

Note: Receiver ID may represent multiple floors or receptor dwelling units.

- Measurement Sites
- Feasible Not Reasonable Noise Barrier
- Feasible and Reasonable Noise Barrier
- Not Feasible Noise Barrier
- Proposed Improvements
- Noise Study Area – 500 feet
- Common Noise Environment
- Historic Districts

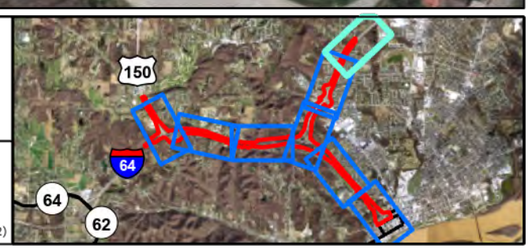
Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES

Graphics created by HNTB Corporation (2022)



Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
- Feasible Not Reasonable Noise Barrier
- Feasible and Reasonable Noise Barrier
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- Common Noise Environment
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N

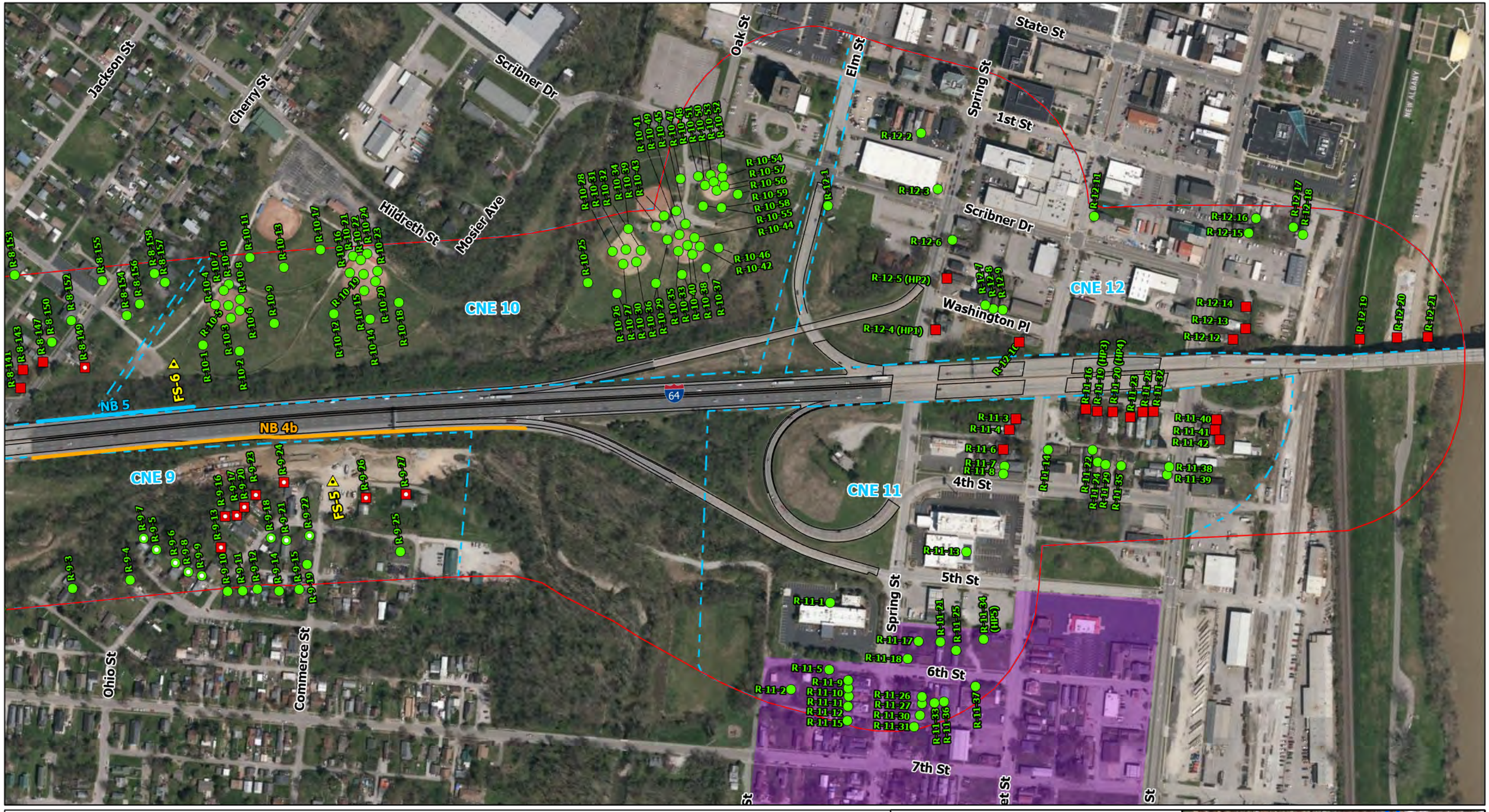
Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES

Graphics created by HNTB Corporation (2021)



Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

Measurement Sites

Feasible Not Reasonable Noise Barrier

Feasible and Reasonable Noise Barrier

Not Feasible Noise Barrier

Proposed Improvements

Noise Study Area – 500 feet

Common Noise Environment

Historic Districts

Note: Receiver ID may represent multiple floors or receptor dwelling units.

N

Traffic Noise Study

Improve 64 Project

Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES

Graphics created by HNTB Corporation (2022)

Appendix B. Noise Measurement Data Sheets

HNTB

NOISE MEASUREMENT DATA SHEET

PROJECT: I-64 ATL JOB #: 78704 BY: P. Srivasta, C. Tegeler

SITE: FS-1 DATE: 06/22/21 TIME: 10:12 AM - 10:32 AM

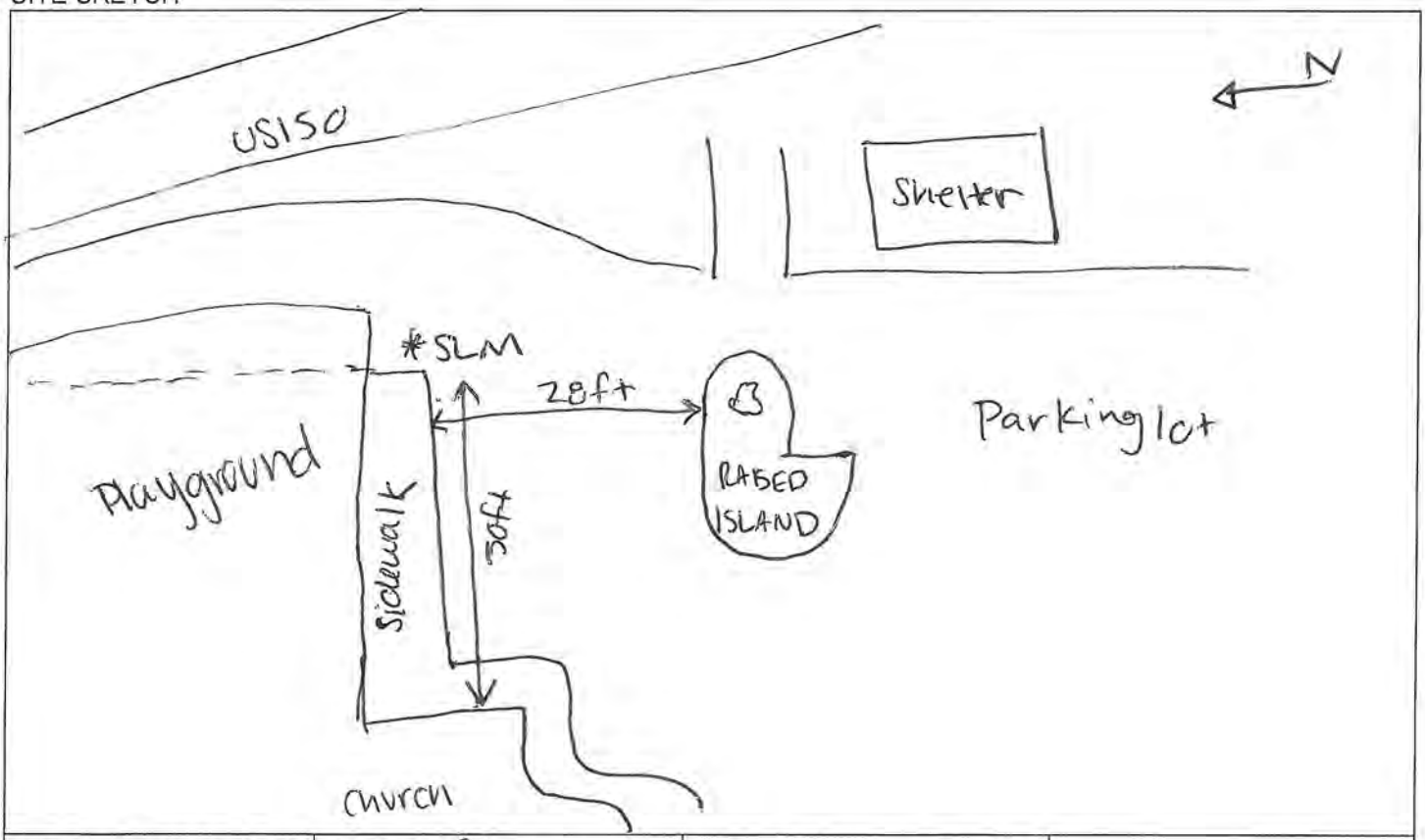
CALIBRATION: 0.11 dB.

RESPONSE: FAST / SLOW WEIGHTING: A / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	US 150 NB	US150 SB
AUTOS	196	250
MED TRKS	5	4
HVY TRKS	14	11
BUS	0	0
MOTORCYCLE	2	0
SPEED	60mph	60mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20 min	Leq [redacted] 56.5	

WEATHER DATA WIND SPEED (MPH) 2.4 DIR. N TEMP. 70 HUMIDITY 50% CLOUD COVER 0%

BACKGROUND NOISE

MAJOR SOURCES

UNUSUAL EVENTS

OTHER NOTES

Lxt-data-001

HNTB

NOISE MEASUREMENT DATA SHEET

PROJECT: I64 ATL JOB #: 78704 BY: P.Srivastava, C.Tegeler

SITE: FS 2 DATE: 6/22/21 TIME: 11:51AM - 12:11 pm

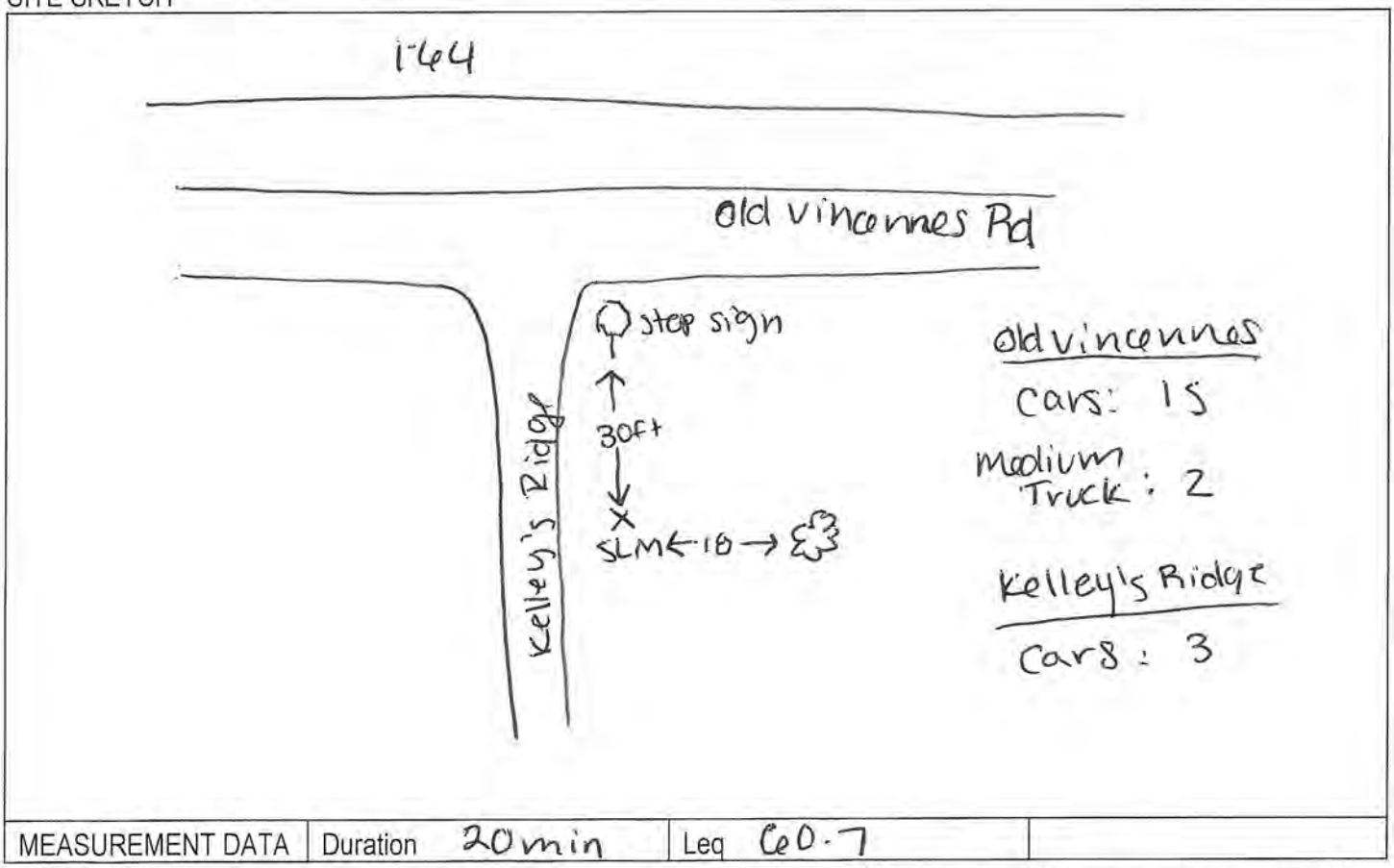
CALIBRATION: -0.01 dB.

RESPONSE: FAST / SLOW WEIGHTING: A / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	I-64 EB	I-64 WB
AUTOS	633	555
MED TRKS	14	10
HVY TRKS	96	111
BUS	0	0
MOTORCYCLE	4	3
SPEED	65 mph	65mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20min	Leq Ce0.7	

WEATHER DATA WIND SPEED (MPH) 2-3 DIR. N TEMP. 68 HUMIDITY 41% CLOUD COVER 0%

BACKGROUND NOISE

MAJOR SOURCES

UNUSUAL EVENTS

OTHER NOTES

Lxt_data.OCB

HNTB

NOISE MEASUREMENT DATA SHEET

PROJECT: I-64ATL JOB #: 78704 BY: P.Srivasta, C.Tegeler

SITE: FS-3 DATE: 06/22/2021 TIME: 11:17AM - 11:37AM

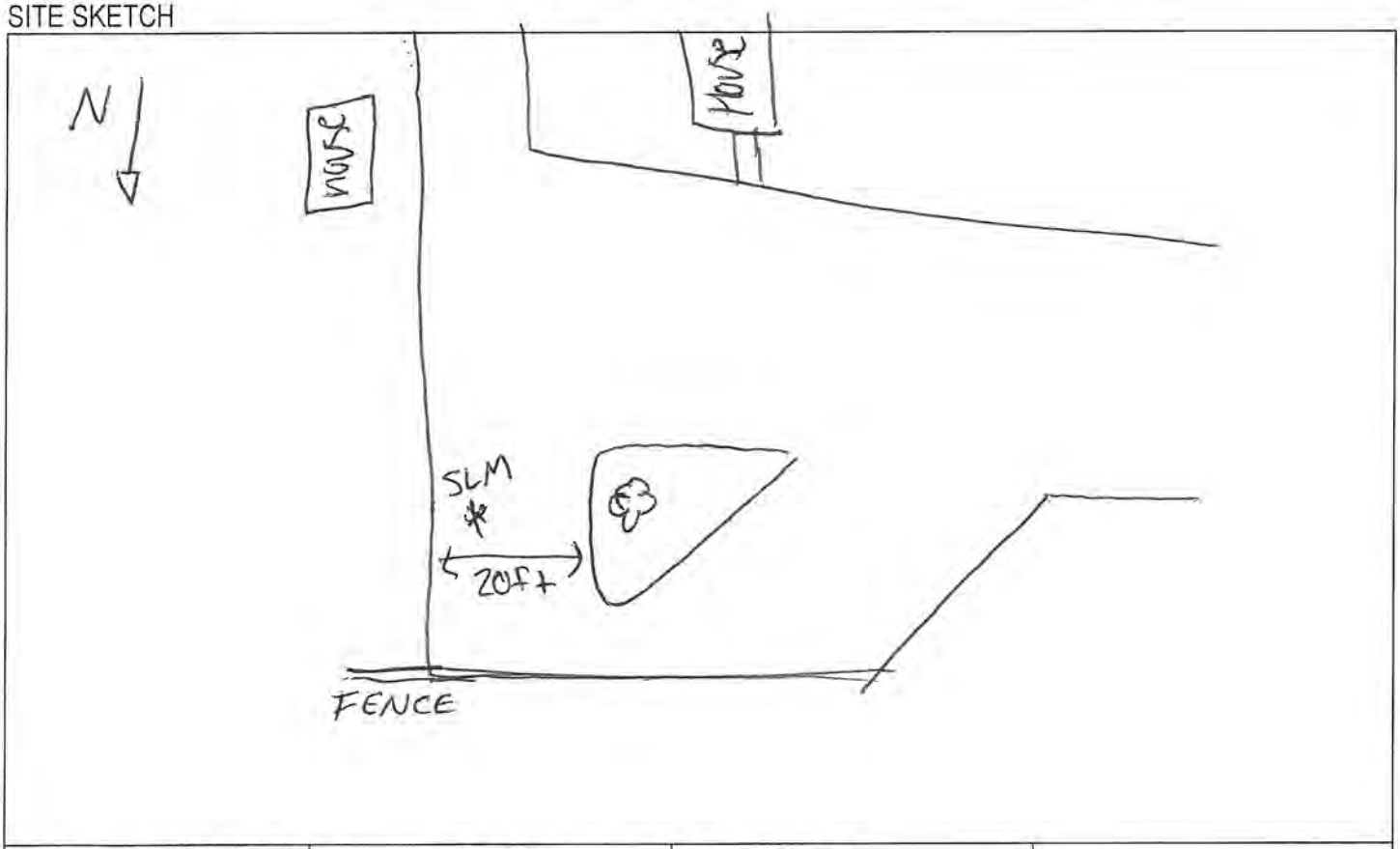
CALIBRATION: -0.08 dB.

RESPONSE: FAST / SLOW WEIGHTING: A / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	I-64 EB	I-64 WB
AUTOS	598	565
MED TRKS	9	22
HVY TRKS	82	95
BUS	0	3
MOTORCYCLE	1	4
SPEED	65mph	65mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20min	Leq 50.7	

WEATHER DATA WIND SPEED (MPH) 5 DIR. N TEMP. 66 HUMIDITY 45% CLOUD COVER 0

BACKGROUND NOISE

MAJOR SOURCES

UNUSUAL EVENTS

OTHER NOTES

Lxt_Data-002

HNTB

NOISE MEASUREMENT DATA SHEET

PROJECT: I-64 ATL JOB #: [redacted]78704 BY: P. Srivastava, C. Tegeler

SITE: ES-4 DATE: 6/22/2021 TIME: 2:10pm - 2:30pm

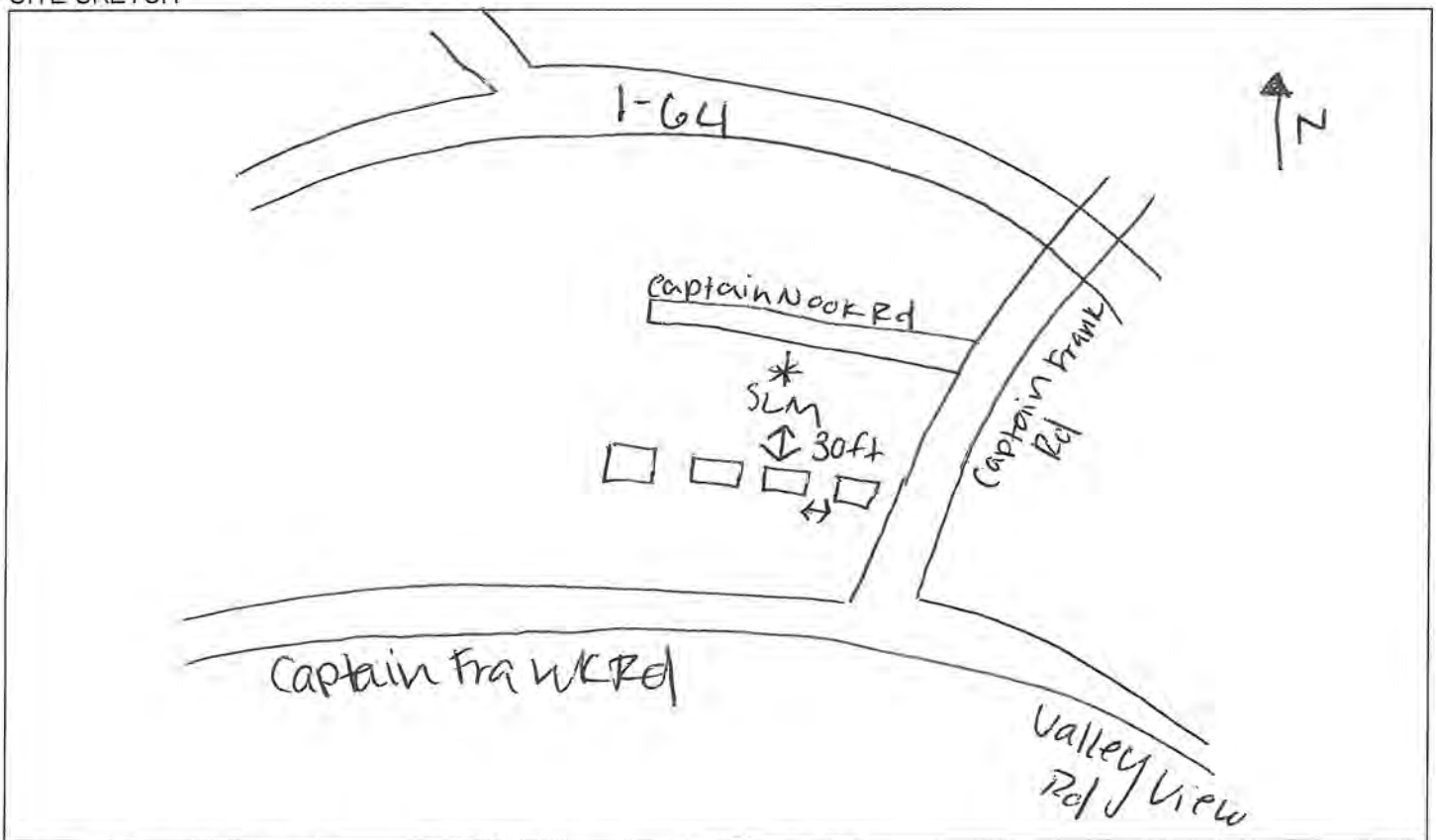
CALIBRATION: -0.22 dB.

RESPONSE: FAST / [SLOW] WEIGHTING: [A] / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	I-64 EB	I-64 WB
AUTOS	493	630
MED TRKS	9	13
HVY TRKS	84	102
BUS	0	1
MOTORCYCLE	0	1
SPEED	65mph	65mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20min	Leq 62.1	

WEATHER DATA WIND SPEED (MPH) 2.5 DIR. N TEMP. 72 HUMIDITY 37% CLOUD COVER 0

BACKGROUND NOISE

MAJOR SOURCES

UNUSUAL EVENTS

OTHER NOTES

Lxt-Data.00S

HNTB

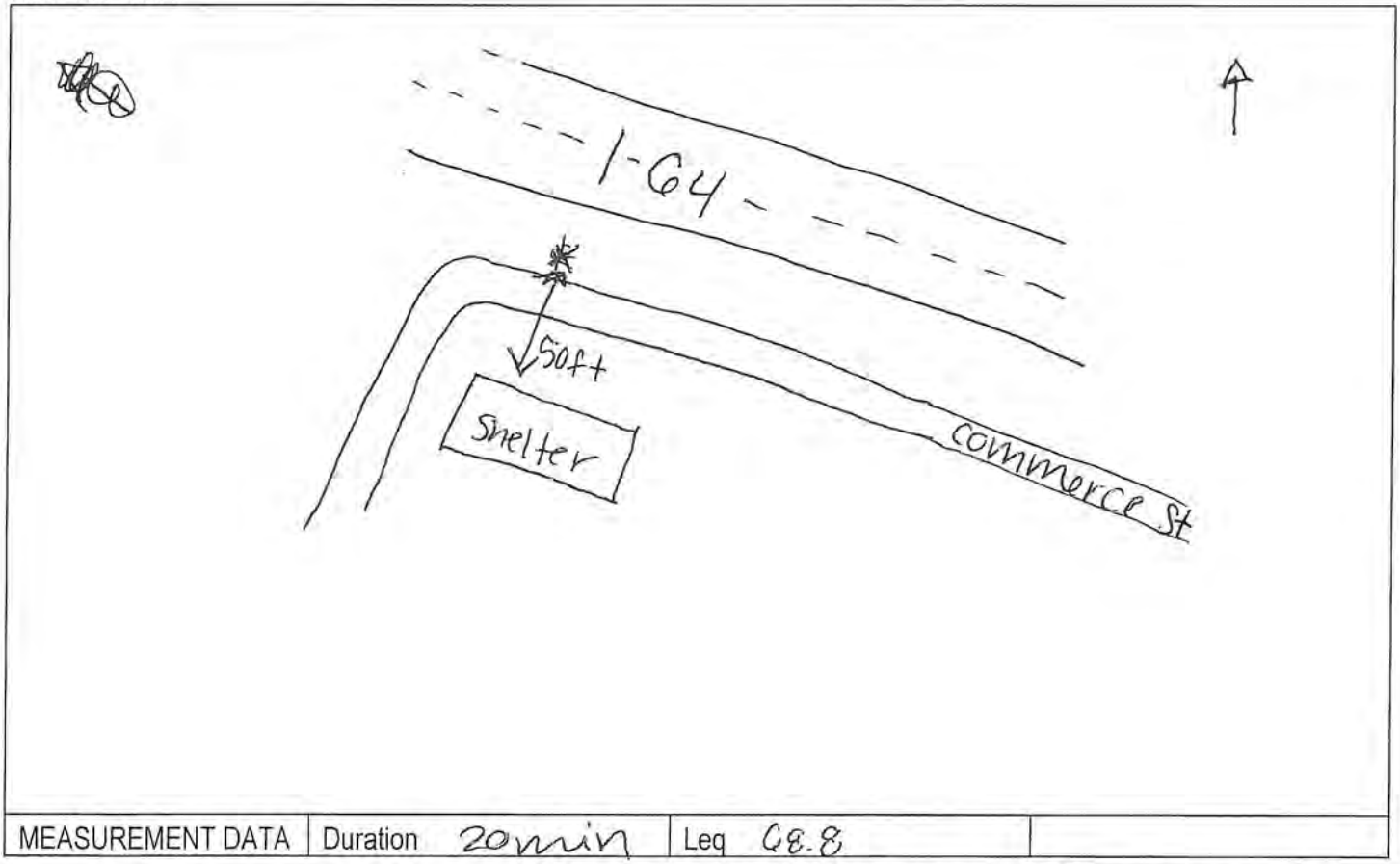
NOISE MEASUREMENT DATA SHEET

PROJECT: I-64 ATL JOB #: 78704 BY: R. Srivastava, C. Teegeler
SITE: FS-5 DATE: 06/22/21 TIME: 1:34pm - 1:54pm
CALIBRATION: 0.23 dB.
RESPONSE: FAST / SLOW WEIGHTING: A / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	I-64 EB	I-64 WB
AUTOS	473	538
MED TRKS	6	9
HVY TRKS	98	93
BUS	0	2
MOTORCYCLE	3	1
SPEED	65mph	65mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20min	Leq 68.8	

WEATHER DATA WIND SPEED (MPH) 1-7 DIR. NW TEMP. 73 HUMIDITY 35 CLOUD COVER NO
BACKGROUND NOISE
MAJOR SOURCES
UNUSUAL EVENTS
OTHER NOTES

Lxt_Data.004

HNTB

NOISE MEASUREMENT DATA SHEET

PROJECT: I-64 ATL JOB #: 78704 BY: D. Srivastava, C. Tegeler

SITE: FS-6 DATE: 6/23/21 TIME: 9:57AM - 10:17AM

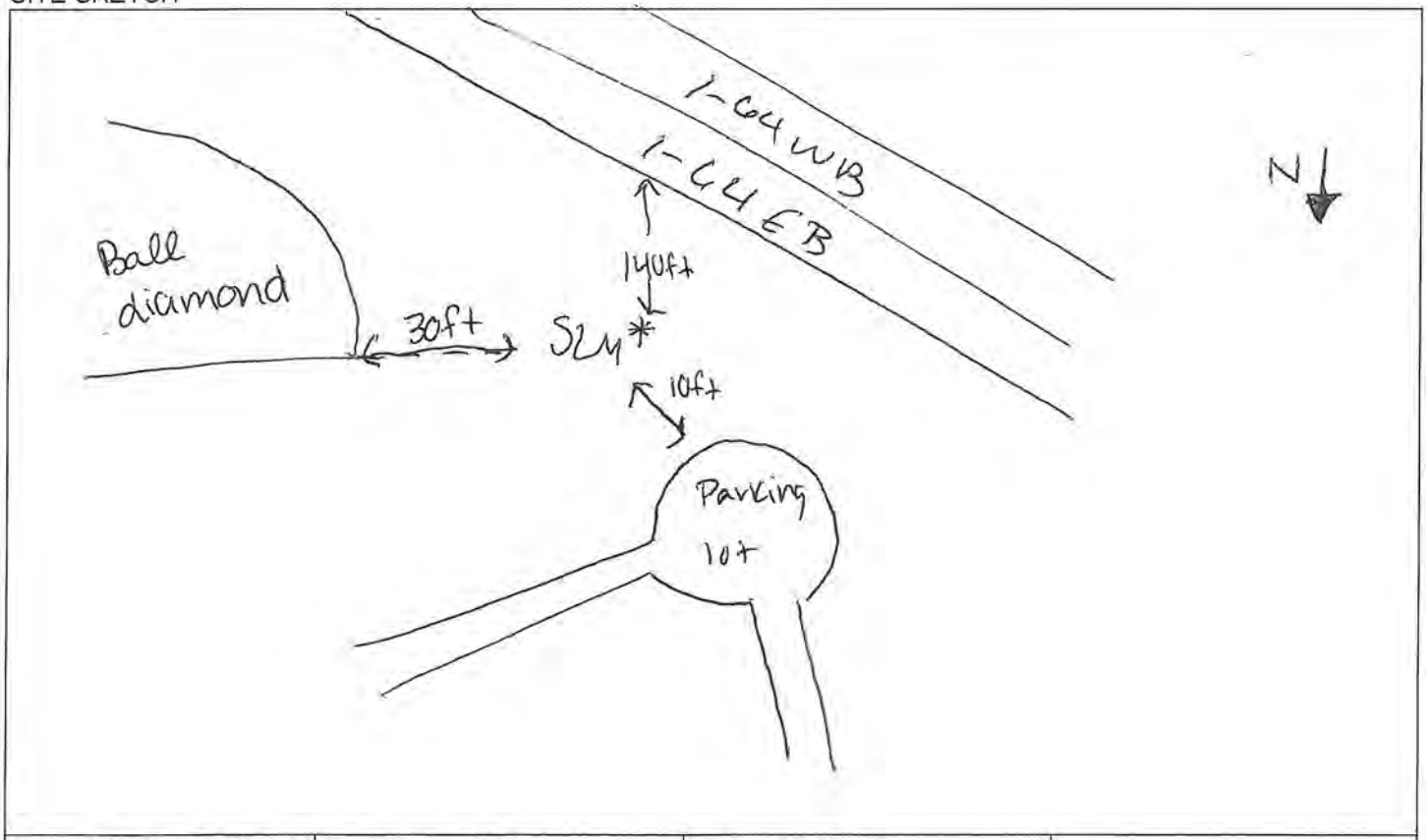
CALIBRATION: 0.03 dB.

RESPONSE: FAST / SLOW WEIGHTING: A / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	I-64EB	I-64WB
AUTOS	474	447
MED TRKS	12	6
HVY TRKS	94	101
BUS	0	1
MOTORCYCLE	1	2
SPEED	65mph	65mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20min	Leq 62.5	

WEATHER DATA WIND SPEED (MPH) 1-2 DIR. SSE TEMP. 68 HUMIDITY 48% CLOUD COVER ○

BACKGROUND NOISE

MAJOR SOURCES

UNUSUAL EVENTS

OTHER NOTES

Lxt_Data.006

HNTB

NOISE MEASUREMENT DATA SHEET

PROJECT: I-64 ATL JOB #: 78704 BY: C. Tegeler, P. Srivastava

SITE: FS7 DATE: 6/23/21 TIME: 10:32AM - 10:52AM

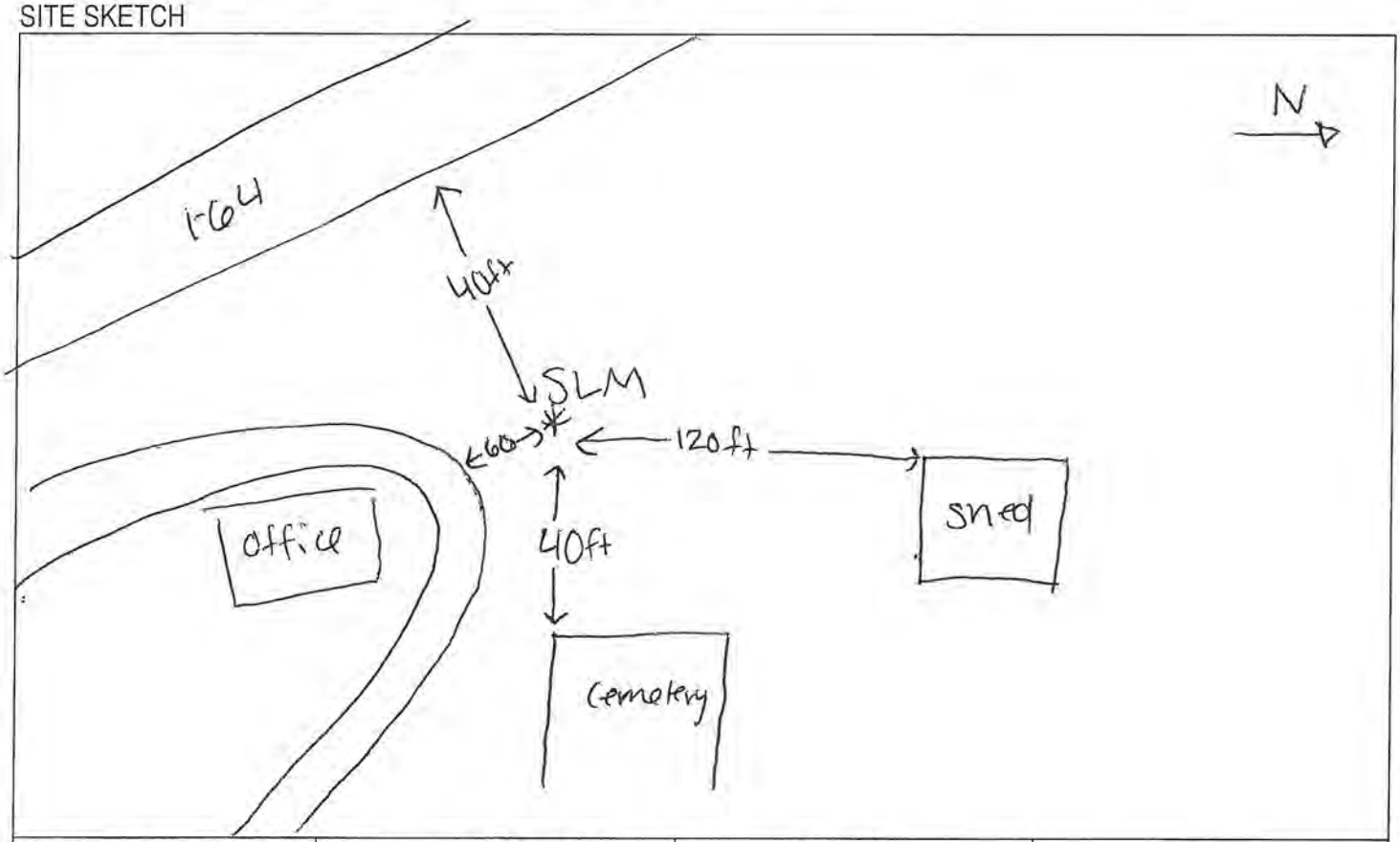
CALIBRATION: 0.03 dB.

RESPONSE: FAST / [SLOW] WEIGHTING: [A] / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	I-64 EB	I-64 WB
AUTOS	495	480
MED TRKS	7	7
HVY TRKS	100	89
BUS	1	2
MOTORCYCLE	4	4
SPEED	65 mph	65 mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20min	Leq 67.1	

WEATHER DATA WIND SPEED (MPH) 24 DIR. SSE TEMP. 72 HUMIDITY 48 CLOUD COVER 0

BACKGROUND NOISE

MAJOR SOURCES

UNUSUAL EVENTS

OTHER NOTES

Lxt_data_007

HNTB

NOISE MEASUREMENT DATA SHEET

PROJECT: I-64 ATL JOB #: 78704 BY: P. Srivastava, C. Tegeler

SITE: FS 8 DATE: 6/23/21 TIME: 11:25AM - 11:45AM

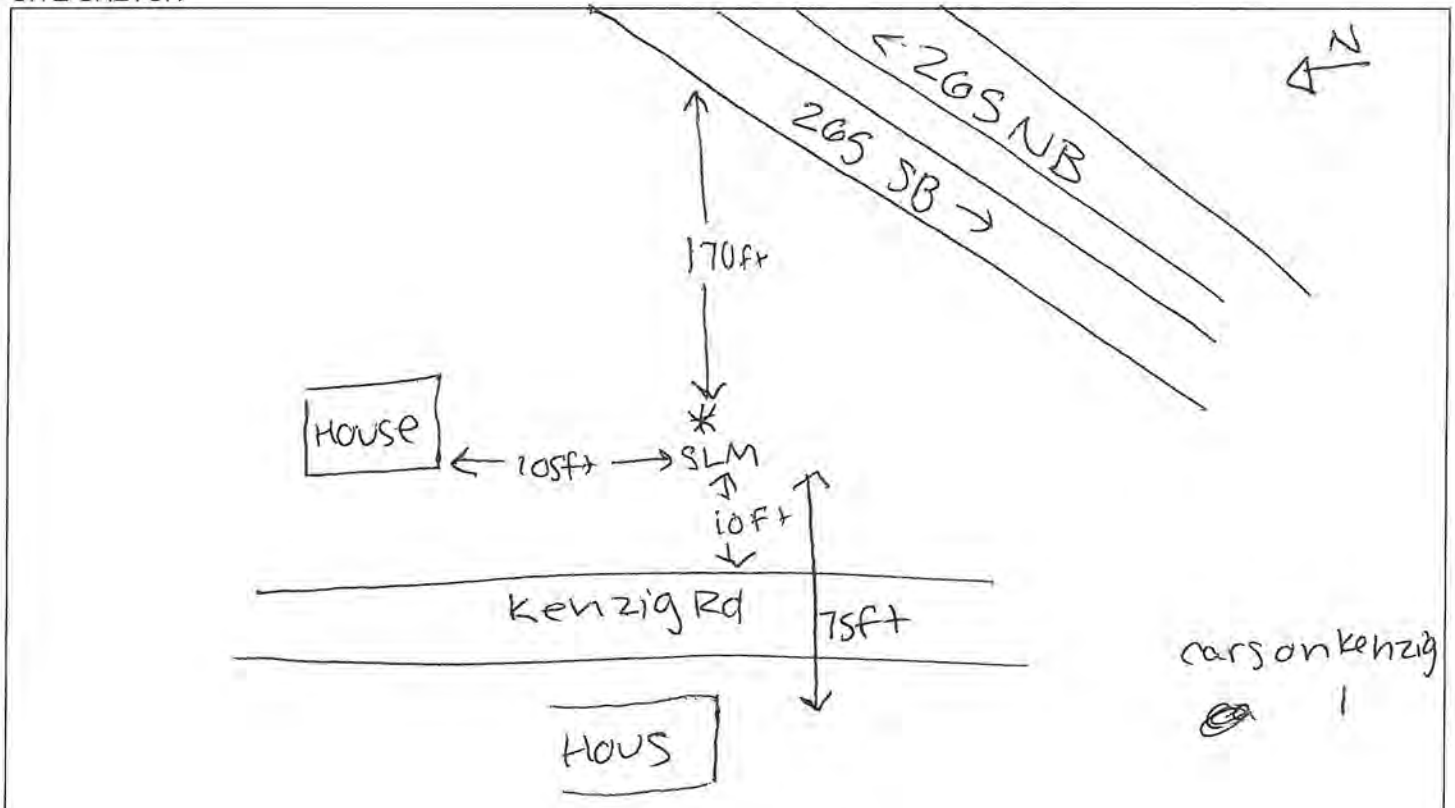
CALIBRATION: -0.00 dB.

RESPONSE: FAST / SLOW WEIGHTING: A / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	265 NB	265 SB
AUTOS	618	522
MED TRKS	9	6
HVY TRKS	68	57
BUS	0	0
MOTORCYCLE	1	1
SPEED	65 mph	65 mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20min	Leq 62.4	

WEATHER DATA WIND SPEED (MPH) 3-2 DIR. SE TEMP. 72 HUMIDITY 48 CLOUD COVER 0

BACKGROUND NOISE

MAJOR SOURCES

UNUSUAL EVENTS

OTHER NOTES

Lxt_data.000

HNTB

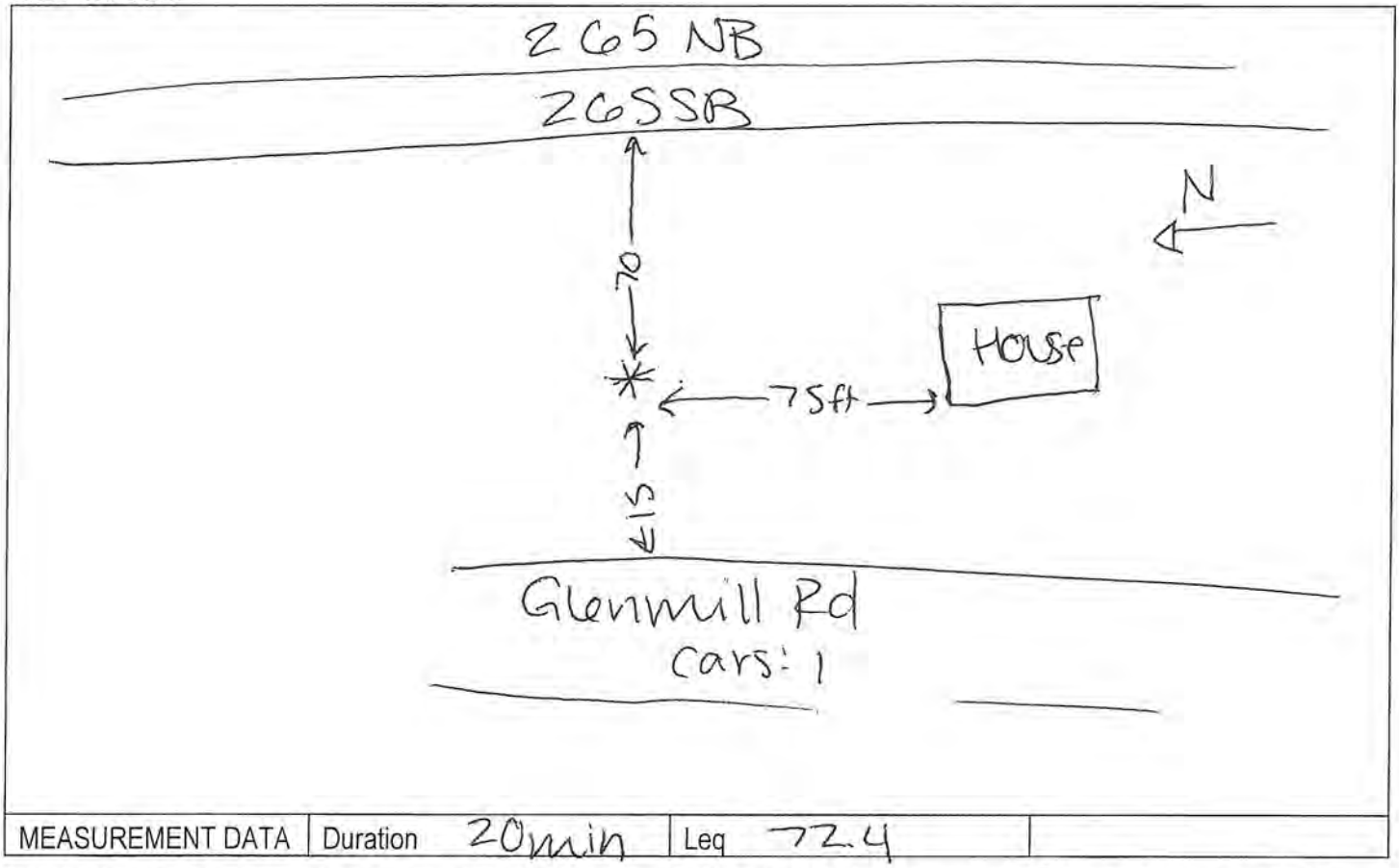
NOISE MEASUREMENT DATA SHEET

PROJECT: I-64 ATL JOB #: 78704 BY: R Srivastava, C. Tegeler
SITE: FS9 DATE: 6/23/21 TIME: 2:38PM - 2:58PM
CALIBRATION: -0.02 dB.
RESPONSE: FAST / SLOW WEIGHTING: A / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	265 NB	265 SB
AUTOS	658	777
MED TRKS	10	4
HVY TRKS	48	65
BUS	1	3
MOTORCYCLE	0	0
SPEED	65 mph	65mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20min	Leq 72.4	

WEATHER DATA WIND SPEED (MPH) 2 DIR. SSE TEMP. 81 HUMIDITY 33 CLOUD COVER 2
BACKGROUND NOISE
MAJOR SOURCES
UNUSUAL EVENTS
OTHER NOTES

Lxt_data.010

HNTB

NOISE MEASUREMENT DATA SHEET

PROJECT: I-64 ATL JOB #: 78704 BY: C-Tegeler, P.Srivastava

SITE: FS 10 DATE: 6/23/2021 TIME: 1:57pm - 2:17pm

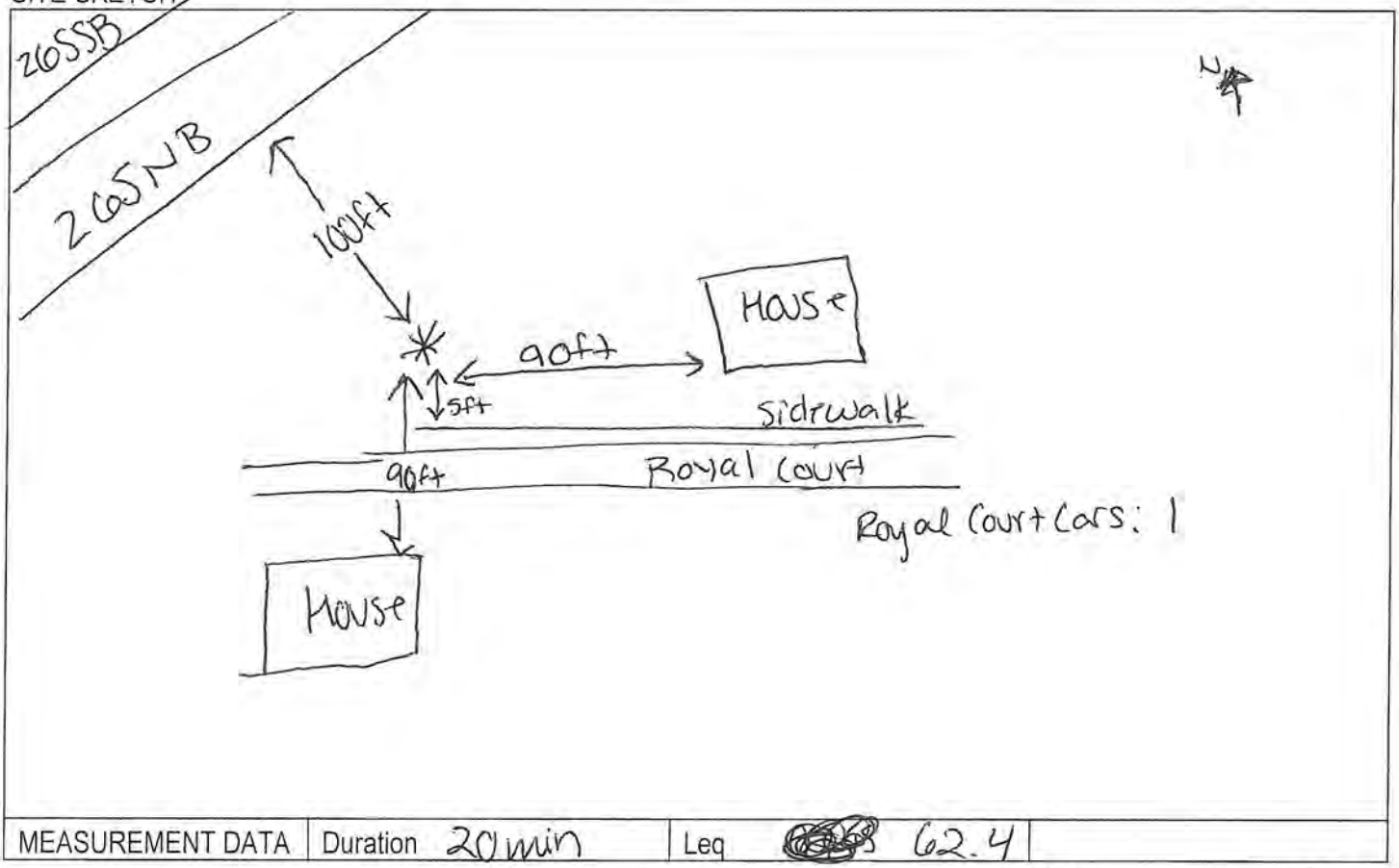
CALIBRATION: 0.08 dB.

RESPONSE: FAST / [SLOW] WEIGHTING: [A] / C / LIN.

TRAFFIC DATA		
ROAD (Name/Dir)	265 NB	265SB
AUTOS	635	648
MED TRKS	6	6
HVY TRKS	41	65
BUS	1	1
MOTORCYCLE	3	5
SPEED	65mph	65mph

EQUIPMENT	
INSTRUMENT	
SLM MANUFACTURER	
SLM MODEL	
SLM	
PREAMPLIFIER –	
MICROPHONE –	
CALIBRATOR –	

SITE SKETCH



MEASUREMENT DATA	Duration 20 min	Leq 62.4	

WEATHER DATA WIND SPEED (MPH) 5 DIR. SSE TEMP. 77 HUMIDITY 33 CLOUD COVER 2%

BACKGROUND NOISE

MAJOR SOURCES

UNUSUAL EVENTS

OTHER NOTES

Lxt-data-009

Appendix C. Certificates of Calibration

Calibration Certificate

Certificate Number 2021002527
Customer:
The Modal Shop
10310 AeroHub Boulevard
Cincinnati, OH 45215, United States

Model Number	LxT1	***Procedure Number***	D0001.8384		
Serial Number	0006392	***Technician***	Ron Harris		
Test Results	**Pass**	***Calibration Date***	9 Mar 2021		
Initial Condition	As Manufactured	***Calibration Due***			
		Temperature	23.39	°C	± 0.25 °C
Description	SoundTrack LxT Class 1	***Humidity***	51.6	%RH	± 2.0 %RH
	Class 1 Sound Level Meter	***Static Pressure***	85.82	kPa	± 0.13 kPa
	Firmware Revision: 2.404				

Evaluation Method ***Tested with:*** ***Data reported in dB re 20 µPa.***

Larson Davis PRMLxT1L, S/N 070020
PCB 377B02, S/N 326168
Larson Davis CAL200, S/N 9079
Larson Davis CAL291, S/N 0108

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8378:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017.
Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, I770.01 Rev J Supporting Firmware Version 2.301, 2015-04-30

Self-generated Noise

Measured according to IEC 61672-3:2013 11.1 and ANSI S1.4-2014 Part 3: 11.1

Measurement	Test Result [dB]
A-weighted	40.27

-- End of measurement results--

-- End of Report--

Signatory: *Ron Harris*

Calibration Certificate

Certificate Number 2021002472

Customer:

The Modal Shop
10310 AeroHub Boulevard
Cincinnati, OH 45215, United States

Model Number	LxT1	***Procedure Number***	D0001.8378		
Serial Number	0006392	***Technician***	Ron Harris		
Test Results	**Pass**	***Calibration Date***	8 Mar 2021		
Initial Condition	As Manufactured	***Calibration Due***			
		Temperature	23.46	°C	± 0.25 °C
Description	SoundTrack LxT Class 1 Class 1 Sound Level Meter Firmware Revision: 2.404	***Humidity***	52.1	%RH	± 2.0 %RH
		Static Pressure	85.68	kPa	± 0.13 kPa

Evaluation Method Tested electrically using Larson Davis PRMLxT1L S/N 070020 and a 12.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 23.6 mV/Pa.

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8384:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1
IEC 61260:2001 Class 1	ANSI S1.11 (R2009) Class 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017. **Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015.

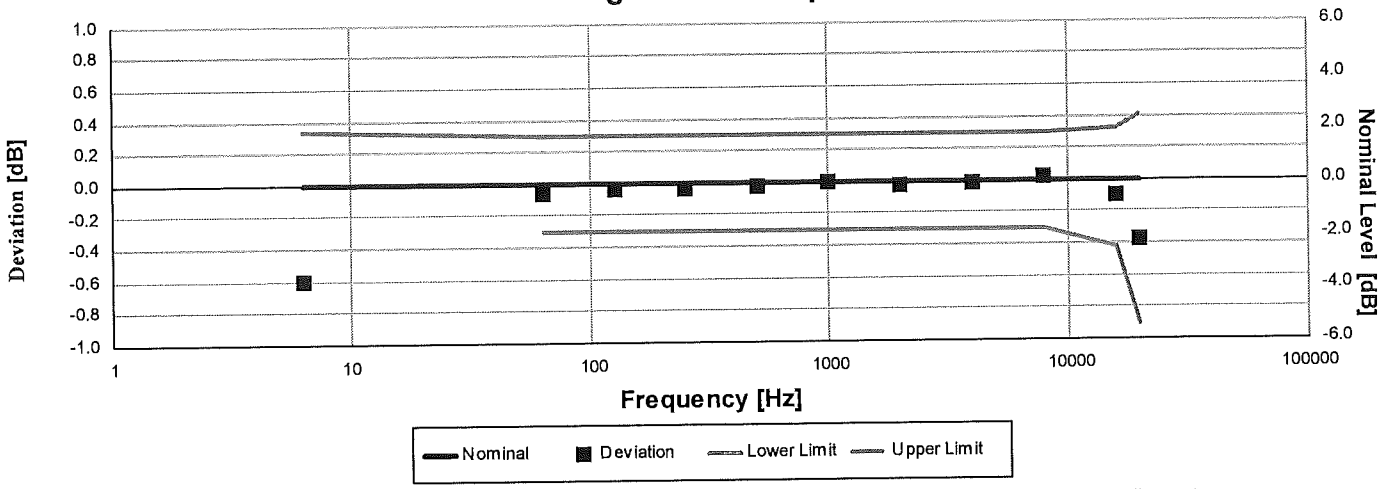
This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, I770.01 Rev O Supporting Firmware Version 4.0.5, 2019-09-10

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa

Z-weight Filter Response



Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 6.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Deviation [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
6.31	-0.60	-0.60	-1.11	0.33	0.15	Pass
63.10	-0.07	-0.07	-0.30	0.30	0.15	Pass
125.89	-0.04	-0.04	-0.30	0.30	0.15	Pass
251.19	-0.04	-0.04	-0.30	0.30	0.15	Pass
501.19	-0.02	-0.02	-0.30	0.30	0.15	Pass
1,000.00	0.00	0.00	-0.30	0.30	0.15	Pass
1,995.26	-0.03	-0.03	-0.30	0.30	0.15	Pass
3,981.07	-0.02	-0.02	-0.30	0.30	0.15	Pass
7,943.28	0.03	0.03	-0.30	0.30	0.15	Pass
15,848.93	-0.09	-0.09	-0.42	0.32	0.15	Pass
19,952.62	-0.38	-0.38	-0.91	0.41	0.15	Pass

-- End of measurement results--

Peak Rise Time

Peak rise time performed according to IEC 60651:2001 9.4.4 and ANSI S1.4:1983 (R2006) 8.4.4

Amplitude [dB]	Duration [µs]		Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
116.15	40	Negative Pulse	117.53	116.05	118.05	0.15	Pass
		Positive Pulse	117.47	116.00	118.00	0.15	Pass
	30	Negative Pulse	116.58	116.05	118.05	0.15	Pass
		Positive Pulse	116.52	116.00	118.00	0.15	Pass

-- End of measurement results--

Positive Pulse Crest Factor

200 µs pulse tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Crest Factor measured according to IEC 60651:2001 9.4.2 and ANSI S1.4:1983 (R2006) 8.4.2

Amplitude [dB]	Crest Factor	Test Result [dB]	Limits [dB]	Expanded Uncertainty [dB]	Result
114.15	3	OVLD	± 0.50	0.15 ‡	Pass
	5	OVLD	± 1.00	0.15 ‡	Pass
	10	OVLD	± 1.50	0.15 ‡	Pass
104.15	3	-0.15	± 0.50	0.15 ‡	Pass
	5	-0.17	± 1.00	0.16 ‡	Pass
	10	OVLD	± 1.50	0.15 ‡	Pass
94.15	3	-0.14	± 0.50	0.15 ‡	Pass
	5	-0.13	± 1.00	0.15 ‡	Pass
	10	-0.28	± 1.50	0.15 ‡	Pass
84.15	3	-0.14	± 0.50	0.15 ‡	Pass
	5	-0.14	± 1.00	0.15 ‡	Pass
	10	-0.25	± 1.50	0.15 ‡	Pass

-- End of measurement results--

Negative Pulse Crest Factor

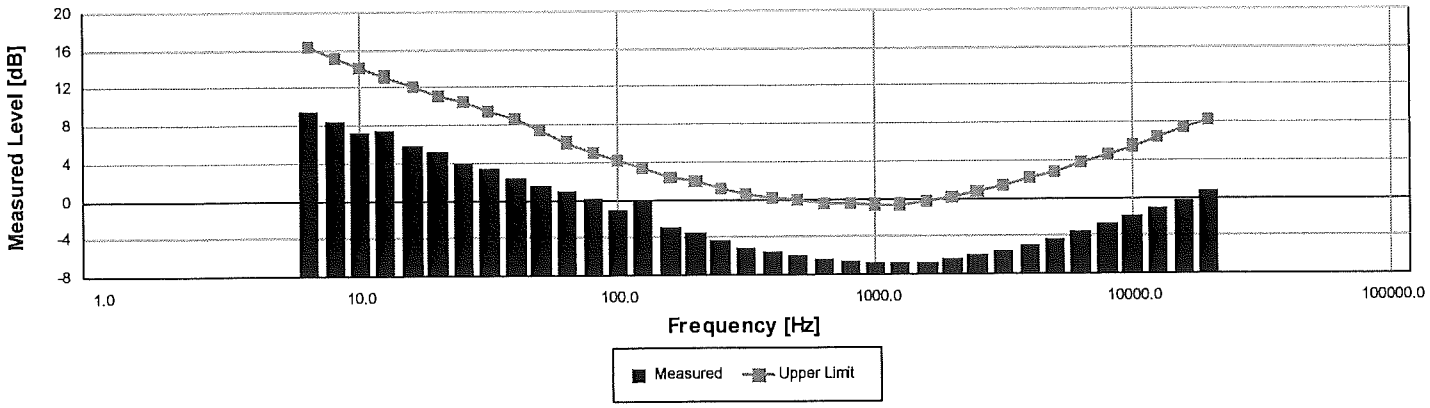
200 µs pulse tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Crest Factor measured according to IEC 60651:2001 9.4.2 and ANSI S1.4:1983 (R2006) 8.4.2

Amplitude [dB]	Crest Factor	Test Result [dB]	Limits [dB]	Expanded Uncertainty [dB]	Result
114.15	3	OVLD	± 0.50	0.15 ‡	Pass
	5	OVLD	± 1.00	0.15 ‡	Pass
	10	OVLD	± 1.50	0.15 ‡	Pass
104.15	3	-0.14	± 0.50	0.15 ‡	Pass
	5	-0.11	± 1.00	0.15 ‡	Pass
	10	OVLD	± 1.50	0.15 ‡	Pass
94.15	3	-0.14	± 0.50	0.15 ‡	Pass
	5	-0.14	± 1.00	0.15 ‡	Pass
	10	-0.24	± 1.50	0.15 ‡	Pass
84.15	3	-0.12	± 0.50	0.15 ‡	Pass
	5	-0.15	± 1.00	0.15 ‡	Pass
	10	-0.26	± 1.50	0.15 ‡	Pass

-- End of measurement results--

1/3-Octave Self-Generated Noise



The SLM is set to low range.

Frequency [Hz]	Test Result [dB]	Upper limit [dB]	Result
6.30	9.50	16.30	Pass
8.00	8.46	15.20	Pass
10.00	7.21	14.20	Pass
12.50	7.37	13.20	Pass
16.00	5.84	12.10	Pass
20.00	5.14	11.10	Pass
25.00	4.08	10.40	Pass
31.50	3.36	9.40	Pass
40.00	2.34	8.60	Pass
50.00	1.48	7.40	Pass
63.00	0.86	6.10	Pass
80.00	0.05	5.00	Pass
100.00	-1.09	4.20	Pass
125.00	-0.12	3.30	Pass
160.00	-2.97	2.40	Pass
200.00	-3.58	1.90	Pass
250.00	-4.37	1.20	Pass
315.00	-5.11	0.60	Pass
400.00	-5.54	0.20	Pass
500.00	-5.96	-0.10	Pass
630.00	-6.38	-0.50	Pass
800.00	-6.56	-0.50	Pass
1,000.00	-6.75	-0.60	Pass
1,250.00	-6.74	-0.60	Pass
1,600.00	-6.71	-0.20	Pass
2,000.00	-6.43	0.20	Pass
2,500.00	-6.04	0.70	Pass
3,150.00	-5.51	1.40	Pass
4,000.00	-4.95	2.10	Pass
5,000.00	-4.29	2.80	Pass
6,300.00	-3.59	3.70	Pass
8,000.00	-2.79	4.60	Pass
10,000.00	-1.98	5.50	Pass
12,500.00	-1.13	6.40	Pass
16,000.00	-0.25	7.40	Pass
20,000.00	0.64	8.30	Pass

-- End of measurement results--

THE MODAL SHOP
AN MTS COMPANY

10310 Aerohub Boulevard
Cincinnati, OH 45215
Ph: 513.351.9919
Fax: 513.458.2172
www.modalshop.com

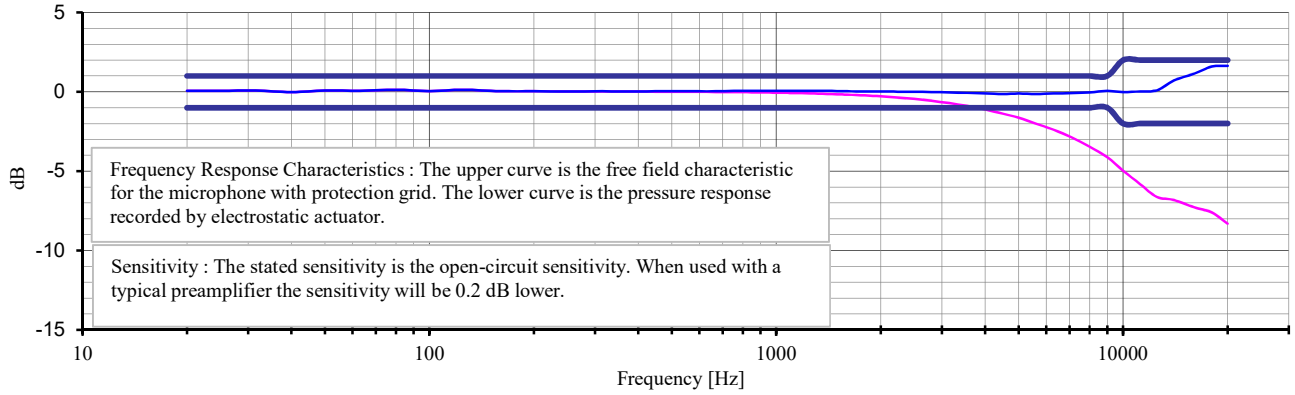
~Certificate of Calibration~

Manufacturer:	PCB	**Customer:**	TMS Rental
Model Number:	377B02	**Address:**	
Serial Number:	305688		
Asset ID:		**Cal Date / Cal ID:**	Oct 02, 2020 09:23:05
Description:	Free-Field Microphone	**Due Date:**	

Sensitivity:	**250 Hz**	**1 kHz**		**Temperature:**	72 (22)	°F (°C)
	-25.61	-25.67	dB re. 1V/Pa	**Humidity:**	40	%
	52.40	52.09	mV/Pa	**Ambient Pressure:**	1000.1	mbar

Reference Sens: In Tolerance
Freq. Response: In Tolerance

Polarization Voltage: 0 VDC



Traceability: The calibration is traceable through NIST Project A2007.

Notes:
Calibration results relate only to the items calibrated.
This certificate may not be reproduced, except in full, without written permission.
This calibration is performed in compliance with ISO 9001, ISO 17025 and ANSI Z540.
Measurement uncertainty (250 Hz sensitivity calibration) at 95% confidence level: 0.30 dB
Calibrated per procedure PRD-P204.

User Note: As Found / As Left: In Tolerance.

Frequency Response with reference to level at 250 Hz

Frequency (Hz)	Upper (dB)	Frequency (Hz)	Upper (dB)	Frequency (Hz)	Upper (dB)	Frequency (Hz)	Upper (dB)
20	0.07	**630**	0.03	**4500**	-0.13		
25	0.06	**800**	0.07	**5000**	-0.11		
31.5	0.09	**1000**	0.06	**5600**	-0.14		
40	-0.02	**1120**	0.06	**6300**	-0.10		
50	0.08	**1250**	0.06	**7100**	-0.09		
63	0.06	**1400**	0.06	**8000**	-0.03		
80	0.13	**1600**	0.04	**9000**	0.06		
100	0.05	**1800**	0.03	**10000**	-0.02		
125	0.13	**2000**	0.03	**11200**	0.03		
160	0.04	**2240**	0.01	**12500**	0.09		
200	0.03	**2500**	0.01	**14000**	0.71		
250	0.03	**2800**	-0.01	**16000**	1.14		
315	0.03	**3150**	-0.03	**18000**	1.59		
400	0.03	**3550**	-0.07	**20000**	1.64		
500	0.05	**4000**	-0.10				

Technician: Ed Devlin

Approval: Edward A. Devlin

Reference Equipment Used:

Manuf.	*Model*	*Serial*	*Cal. Date*	*Due Date*
GRAS	40AG	58094	2/19/2020	2/19/2021

ACCREDITED
Calibration Lab
CALIBRATION CERT 2649.01

Calibration Certificate

Certificate Number 2020011633

Customer:
The Modal Shop
10310 AeroHub Boulevard
Cincinnati, OH 45215, United States

Model Number	CAL200	***Procedure Number***	D0001.8386		
Serial Number	16642	***Technician***	Scott Montgomery		
Test Results	**Pass**	***Calibration Date***	14 Oct 2020		
Initial Condition	Adjusted	***Calibration Due***			
		Temperature	24	°C	± 0.3 °C
Description	Larson Davis CAL200 Acoustic Calibrator	***Humidity***	29	%RH	± 3 %RH
		Static Pressure	101.0	kPa	± 1 kPa

Evaluation Method The data is aquired by the insert voltage calibration method using the reference microphone's open circuit sensitivity. Data reported in dB re 20 µPa.

Compliance Standards Compliant to Manufacturer Specifications per D0001.8190 and the following standards:
IEC 60942:2017 ANSI S1.40-2006

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017.
Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Standards Used

Description	Cal Date	Cal Due	Cal Standard
Agilent 34401A DMM	08/04/2020	08/04/2021	001021
Larson Davis Model 2900 Real Time Analyzer	04/02/2020	04/02/2021	001051
Microphone Calibration System	03/03/2020	03/03/2021	005446
1/2" Preamplifier	08/27/2020	08/27/2021	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/06/2020	08/06/2021	006507
1/2 inch Microphone - RI - 200V	06/04/2020	06/04/2021	006510
Pressure Transducer	10/18/2019	10/18/2020	007204

LARSON DAVIS - A PCB PIEZOTRONICS DIV.
1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ilac-MRA A2LA ACCREDITED Cert. #3622.01

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Output Level

Nominal Level [dB]	Pressure [kPa]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
114	101.3	114.02	113.80	114.20	0.14	Pass
94	101.0	94.00	93.80	94.20	0.15	Pass

-- End of measurement results--

Frequency

Nominal Level [dB]	Pressure [kPa]	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]	Expanded Uncertainty [Hz]	Result
114	101.3	1,000.27	990.00	1,010.00	0.20	Pass
94	101.0	1,000.27	990.00	1,010.00	0.20	Pass

-- End of measurement results--

Total Harmonic Distortion + Noise (THD+N)

Nominal Level [dB]	Pressure [kPa]	Test Result [%]	Lower limit [%]	Upper limit [%]	Expanded Uncertainty [%]	Result
114	101.3	0.35	0.00	2.00	0.25 ‡	Pass
94	101.0	0.40	0.00	2.00	0.25 ‡	Pass

-- End of measurement results--

Level Change Over Pressure

Tested at: 114 dB, 24 °C, 29 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [dB]	Lower limit [dB]	Upper limit [dB]	Expanded Uncertainty [dB]	Result
108.0	108.1	-0.04	-0.30	0.30	0.04 ‡	Pass
101.3	101.5	0.00	-0.30	0.30	0.04 ‡	Pass
92.0	92.0	0.05	-0.30	0.30	0.04 ‡	Pass
83.0	82.9	0.07	-0.30	0.30	0.04 ‡	Pass
74.0	73.7	0.06	-0.30	0.30	0.04 ‡	Pass
65.0	65.2	0.01	-0.30	0.30	0.04 ‡	Pass

-- End of measurement results--

Frequency Change Over Pressure

Tested at: 114 dB, 24 °C, 29 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [Hz]	Lower limit [Hz]	Upper limit [Hz]	Expanded Uncertainty [Hz]	Result
108.0	108.1	0.00	-10.00	10.00	0.20 ‡	Pass
101.3	101.5	0.00	-10.00	10.00	0.20 ‡	Pass
92.0	92.0	0.00	-10.00	10.00	0.20 ‡	Pass
83.0	82.9	-0.01	-10.00	10.00	0.20 ‡	Pass
74.0	73.7	-0.01	-10.00	10.00	0.20 ‡	Pass
65.0	65.2	-0.02	-10.00	10.00	0.20 ‡	Pass

-- End of measurement results--

Certificate Number 2020011633

Total Harmonic Distortion + Noise (THD+N) Over Pressure

Tested at: 114 dB, 24 °C, 29 %RH

Nominal Pressure [kPa]	Pressure [kPa]	Test Result [%]	Lower limit [%]	Upper limit [%]	Expanded Uncertainty [%]	Result
108.0	108.1	0.36	0.00	2.00	0.25 ‡	Pass
101.3	101.5	0.36	0.00	2.00	0.25 ‡	Pass
92.0	92.0	0.37	0.00	2.00	0.25 ‡	Pass
83.0	82.9	0.38	0.00	2.00	0.25 ‡	Pass
74.0	73.7	0.41	0.00	2.00	0.25 ‡	Pass
65.0	65.2	0.44	0.00	2.00	0.25 ‡	Pass

-- End of measurement results--

Signatory: *Scott Montgomery*

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1681 West 820 North
Provo, UT 84601, United States
716-684-0001

ilac-MRA A2LA ACCREDITED Cert. #3622.01

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Appendix D. Predicted Noise Levels

Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-1-1	**Residential**	**B**	**66**	**1**	**65.2**	**66.8**	**1.6**	**Y**
R-1-2	Residential	B	66	1	53.2	54.7	1.5	N
R-1-3	Playground	C	66	1	57.0	58.3	1.3	N
R-1-4	Playground	C	66	1	57.0	58.3	1.3	N
R-2-1	Residential	B	66	1	56.5	57.9	1.4	N
R-2-2	Residential	B	66	1	55.0	56.3	1.3	N
R-2-3	Residential	B	66	1	55.4	56.6	1.2	N
R-2-4	Residential	B	66	1	56.1	57.6	1.5	N
R-3-1	Residential	B	66	1	58.1	59.3	1.2	N
R-4-1	Residential	B	66	2	54.9	56.3	1.4	N
R-4-2	Residential	B	66	2	55.9	57.4	1.5	N
R-4-3	Residential	B	66	1	56.6	57.5	0.9	N
R-4-4	Residential	B	66	1	57.2	58.0	0.8	N
R-4-5	Residential	B	66	1	58.9	59.8	0.9	N
R-4-6	Residential	B	66	1	62.6	63.2	0.6	N
R-4-7	Residential	B	66	1	64.2	63.8	-0.4	N
R-4-8	Residential	B	66	1	62.9	64.2	1.3	N
R-4-9	Residential	B	66	1	62.7	64.3	1.6	N
R-4-10	**Residential**	**B**	**66**	**1**	**65.2**	**66.7**	**1.5**	**Y**
R-4-11	**Residential**	**B**	**66**	**1**	**70.4**	**70.5**	**0.1**	**Y**
R-4-12	**Residential**	**B**	**66**	**1**	**66.7**	**68.4**	**1.7**	**Y**
R-4-13	Residential	B	66	1	62.6	64.8	2.2	N
R-4-14	**Residential**	**B**	**66**	**1**	**65.4**	**67.0**	**1.6**	**Y**
R-4-15	Residential	B	66	1	64.1	65.9	1.8	N
R-4-16	Residential	B	66	1	60.8	62.9	2.1	N
R-4-17	**Residential**	**B**	**66**	**1**	**68.6**	**70.6**	**2.0**	**Y**
R-4-18	Residential	B	66	1	63.3	64.5	1.2	N
R-4-19	Residential	B	66	1	62.6	63.5	0.9	N
R-4-20	Residential	B	66	1	59.9	61.4	1.5	N
R-4-21	Residential	B	66	1	59.2	60.5	1.3	N
R-4-22	Residential	B	66	1	52.4	53.8	1.4	N
R-4-23	Residential	B	66	1	49.3	51.0	1.7	N
R-4-24	Residential	B	66	1	52.5	53.8	1.3	N
R-4-25	Residential	B	66	1	53.1	54.4	1.3	N
R-4-26	Residential	B	66	1	53.6	54.7	1.1	N

Receiver IDs with a decimal point (.) indicate floor. For example, R-18-1.1 indicates first floor and R-18-1.2 indicates second floor. If there is not a decimal point, it is first floor.
Boldface indicates the noise levels approach or exceed the NAC.

Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-4-27	Residential	B	66	1	53.1	54.2	1.1	N
R-4-28	Residential	B	66	1	63.7	65.1	1.4	N
R-4-29	Residential	B	66	1	61.4	63.4	2.0	N
R-5-1	**Residential**	**B**	**66**	**1**	**66.2**	**66.9**	**0.7**	**Y**
R-5-2	Residential	B	66	1	62.3	63.8	1.5	N
R-5-3	Residential	B	66	1	61.1	62.4	1.3	N
R-5-4	**Residential**	**B**	**66**	**1**	**68.7**	**69.6**	**0.9**	**Y**
R-5-5	Residential	B	66	1	57.1	57.8	0.7	N
R-5-6	Residential	B	66	1	61.0	61.6	0.6	N
R-5-7	Residential	B	66	1	61.1	61.8	0.7	N
R-5-8	Residential	B	66	1	58.9	59.5	0.6	N
R-5-9	Residential	B	66	1	64.3	65.2	0.9	N
R-5-10	Residential	B	66	1	60.1	61.6	1.5	N
R-5-11	Residential	B	66	1	60.0	61.7	1.7	N
R-5-12	Residential	B	66	1	54.1	55.7	1.6	N
R-5-13	Residential	B	66	1	57.7	59.3	1.6	N
R-6-1	Residential	B	66	1	58.1	59.7	1.6	N
R-6-2	Residential	B	66	1	63.8	65.1	1.3	N
R-6-3	Residential	B	66	1	62.5	62.7	0.2	N
R-6-4	Residential	B	66	1	61.9	62.2	0.3	N
R-6-5	Residential	B	66	1	61.1	61.3	0.2	N
R-6-6	Residential	B	66	1	60.7	60.3	-0.4	N
R-6-7	Residential	B	66	1	60.3	59.9	-0.4	N
R-6-8	Residential	B	66	1	60.8	60.5	-0.3	N
R-6-9	Residential	B	66	1	60.5	60.8	0.3	N
R-6-10	Residential	B	66	1	61.1	61.4	0.3	N
R-6-11	Residential	B	66	1	64.8	64.9	0.1	N
R-6-12	Residential	B	66	1	61.9	61.9	0.0	N
R-6-13	Residential	B	66	1	62.4	62.6	0.2	N
R-6-14	Residential	B	66	1	63.2	63.1	-0.1	N
R-6-15	Residential	B	66	1	62.0	62.2	0.2	N
R-6-16	Residential	B	66	1	65.2	61.9	-3.3	N
R-6-17 (HP6)	Residential/Historic	B	66	1	66.8	65.9	-0.9	N
R-6-18	Residential	B	66	1	58.8	58.8	0.0	N
R-6-19	Residential	B	66	1	59.6	59.7	0.1	N
R-6-20	Residential	B	66	1	66.5	65.7	-0.8	N
R-6-21	Residential	B	66	1	59.0	58.8	-0.2	N

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Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-6-22	Residential	B	66	1	58.7	58.1	-0.6	N
R-6-23	Residential	B	66	1	60.3	54.5	-5.8	N
R-6-24	Residential	B	66	1	61.1	53.9	-7.2	N
R-6-25	Residential	B	66	1	60.2	60.3	0.1	N
R-6-26	Residential	B	66	1	60.7	60.6	-0.1	N
R-7-1	Residential	B	66	1	61.6	60.8	-0.8	N
R-7-2	Residential	B	66	1	62.7	60.7	-2.0	N
R-7-3	Residential	B	66	1	62.0	61.1	-0.9	N
R-7-4	Residential	B	66	1	63.1	61.0	-2.1	N
R-7-5	Residential	B	66	1	62.3	61.4	-0.9	N
R-7-6	Residential	B	66	1	63.4	61.4	-2.0	N
R-7-7	Residential	B	66	1	62.6	61.8	-0.8	N
R-7-8	Residential	B	66	1	63.8	61.5	-2.3	N
R-7-9	Residential	B	66	1	62.4	61.8	-0.6	N
R-7-10	Residential	B	66	1	64.2	61.9	-2.3	N
R-7-11	Residential	B	66	1	62.9	62.1	-0.8	N
R-7-12	Residential	B	66	1	63.3	62.7	-0.6	N
R-7-13	Residential	B	66	1	64.8	62.3	-2.5	N
R-7-14	Residential	B	66	1	65.2	62.7	-2.5	N
R-7-15	Residential	B	66	1	63.9	63.9	0.0	N
R-7-16	Residential	B	66	1	64.9	65.2	0.3	N
R-7-17	Residential	B	66	1	66.0	64.0	-2.0	N
R-7-18	Residential	B	66	1	64.9	65.3	0.4	N
R-7-19	Residential	B	66	1	65.1	65.5	0.4	N
R-7-20	**Residential**	**B**	**66**	**1**	**66.2**	**66.0**	**-0.2**	**Y**
R-7-21	Residential	B	66	1	65.3	65.8	0.5	N
R-7-22	**Residential**	**B**	**66**	**1**	**66.1**	**66.4**	**0.3**	**Y**
R-7-23	**Residential**	**B**	**66**	**1**	**66.4**	**66.7**	**0.3**	**Y**
R-7-24	**Residential**	**B**	**66**	**1**	**67.0**	**67.2**	**0.2**	**Y**
R-7-25	**Residential**	**B**	**66**	**1**	**67.9**	**68.0**	**0.1**	**Y**
R-7-26	**Residential**	**B**	**66**	**1**	**68.0**	**67.5**	**-0.5**	**Y**
R-7-27	**Residential**	**B**	**66**	**1**	**68.1**	**68.2**	**0.1**	**Y**
R-7-28	**Residential**	**B**	**66**	**1**	**67.8**	**67.9**	**0.1**	**Y**
R-7-29	**Residential**	**B**	**66**	**1**	**68.1**	**68.0**	**-0.1**	**Y**
R-7-30	**Residential**	**B**	**66**	**1**	**67.6**	**67.8**	**0.2**	**Y**
R-7-31	**Residential**	**B**	**66**	**1**	**67.5**	**67.1**	**-0.4**	**Y**
R-7-32	**Residential**	**B**	**66**	**1**	**66.6**	**66.3**	**-0.3**	**Y**

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Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-7-33	Residential	B	66	1	65.7	65.6	-0.1	N
R-7-34	**Golf Course**	**C**	**66**	**1**	**70.2**	**70.3**	**0.1**	**Y**
R-7-35	Residential	B	66	1	63.5	63.7	0.2	N
R-7-36	Residential	B	66	1	63.4	63.6	0.2	N
R-7-37	Residential	B	66	1	64.3	64.7	0.4	N
R-7-38	Residential	B	66	1	65.2	65.4	0.2	N
R-7-39	Residential	B	66	1	65.5	65.9	0.4	N
R-7-40	**Golf Course**	**C**	**66**	**1**	**70.6**	**70.6**	**0.0**	**Y**
R-7-41	Residential	B	66	1	65.1	65.5	0.4	N
R-7-42	Residential	B	66	1	63.5	64.0	0.5	N
R-7-43	Residential	B	66	1	64.4	64.9	0.5	N
R-7-44	Residential	B	66	1	63.9	64.4	0.5	N
R-7-45	**Golf Course**	**C**	**66**	**1**	**68.3**	**69.0**	**0.7**	**Y**
R-7-46	Residential	B	66	1	62.4	63.0	0.6	N
R-7-47	Residential	B	66	1	62.0	62.6	0.6	N
R-7-48	Residential	B	66	1	61.7	62.2	0.5	N
R-7-49	Residential	B	66	1	60.5	61.1	0.6	N
R-7-50	Residential	B	66	1	61.6	62.1	0.5	N
R-7-51	Residential	B	66	1	60.3	60.9	0.6	N
R-7-52	Residential	B	66	1	60.3	60.8	0.5	N
R-7-53	**Golf Course**	**C**	**66**	**1**	**67.0**	**67.7**	**0.7**	**Y**
R-7-54	Residential	B	66	1	60.7	61.3	0.6	N
R-7-55	Residential	B	66	1	65.3	65.9	0.6	N
R-7-56	Residential	B	66	1	64.8	65.4	0.6	N
R-7-57	Residential	B	66	1	62.6	63.2	0.6	N
R-7-58	Residential	B	66	1	63.5	64.2	0.7	N
R-7-59	**Golf Course**	**C**	**66**	**1**	**65.5**	**66.1**	**0.6**	**Y**
R-7-60	**Residential**	**B**	**66**	**1**	**66.7**	**67.2**	**0.5**	**Y**
R-7-61	**Residential**	**B**	**66**	**1**	**65.8**	**66.2**	**0.4**	**Y**
R-8-1	Residential	B	66	1	65.0	64.8	-0.2	N
R-8-2	Residential	B	66	1	62.8	63.3	0.5	N
R-8-3	Residential	B	66	1	64.6	65.6	1.0	N
R-8-4	Residential	B	66	1	61.6	62.2	0.6	N
R-8-5	Residential	B	66	1	63.3	63.4	0.1	N
R-8-6	Residential	B	66	1	61.3	62.0	0.7	N
R-8-7	Recreational	C	66	2	63.5	63.6	0.1	N
R-8-8	Residential	B	66	2	63.5	63.5	0.0	N

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	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-8-9	Residential	B	66	2	63.2	63.1	-0.1	N
R-8-10	Residential	B	66	2	61.1	61.4	0.3	N
R-8-11	Residential	B	66	2	58.7	59.2	0.5	N
R-8-12	Residential	B	66	2	56.9	57.5	0.6	N
R-8-13	Residential	B	66	2	57.5	58.0	0.5	N
R-8-14	Residential	B	66	2	48.1	48.9	0.8	N
R-8-15	Residential	B	66	2	50.0	50.6	0.6	N
R-8-16	Residential	B	66	2	56.0	56.6	0.6	N
R-8-17	Residential	B	66	2	63.1	63.5	0.4	N
R-8-18	Residential	B	66	1	59.5	60.4	0.9	N
R-8-19	Residential	B	66	2	60.4	61.3	0.9	N
R-8-20	Residential	B	66	2	60.8	61.8	1.0	N
R-8-21	Residential	B	66	2	56.8	57.4	0.6	N
R-8-22	Residential	B	66	1	56.1	56.9	0.8	N
R-8-23	Residential	B	66	1	64.2	64.3	0.1	N
R-8-24	Residential	B	66	1	63.9	64.3	0.4	N
R-8-25	Residential	B	66	1	64.2	64.6	0.4	N
R-8-26	Residential	B	66	1	63.6	64.1	0.5	N
R-8-27	Residential	B	66	1	63.2	64.0	0.8	N
R-8-28	Residential	B	66	1	64.5	65.0	0.5	N
R-8-29	Residential	B	66	1	61.7	62.7	1.0	N
R-8-30	Residential	B	66	1	62.9	63.6	0.7	N
R-8-31	Residential	B	66	1	61.2	62.5	1.3	N
R-8-32	Residential	B	66	1	64.2	64.8	0.6	N
R-8-33	Residential	B	66	1	62.6	63.6	1.0	N
R-8-34	**Residential**	**B**	**66**	**1**	**65.4**	**66.2**	**0.8**	**Y**
R-8-35	Residential	B	66	1	60.8	62.3	1.5	N
R-8-36	Residential	B	66	1	63.7	64.8	1.1	N
R-8-37	Residential	B	66	1	65.0	65.4	0.4	N
R-8-38	Residential	B	66	1	61.5	63.0	1.5	N
R-8-39	Residential	B	66	1	63.2	64.7	1.5	N
R-8-40	Residential	B	66	1	61.4	62.8	1.4	N
R-8-41	Residential	B	66	1	64.4	65.4	1.0	N
R-8-42	Residential	B	66	1	62.6	64.3	1.7	N
R-8-43	Residential	B	66	1	64.1	65.3	1.2	N
R-8-44	Residential	B	66	1	60.8	62.2	1.4	N
R-8-45	**Residential**	**B**	**66**	**1**	**65.6**	**66.0**	**0.4**	**Y**

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	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-8-46	Residential	B	66	1	63.2	64.7	1.5	N
R-8-47	Residential	B	66	1	61.8	63.2	1.4	N
R-8-48	**Residential**	**B**	**66**	**1**	**66.0**	**67.3**	**1.3**	**Y**
R-8-49	Residential	B	66	1	60.5	61.5	1.0	N
R-8-50	Residential	B	66	1	62.3	63.6	1.3	N
R-8-51	Residential	B	66	1	64.1	65.6	1.5	N
R-8-52	Residential	B	66	1	63.2	64.1	0.9	N
R-8-53	Residential	B	66	1	64.5	65.4	0.9	N
R-8-54	Residential	B	66	1	62.5	63.5	1.0	N
R-8-55	Residential	B	66	1	59.9	61.0	1.1	N
R-8-56	**Residential**	**B**	**66**	**1**	**68.1**	**68.6**	**0.5**	**Y**
R-8-57	Residential	B	66	1	63.3	64.1	0.8	N
R-8-58	Residential	B	66	1	61.7	62.8	1.1	N
R-8-59	Residential	B	66	1	62.5	63.8	1.3	N
R-8-60	Residential	B	66	1	61.0	62.4	1.4	N
R-8-61	Residential	B	66	1	61.6	63.0	1.4	N
R-8-62	Residential	B	66	1	60.4	61.9	1.5	N
R-8-63	Residential	B	66	1	60.5	61.8	1.3	N
R-8-64	Residential	B	66	1	63.8	64.9	1.1	N
R-8-65	Residential	B	66	1	59.8	61.2	1.4	N
R-8-66	**Cemetery**	**C**	**66**	**1**	**69.8**	**70.5**	**0.7**	**Y**
R-8-67	**Cemetery**	**C**	**66**	**1**	**73.1**	**73.8**	**0.7**	**Y**
R-8-68	Residential	B	66	1	59.2	60.7	1.5	N
R-8-69	Residential	B	66	1	61.5	63.0	1.5	N
R-8-70	**Residential**	**B**	**66**	**1**	**71.4**	**72.2**	**0.8**	**Y**
R-8-71	Residential	B	66	1	60.5	61.9	1.4	N
R-8-72	**Residential**	**B**	**66**	**1**	**69.4**	**70.2**	**0.8**	**Y**
R-8-73	**Residential**	**B**	**66**	**1**	**67.8**	**68.4**	**0.6**	**Y**
R-8-74	**Residential**	**B**	**66**	**1**	**69.5**	**70.3**	**0.8**	**Y**
R-8-75	Residential	B	66	1	64.3	65.0	0.7	N
R-8-76	Residential	B	66	1	65.1	65.7	0.6	N
R-8-77	Residential	B	66	1	61.6	62.3	0.7	N
R-8-78	Residential	B	66	1	60.9	61.7	0.8	N
R-8-79	Residential	B	66	1	61.3	62.0	0.7	N
R-8-80	Residential	B	66	1	61.8	62.5	0.7	N
R-8-81	Residential	B	66	1	60.6	61.2	0.6	N
R-8-82	Residential	B	66	1	62.0	62.7	0.7	N

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	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-8-83	Residential	B	66	1	57.9	58.6	0.7	N
R-8-84	Residential	B	66	1	58.9	59.8	0.9	N
R-8-85	**Residential**	**B**	**66**	**2**	**70.9**	**71.8**	**0.9**	**Y**
R-8-86	Residential	B	66	1	59.4	60.1	0.7	N
R-8-87	Residential	B	66	1	59.2	60.0	0.8	N
R-8-88	**Residential**	**B**	**66**	**1**	**66.9**	**67.8**	**0.9**	**Y**
R-8-89	**Recreational**	**C**	**66**	**2**	**74.8**	**75.9**	**1.1**	**Y**
R-8-90	Residential	B	66	1	58.2	58.9	0.7	N
R-8-91	Residential	B	66	1	60.7	61.5	0.8	N
R-8-92	**Residential**	**B**	**66**	**1**	**72.0**	**72.9**	**0.9**	**Y**
R-8-93	Residential	B	66	1	57.3	57.9	0.6	N
R-8-94	Residential	B	66	1	59.0	59.6	0.6	N
R-8-95	Residential	B	66	2	61.7	62.4	0.7	N
R-8-96	Residential	B	66	2	64.2	65.1	0.9	N
R-8-97	**Residential**	**B**	**66**	**2**	**65.6**	**66.2**	**0.6**	**Y**
R-8-98	Residential	B	66	2	57.7	58.5	0.8	N
R-8-99	**Residential**	**B**	**66**	**2**	**67.0**	**67.7**	**0.7**	**Y**
R-8-100	Residential	B	66	2	59.1	60.0	0.9	N
R-8-101	Residential	B	66	2	62.1	62.8	0.7	N
R-8-102	Residential	B	66	2	56.3	57.1	0.8	N
R-8-103	Residential	B	66	2	56.2	57.1	0.9	N
R-8-104	Residential	B	66	2	58.3	59.6	1.3	N
R-8-105	Residential	B	66	2	55.8	56.7	0.9	N
R-8-106	Residential	B	66	2	62.4	63.1	0.7	N
R-8-107	Residential	B	66	2	60.1	60.8	0.7	N
R-8-108	Residential	B	66	2	61.4	62.4	1.0	N
R-8-109	Residential	B	66	2	56.4	57.1	0.7	N
R-8-110	Residential	B	66	2	62.8	63.6	0.8	N
R-8-111	Residential	B	66	2	55.6	56.3	0.7	N
R-8-112	Residential	B	66	2	63.0	63.7	0.7	N
R-8-113	Residential	B	66	2	61.8	62.6	0.8	N
R-8-114	Residential	B	66	1	60.0	60.7	0.7	N
R-8-115	Residential	B	66	1	62.0	62.7	0.7	N
R-8-116	Residential	B	66	1	63.0	63.8	0.8	N
R-8-117	Residential	B	66	1	63.8	64.6	0.8	N
R-8-118	**Residential**	**B**	**66**	**1**	**68.6**	**69.5**	**0.9**	**Y**
R-8-119	**Residential**	**B**	**66**	**1**	**68.4**	**69.3**	**0.9**	**Y**

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Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-8-120	**Residential**	**B**	**66**	**1**	**65.2**	**66.0**	**0.8**	**Y**
R-8-121	Residential	B	66	1	60.2	60.9	0.7	N
R-8-122	Residential	B	66	2	59.6	60.3	0.7	N
R-8-123	Residential	B	66	2	58.2	59.0	0.8	N
R-8-124	**Residential**	**B**	**66**	**1**	**66.8**	**67.7**	**0.9**	**Y**
R-8-125	Residential	B	66	2	54.5	55.3	0.8	N
R-8-126	Residential	B	66	1	57.2	57.9	0.7	N
R-8-127	Residential	B	66	2	58.7	59.5	0.8	N
R-8-128	**Residential**	**B**	**66**	**1**	**67.6**	**68.3**	**0.7**	**Y**
R-8-129	Residential	B	66	3	62.7	63.5	0.8	N
R-8-130	**Residential**	**B**	**66**	**2**	**67.3**	**68.1**	**0.8**	**Y**
R-8-131	Residential	B	66	2	56.8	57.6	0.8	N
R-8-132	Residential	B	66	2	61.2	61.9	0.7	N
R-8-133	**Residential**	**B**	**66**	**1**	**66.1**	**67.0**	**0.9**	**Y**
R-8-134	**Residential**	**B**	**66**	**2**	**66.6**	**67.4**	**0.8**	**Y**
R-8-135	**Residential**	**B**	**66**	**1**	**65.6**	**66.5**	**0.9**	**Y**
R-8-136	Residential	B	66	2	63.1	63.9	0.8	N
R-8-137	**Residential**	**B**	**66**	**1**	**65.3**	**66.1**	**0.8**	**Y**
R-8-138	**Residential**	**B**	**66**	**1**	**65.7**	**66.5**	**0.8**	**Y**
R-8-139	Residential	B	66	1	64.9	65.7	0.8	N
R-8-140	Residential	B	66	1	64.5	65.4	0.9	N
R-8-141	**Residential**	**B**	**66**	**1**	**66.3**	**67.1**	**0.8**	**Y**
R-8-142	Residential	B	66	1	63.8	64.6	0.8	N
R-8-143	**Residential**	**B**	**66**	**1**	**65.7**	**66.5**	**0.8**	**Y**
R-8-144	Residential	B	66	1	64.0	64.8	0.8	N
R-8-145	Residential	B	66	1	63.2	64.0	0.8	N
R-8-146	Residential	B	66	1	61.9	62.7	0.8	N
R-8-147	**Residential**	**B**	**66**	**1**	**65.7**	**66.4**	**0.7**	**Y**
R-8-148	Residential	B	66	1	62.5	63.3	0.8	N
R-8-149	**Residential**	**B**	**66**	**1**	**65.5**	**66.3**	**0.8**	**Y**
R-8-150	Residential	B	66	1	64.5	65.2	0.7	N
R-8-151	Residential	B	66	1	61.9	62.6	0.7	N
R-8-152	Place of Worship	D	51	3	38.6	39.4	0.8	N
R-8-153	Residential	B	66	1	61.0	61.8	0.8	N
R-8-154	Residential	B	66	1	63.9	64.7	0.8	N
R-8-155	Residential	B	66	1	62.0	62.7	0.7	N
R-8-156	Residential	B	66	1	63.8	64.7	0.9	N

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Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-8-157	Residential	B	66	2	64.6	65.4	0.8	N
R-8-158	Residential	B	66	2	64.0	64.7	0.7	N
R-9-1	Residential	B	66	1	62.3	63.0	0.7	N
R-9-2	Residential	B	66	1	63.2	63.8	0.6	N
R-9-3	Residential	B	66	1	63.0	63.2	0.2	N
R-9-4	Residential	B	66	1	61.7	61.6	-0.1	N
R-9-5	Residential	B	66	1	65.2	65.6	0.4	N
R-9-6	Residential	B	66	1	64.9	65.5	0.6	N
R-9-7	Residential	B	66	1	65.2	65.7	0.5	N
R-9-8	Residential	B	66	1	64.3	64.8	0.5	N
R-9-9	Residential	B	66	1	63.7	64.3	0.6	N
R-9-10	Residential	B	66	1	59.1	59.6	0.5	N
R-9-11	Residential	B	66	1	60.0	60.5	0.5	N
R-9-12	Residential	B	66	1	59.3	59.9	0.6	N
R-9-13	**Residential**	**B**	**66**	**1**	**65.4**	**66.0**	**0.6**	**Y**
R-9-14	Residential	B	66	1	60.4	60.9	0.5	N
R-9-15	Residential	B	66	1	62.3	62.9	0.6	N
R-9-16	**Residential**	**B**	**66**	**1**	**66.8**	**68.2**	**1.4**	**Y**
R-9-17	**Residential**	**B**	**66**	**1**	**67.4**	**68.2**	**0.8**	**Y**
R-9-18	Residential	B	66	1	63.9	64.6	0.7	N
R-9-19	Residential	B	66	1	62.8	63.5	0.7	N
R-9-20	**Residential**	**B**	**66**	**1**	**67.6**	**68.6**	**1.0**	**Y**
R-9-21	Residential	B	66	1	64.0	64.7	0.7	N
R-9-22	Residential	B	66	1	64.1	65.0	0.9	N
R-9-23	**Residential**	**B**	**66**	**1**	**68.9**	**69.8**	**0.9**	**Y**
R-9-24	**Residential**	**B**	**66**	**1**	**69.6**	**70.6**	**1.0**	**Y**
R-9-25	Residential	B	66	1	60.5	61.0	0.5	N
R-9-26	**Residential**	**B**	**66**	**1**	**67.6**	**68.7**	**1.1**	**Y**
R-9-27	**Residential**	**B**	**66**	**1**	**67.9**	**69.0**	**1.1**	**Y**
R-10-1	Park	C	66	1	64.7	65.5	0.8	N
R-10-2	Park	C	66	1	64.6	65.4	0.8	N
R-10-3	Park	C	66	1	64.2	65.0	0.8	N
R-10-4	Park	C	66	1	63.6	64.4	0.8	N
R-10-5	Park	C	66	1	63.6	64.5	0.9	N
R-10-6	Park	C	66	1	63.9	64.7	0.8	N
R-10-7	Park	C	66	1	63.0	63.8	0.8	N
R-10-8	Park	C	66	1	63.5	64.3	0.8	N

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	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-10-9	Park	C	66	1	64.2	65.0	0.8	N
R-10-10	Park	C	66	1	62.8	63.6	0.8	N
R-10-11	Park	C	66	1	61.8	62.6	0.8	N
R-10-12	Park	C	66	1	63.9	64.8	0.9	N
R-10-13	Park	C	66	1	62.3	63.1	0.8	N
R-10-14	Park	C	66	1	64.1	64.9	0.8	N
R-10-15	Park	C	66	1	63.4	64.2	0.8	N
R-10-16	Park	C	66	1	62.7	63.5	0.8	N
R-10-17	Park	C	66	1	61.7	62.5	0.8	N
R-10-18	Park	C	66	1	63.7	64.5	0.8	N
R-10-19	Park	C	66	1	62.7	63.5	0.8	N
R-10-20	Park	C	66	1	63.0	63.8	0.8	N
R-10-21	Park	C	66	1	62.0	62.8	0.8	N
R-10-22	Park	C	66	1	62.2	63.0	0.8	N
R-10-23	Park	C	66	1	62.7	63.5	0.8	N
R-10-24	Park	C	66	1	62.0	62.8	0.8	N
R-10-25	Park	C	66	1	63.5	64.6	1.1	N
R-10-26	Park	C	66	1	63.7	64.8	1.1	N
R-10-27	Park	C	66	1	63.1	64.0	0.9	N
R-10-28	Park	C	66	1	62.7	63.7	1.0	N
R-10-29	Park	C	66	1	63.8	64.8	1.0	N
R-10-30	Park	C	66	1	63.0	64.0	1.0	N
R-10-31	Park	C	66	1	62.7	63.6	0.9	N
R-10-32	Park	C	66	1	62.7	63.7	1.0	N
R-10-33	Park	C	66	1	63.4	64.5	1.1	N
R-10-34	Park	C	66	1	62.2	63.1	0.9	N
R-10-35	Park	C	66	1	62.7	63.8	1.1	N
R-10-36	Park	C	66	1	62.4	63.4	1.0	N
R-10-37	Park	C	66	1	63.2	64.2	1.0	N
R-10-38	Park	C	66	1	62.8	63.9	1.1	N
R-10-39	Park	C	66	1	62.1	63.0	0.9	N
R-10-40	Park	C	66	1	62.5	63.5	1.0	N
R-10-41	Park	C	66	1	62.2	63.2	1.0	N
R-10-42	Park	C	66	1	62.5	63.6	1.1	N
R-10-43	Park	C	66	1	61.8	62.8	1.0	N
R-10-44	Park	C	66	1	62.2	63.3	1.1	N
R-10-45	Park	C	66	1	61.9	62.9	1.0	N

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	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-10-46	Park	C	66	1	62.4	63.4	1.0	N
R-10-47	Park	C	66	1	60.8	61.7	0.9	N
R-10-48	Park	C	66	1	60.6	61.5	0.9	N
R-10-49	Park	C	66	1	61.6	62.6	1.0	N
R-10-50	Park	C	66	1	60.5	61.4	0.9	N
R-10-51	Park	C	66	1	60.7	61.7	1.0	N
R-10-52	Park	C	66	1	60.1	61.0	0.9	N
R-10-53	Park	C	66	1	60.6	61.5	0.9	N
R-10-54	Park	C	66	1	60.4	61.3	0.9	N
R-10-55	Park	C	66	1	61.3	62.2	0.9	N
R-10-56	Park	C	66	1	60.8	61.8	1.0	N
R-10-57	Park	C	66	1	60.6	61.6	1.0	N
R-10-58	Park	C	66	1	61.2	62.2	1.0	N
R-10-59	Park	C	66	1	60.6	61.6	1.0	N
R-11-1	Hotel	E	71	1	60.4	61.2	0.8	N
R-11-2	Recreation	C	66	2	55.7	56.4	0.7	N
R-11-3	**Residential**	**B**	**66**	**1**	**67.6**	**67.9**	**0.3**	**Y**
R-11-4	**Residential**	**B**	**66**	**1**	**65.7**	**66.1**	**0.4**	**Y**
R-11-5	Residential	B	66	1	54.8	55.6	0.8	N
R-11-6	**Residential**	**B**	**66**	**1**	**65.6**	**66.1**	**0.5**	**Y**
R-11-7	Residential	B	66	4	61.3	61.7	0.4	N
R-11-8	Residential	B	66	2	62.1	62.5	0.4	N
R-11-9	Residential	B	66	1	54.7	55.4	0.7	N
R-11-10	Residential	B	66	1	53.4	54.2	0.8	N
R-11-11	Residential	B	66	1	53.4	54.2	0.8	N
R-11-12	Residential	B	66	1	53.4	54.2	0.8	N
R-11-13	Hotel	E	71	1	53.9	54.6	0.7	N
R-11-14	Residential	B	66	2	62.3	62.6	0.3	N
R-11-15	Residential	B	66	1	53.6	54.4	0.8	N
R-11-16	**Residential**	**B**	**66**	**1**	**68.1**	**68.5**	**0.4**	**Y**
R-11-17	Residential	B	66	1	52.8	53.5	0.7	N
R-11-18	Residential	B	66	1	55.6	56.2	0.6	N
R-11-19 (HP3)	**Residential/Historic**	**B**	**66**	**1**	**68.1**	**68.6**	**0.5**	**Y**
R-11-20 (HP4)	**Residential/Historic**	**B**	**66**	**1**	**68.2**	**68.6**	**0.4**	**Y**
R-11-21	Residential	B	66	1	56.8	57.6	0.8	N
R-11-22	Residential	B	66	1	65.4	65.9	0.5	N
R-11-23	**Residential**	**B**	**66**	**1**	**68.4**	**68.9**	**0.5**	**Y**

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Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-11-24	Residential	B	66	1	64.0	64.6	0.6	N
R-11-25	Residential	B	66	1	56.2	56.9	0.7	N
R-11-26	Residential	B	66	1	54.6	55.4	0.8	N
R-11-27	Residential	B	66	1	54.3	55.0	0.7	N
R-11-28	**Residential**	**B**	**66**	**1**	**68.7**	**69.1**	**0.4**	**Y**
R-11-29	Residential	B	66	1	64.5	65.1	0.6	N
R-11-30	Residential	B	66	1	53.3	54.0	0.7	N
R-11-31	Residential	B	66	1	54.7	55.4	0.7	N
R-11-32	**Residential**	**B**	**66**	**1**	**68.7**	**69.2**	**0.5**	**Y**
R-11-33	Residential	B	66	1	55.4	56.1	0.7	N
R-11-34 (HP5)	Residential/Historic	B	66	1	57.3	57.9	0.6	N
R-11-35	Residential	B	66	1	64.9	65.5	0.6	N
R-11-36	Residential	B	66	1	56.5	57.3	0.8	N
R-11-37	Food Bank	D	51	2	30.3	31.0	0.7	N
R-11-38	Residential	B	66	1	64.8	65.5	0.7	N
R-11-39	Residential	B	66	1	63.3	64.0	0.7	N
R-11-40	**Residential**	**B**	**66**	**1**	**68.7**	**69.4**	**0.7**	**Y**
R-11-41	**Residential**	**B**	**66**	**1**	**68.0**	**68.7**	**0.7**	**Y**
R-11-42	**Residential**	**B**	**66**	**1**	**67.6**	**68.3**	**0.7**	**Y**
R-12-1	Place of Worship	D	51	2	39.9	41.3	1.4	N
R-12-2	Place of Worship	D	51	1	29.5	30.6	1.1	N
R-12-3	Library	C	66	9	60.9	61.9	1.0	N
R-12-4 (HP1)	**Historic**	**C**	**66**	**1**	**66.9**	**67.7**	**0.8**	**Y**
R-12-5 (HP2)	**Historic**	**C**	**66**	**1**	**66.6**	**67.9**	**1.3**	**Y**
R-12-6	Residential	B	66	1	63.5	64.9	1.4	N
R-12-7	Residential	B	66	3	64.7	65.4	0.7	N
R-12-8	Residential	B	66	1	64.5	65.2	0.7	N
R-12-9	Residential	B	66	1	64.5	65.2	0.7	N
R-12-10	**Residential**	**B**	**66**	**1**	**65.6**	**66.3**	**0.7**	**Y**
R-12-11	Residential	B	66	1	61.7	62.5	0.8	N
R-12-12	**Residential**	**B**	**66**	**1**	**67.0**	**69.0**	**2.0**	**Y**
R-12-13	**Residential**	**B**	**66**	**1**	**68.0**	**69.5**	**1.5**	**Y**
R-12-14	**Residential**	**B**	**66**	**1**	**66.8**	**67.9**	**1.1**	**Y**
R-12-15	Office - Outdoor Use	E	71	1	63.6	64.6	1.0	N
R-12-16	Restaurant	E	71	2	63.2	64.3	1.1	N
R-12-17	Residential	B	66	1	64.2	65.3	1.1	N
R-12-18	Residential	B	66	1	64.7	65.5	0.8	N

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	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-12-19	**Recreation**	**C**	**66**	**1**	**73.4**	**74.2**	**0.8**	**Y**
R-12-20	**Recreation**	**C**	**66**	**1**	**72.2**	**72.9**	**0.7**	**Y**
R-12-21	**Recreation**	**C**	**66**	**1**	**71.6**	**72.2**	**0.6**	**Y**
R-13-1	Residential	B	66	1	56.6	58.4	1.8	N
R-13-2	Residential	B	66	1	57.6	59.6	2.0	N
R-13-3	Residential	B	66	1	58.1	60.3	2.2	N
R-13-4	Residential	B	66	1	59.3	61.6	2.3	N
R-13-5	Residential	B	66	1	58.3	60.6	2.3	N
R-13-6	Residential	B	66	1	57.5	59.7	2.2	N
R-13-7	Residential	B	66	1	57.1	59.1	2.0	N
R-13-8	Residential	B	66	1	56.7	58.6	1.9	N
R-13-9	Residential	B	66	1	56.2	58.2	2.0	N
R-13-10	Residential	B	66	1	55.9	57.8	1.9	N
R-13-11	Residential	B	66	1	56.0	57.7	1.7	N
R-13-12	Residential	B	66	1	45.5	47.0	1.5	N
R-13-13	Residential	B	66	1	43.7	45.1	1.4	N
R-13-14	Residential	B	66	1	43.4	44.8	1.4	N
R-13-15	Residential	B	66	1	44.4	45.9	1.5	N
R-13-16	Residential	B	66	1	52.3	54.0	1.7	N
R-13-17	Residential	B	66	1	51.9	53.7	1.8	N
R-13-18	Residential	B	66	1	46.0	47.9	1.9	N
R-13-19	Residential	B	66	1	45.4	47.2	1.8	N
R-13-20	Residential	B	66	1	54.7	56.3	1.6	N
R-13-21	Residential	B	66	1	45.1	47.0	1.9	N
R-13-22	Residential	B	66	1	46.2	47.9	1.7	N
R-13-23	Residential	B	66	1	53.6	55.0	1.4	N
R-13-24	Residential	B	66	1	49.8	51.5	1.7	N
R-13-25	Residential	B	66	1	53.0	54.4	1.4	N
R-13-26	Residential	B	66	1	62.1	63.0	0.9	N
R-13-27	Residential	B	66	1	62.6	63.6	1.0	N
R-13-28	Residential	B	66	1	58.9	60.3	1.4	N
R-13-29	Residential	B	66	1	59.4	60.8	1.4	N
R-13-30	Residential	B	66	1	61.9	63.5	1.6	N
R-14-1	Hotel	E	71	1	57.0	58.6	1.6	N
R-15-1	Place of Worship	C	66	1	64.3	65.6	1.3	N
R-16-1	Residential	B	66	1	55.6	56.7	1.1	N
R-16-2	Residential	B	66	1	56.6	57.7	1.1	N

Receiver IDs with a decimal point (.) indicate floor. For example, R-18-1.1 indicates first floor and R-18-1.2 indicates second floor. If there is not a decimal point, it is first floor.
Boldface indicates the noise levels approach or exceed the NAC.

Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-16-3	Residential	B	66	1	57.3	58.3	1.0	N
R-16-4	Residential	B	66	1	58.2	59.2	1.0	N
R-16-5	Residential	B	66	1	57.2	58.3	1.1	N
R-16-6	Residential	B	66	1	58.2	59.3	1.1	N
R-16-7	Residential	B	66	1	60.3	61.1	0.8	N
R-16-8	Residential	B	66	1	56.1	57.4	1.3	N
R-16-9	Residential	B	66	1	61.6	62.5	0.9	N
R-16-10	Residential	B	66	1	58.6	59.7	1.1	N
R-16-11	Residential	B	66	1	62.3	63.1	0.8	N
R-16-12	Residential	B	66	1	63.2	64.1	0.9	N
R-16-13	Residential	B	66	1	56.9	58.2	1.3	N
R-16-14	Residential	B	66	1	57.2	58.5	1.3	N
R-16-15	Residential	B	66	1	58.8	59.9	1.1	N
R-16-16	Residential	B	66	1	64.8	65.5	0.7	N
R-16-17	Residential	B	66	1	60.2	61.2	1.0	N
R-16-18	Residential	B	66	1	59.2	60.5	1.3	N
R-16-19	**Residential**	**B**	**66**	**1**	**67.3**	**68.0**	**0.7**	**Y**
R-16-20	Residential	B	66	1	61.3	62.5	1.2	N
R-16-21 (HP7)	**Residential/Historic**	**B**	**66**	**1**	**71.5**	**72.8**	**1.3**	**Y**
R-16-22	Residential	B	66	1	61.1	62.3	1.2	N
R-16-23	Residential	B	66	1	63.6	65.0	1.4	N
R-16-24	Residential	B	66	1	59.3	60.8	1.5	N
R-16-25	Residential	B	66	1	61.4	62.8	1.4	N
R-16-26	**Residential**	**B**	**66**	**1**	**66.7**	**68.3**	**1.6**	**Y**
R-16-27	Residential	B	66	1	62.2	63.6	1.4	N
R-16-28	Residential	B	66	1	58.5	60.2	1.7	N
R-16-29	Residential	B	66	1	61.7	63.1	1.4	N
R-16-30	Residential	B	66	1	61.1	62.6	1.5	N
R-16-31	Residential	B	66	1	60.6	62.3	1.7	N
R-16-32	Residential	B	66	1	60.4	61.9	1.5	N
R-16-33	Residential	B	66	1	60.0	61.5	1.5	N
R-16-34	Residential	B	66	1	58.9	60.4	1.5	N
R-16-35	**Residential**	**B**	**66**	**1**	**64.3**	**66.8**	**2.5**	**Y**
R-16-36	Residential	B	66	1	57.7	59.3	1.6	N
R-16-37	Residential	B	66	1	62.8	64.8	2.0	N
R-16-38	Residential	B	66	1	56.6	57.9	1.3	N
R-16-39	Residential	B	66	1	59.5	61.2	1.7	N

Receiver IDs with a decimal point (.) indicate floor. For example, R-18-1.1 indicates first floor and R-18-1.2 indicates second floor. If there is not a decimal point, it is first floor.
Boldface indicates the noise levels approach or exceed the NAC.

Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-16-40	**Residential**	**B**	**66**	**1**	**65.0**	**67.2**	**2.2**	**Y**
R-16-41	Residential	B	66	1	58.1	59.8	1.7	N
R-16-42	Residential	B	66	1	57.0	58.9	1.9	N
R-16-43	Residential	B	66	1	61.2	63.3	2.1	N
R-16-44	**Residential**	**B**	**66**	**1**	**65.1**	**66.8**	**1.7**	**Y**
R-16-45	Residential	B	66	1	56.1	58.2	2.1	N
R-16-46	Residential	B	66	1	61.3	63.5	2.2	N
R-16-47	**Residential**	**B**	**66**	**1**	**64.8**	**66.8**	**2.0**	**Y**
R-16-48	Residential	B	66	1	61.1	63.5	2.4	N
R-16-49	**Residential**	**B**	**66**	**1**	**64.9**	**66.8**	**1.9**	**Y**
R-16-50	**Residential**	**B**	**66**	**1**	**64.9**	**66.3**	**1.4**	**Y**
R-16-51	Residential	B	66	1	60.8	63.1	2.3	N
R-16-52	Residential	B	66	1	59.1	60.9	1.8	N
R-16-53	Residential	B	66	1	57.6	59.4	1.8	N
R-16-54	**Residential**	**B**	**66**	**1**	**64.7**	**66.9**	**2.2**	**Y**
R-16-55	**Residential**	**B**	**66**	**1**	**64.1**	**66.5**	**2.4**	**Y**
R-16-56	Residential	B	66	1	60.2	62.0	1.8	N
R-16-57	Residential	B	66	1	61.9	64.0	2.1	N
R-16-58	Residential	B	66	1	58.2	59.7	1.5	N
R-16-59	Residential	B	66	1	58.8	60.6	1.8	N
R-16-60	Residential	B	66	1	61.8	64.1	2.3	N
R-16-61	**Residential**	**B**	**66**	**1**	**65.7**	**67.1**	**1.4**	**Y**
R-16-62 (HP8)	**Residential/Historic**	**B**	**66**	**1**	**65.4**	**67.9**	**2.5**	**Y**
R-16-63	Residential	B	66	1	58.3	59.9	1.6	N
R-16-64	Residential	B	66	1	61.3	63.0	1.7	N
R-16-65	Residential	B	66	1	59.7	61.3	1.6	N
R-17-1	Residential	B	66	1	64.4	65.3	0.9	N
R-17-2	Residential	B	66	1	61.9	62.2	0.3	N
R-17-3	Residential	B	66	1	60.5	60.9	0.4	N
R-17-4	**Residential**	**B**	**66**	**1**	**69.5**	**71.2**	**1.7**	**Y**
R-17-5	**Residential**	**B**	**66**	**1**	**64.8**	**66.3**	**1.5**	**Y**
R-17-6	**Residential**	**B**	**66**	**1**	**69.3**	**70.9**	**1.6**	**Y**
R-17-7	**Residential**	**B**	**66**	**1**	**65.0**	**66.6**	**1.6**	**Y**
R-17-8	Residential	B	66	1	60.7	62.2	1.5	N
R-17-9	**Residential**	**B**	**66**	**1**	**69.4**	**71.1**	**1.7**	**Y**
R-17-10	**Residential**	**B**	**66**	**1**	**65.0**	**66.5**	**1.5**	**Y**
R-17-11	Residential	B	66	1	61.1	62.7	1.6	N

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Boldface indicates the noise levels approach or exceed the NAC.

Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-17-12	**Residential**	**B**	**66**	**1**	**69.3**	**71.0**	**1.7**	**Y**
R-17-13	**Residential**	**B**	**66**	**1**	**64.7**	**66.3**	**1.6**	**Y**
R-17-14	Residential	B	66	1	60.8	62.4	1.6	N
R-17-15	**Residential**	**B**	**66**	**1**	**70.3**	**72.0**	**1.7**	**Y**
R-17-16	**Residential**	**B**	**66**	**1**	**65.1**	**66.7**	**1.6**	**Y**
R-17-17	**Residential**	**B**	**66**	**1**	**70.7**	**72.4**	**1.7**	**Y**
R-17-18	Residential	B	66	1	61.8	63.5	1.7	N
R-17-19	Residential	B	66	1	61.8	63.4	1.6	N
R-17-20	**Residential**	**B**	**66**	**1**	**65.1**	**66.7**	**1.6**	**Y**
R-17-21	**Residential**	**B**	**66**	**1**	**70.4**	**72.1**	**1.7**	**Y**
R-17-22	**Residential**	**B**	**66**	**1**	**70.9**	**72.7**	**1.8**	**Y**
R-17-23	Residential	B	66	1	60.3	61.9	1.6	N
R-17-24	Residential	B	66	1	62.7	64.3	1.6	N
R-17-25	Residential	B	66	1	61.5	63.1	1.6	N
R-17-26	**Residential**	**B**	**66**	**1**	**65.7**	**67.4**	**1.7**	**Y**
R-17-27	**Residential**	**B**	**66**	**1**	**73.3**	**75.0**	**1.7**	**Y**
R-17-28	**Residential**	**B**	**66**	**1**	**65.6**	**67.2**	**1.6**	**Y**
R-17-29	**Residential**	**B**	**66**	**1**	**68.4**	**70.1**	**1.7**	**Y**
R-17-30	Residential	B	66	1	63.3	65.0	1.7	N
R-17-31	Residential	B	66	1	59.8	61.4	1.6	N
R-17-32	Residential	B	66	1	58.1	59.6	1.5	N
R-17-33	Residential	B	66	1	59.8	61.4	1.6	N
R-17-34	**Residential**	**B**	**66**	**1**	**64.7**	**66.4**	**1.7**	**Y**
R-17-35	Residential	B	66	1	61.8	63.5	1.7	N
R-17-36	Residential	B	66	1	58.9	60.5	1.6	N
R-17-37	**Residential**	**B**	**66**	**1**	**68.7**	**70.3**	**1.6**	**Y**
R-17-38	**Residential**	**B**	**66**	**1**	**69.8**	**71.5**	**1.7**	**Y**
R-17-39	**Residential**	**B**	**66**	**1**	**69.7**	**71.3**	**1.6**	**Y**
R-17-40	Residential	B	66	1	63.5	65.1	1.6	N
R-17-41	Residential	B	66	1	59.4	61.0	1.6	N
R-17-42	**Residential**	**B**	**66**	**1**	**69.5**	**71.1**	**1.6**	**Y**
R-17-43	Residential	B	66	1	63.7	65.3	1.6	N
R-17-44	**Residential**	**B**	**66**	**1**	**69.3**	**70.9**	**1.6**	**Y**
R-17-45	Residential	B	66	1	58.7	60.3	1.6	N
R-17-46	Residential	B	66	1	63.2	64.9	1.7	N
R-17-47	**Residential**	**B**	**66**	**1**	**69.3**	**71.0**	**1.7**	**Y**
R-17-48	Residential	B	66	1	58.7	60.3	1.6	N

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Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-17-49	Residential	B	66	1	58.9	60.4	1.5	N
R-17-50	Residential	B	66	1	62.7	64.3	1.6	N
R-17-51	Residential	B	66	1	63.3	64.8	1.5	N
R-17-52	**Residential**	**B**	**66**	**1**	**68.4**	**70.1**	**1.7**	**Y**
R-17-53	**Residential**	**B**	**66**	**1**	**68.0**	**69.5**	**1.5**	**Y**
R-17-54	Residential	B	66	1	63.8	65.2	1.4	N
R-17-55	Residential	B	66	1	61.9	63.4	1.5	N
R-17-56	Residential	B	66	1	60.5	62.1	1.6	N
R-17-57	Residential	B	66	1	58.9	60.5	1.6	N
R-17-58	**Residential**	**B**	**66**	**1**	**64.7**	**66.7**	**2.0**	**Y**
R-17-59	Residential	B	66	1	63.4	64.9	1.5	N
R-17-60	Residential	B	66	1	60.1	61.6	1.5	N
R-17-61	Residential	B	66	1	58.4	60.0	1.6	N
R-17-62	Residential	B	66	1	61.6	63.0	1.4	N
R-17-63	Residential	B	66	1	59.3	60.8	1.5	N
R-17-64	**Residential**	**B**	**66**	**1**	**65.4**	**66.7**	**1.3**	**Y**
R-17-65	Residential	B	66	1	62.8	64.4	1.6	N
R-17-66	Residential	B	66	1	60.7	62.2	1.5	N
R-17-67	**Residential**	**B**	**66**	**1**	**69.5**	**71.0**	**1.5**	**Y**
R-17-68	**Residential**	**B**	**66**	**1**	**68.9**	**70.4**	**1.5**	**Y**
R-17-69	**Residential**	**B**	**66**	**1**	**65.0**	**66.6**	**1.6**	**Y**
R-17-70	Residential	B	66	1	61.4	63.0	1.6	N
R-17-71	Residential	B	66	1	59.6	61.1	1.5	N
R-17-72	Residential	B	66	1	63.4	65.0	1.6	N
R-17-73	Residential	B	66	1	63.2	64.7	1.5	N
R-17-74	Residential	B	66	1	61.5	63.1	1.6	N
R-17-75	**Residential**	**B**	**66**	**1**	**65.3**	**66.9**	**1.6**	**Y**
R-17-76	**Residential**	**B**	**66**	**1**	**68.8**	**70.2**	**1.4**	**Y**
R-17-77	Residential	B	66	1	60.3	61.9	1.6	N
R-17-78	Residential	B	66	1	61.4	62.9	1.5	N
R-17-79	Residential	B	66	1	58.5	60.0	1.5	N
R-17-80	**Residential**	**B**	**66**	**1**	**65.4**	**66.8**	**1.4**	**Y**
R-17-81	Residential	B	66	1	60.2	61.7	1.5	N
R-17-82	Residential	B	66	1	63.7	65.1	1.4	N
R-17-83	Residential	B	66	1	62.3	63.7	1.4	N
R-17-84	Residential	B	66	1	59.2	60.7	1.5	N
R-17-85	**Residential**	**B**	**66**	**1**	**67.3**	**68.7**	**1.4**	**Y**

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Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-17-86	Residential	B	66	1	58.2	59.5	1.3	N
R-17-87	Residential	B	66	1	53.4	54.7	1.3	N
R-17-88	Residential	B	66	1	60.7	62.0	1.3	N
R-17-89	Residential	B	66	1	63.6	64.9	1.3	N
R-17-90	Residential	B	66	1	56.2	57.5	1.3	N
R-17-91	Residential	B	66	1	52.4	53.6	1.2	N
R-17-92	Residential	B	66	1	54.6	55.8	1.2	N
R-17-93	**Residential**	**B**	**66**	**1**	**65.7**	**67.2**	**1.5**	**Y**
R-17-94	Residential	B	66	1	54.5	55.9	1.4	N
R-17-95	Residential	B	66	1	51.2	52.5	1.3	N
R-17-96	Residential	B	66	1	58.3	59.6	1.3	N
R-17-97	Residential	B	66	1	56.5	57.7	1.2	N
R-17-98	Residential	B	66	1	50.4	51.6	1.2	N
R-17-99	Residential	B	66	1	53.2	54.4	1.2	N
R-17-100	Residential	B	66	1	52.2	53.5	1.3	N
R-17-101	Residential	B	66	1	62.6	63.9	1.3	N
R-17-102	Residential	B	66	1	55.9	57.3	1.4	N
R-17-103	Residential	B	66	1	55.1	56.4	1.3	N
R-17-104	Residential	B	66	1	54.4	55.6	1.2	N
R-17-105	Residential	B	66	1	60.1	61.3	1.2	N
R-17-106	Residential	B	66	1	58.4	59.8	1.4	N
R-17-107	Residential	B	66	1	57.2	58.4	1.2	N
R-17-108	Residential	B	66	1	64.3	65.5	1.2	N
R-18-1.1	Residential	B	66	1	54.9	57.8	2.9	N
R-18-1.2	Residential	B	66	1	59.4	60.7	1.3	N
R-18-2.1	Residential	B	66	1	46.9	48.1	1.2	N
R-18-2.2	Residential	B	66	1	51.0	52.1	1.1	N
R-18-3.1	Residential	B	66	1	55.7	58.0	2.3	N
R-18-3.2	Residential	B	66	1	60.1	61.4	1.3	N
R-18-4.1	Residential	B	66	1	56.3	58.5	2.2	N
R-18-4.2	Residential	B	66	1	60.7	62.0	1.3	N
R-18-5.1	Residential	B	66	1	47.7	48.9	1.2	N
R-18-5.2	Residential	B	66	1	51.8	52.8	1.0	N
R-18-6	Residential	B	66	1	63.4	65.1	1.7	N
R-18-7.1	Residential	B	66	1	48.0	49.1	1.1	N
R-18-7.2	Residential	B	66	1	52.2	53.2	1.0	N
R-18-8.1	Residential	B	66	1	57.2	58.9	1.7	N

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Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-18-8.2	Residential	B	66	1	61.7	62.8	1.1	N
R-18-9.1	Residential	B	66	1	48.7	49.9	1.2	N
R-18-9.2	Residential	B	66	1	52.9	53.8	0.9	N
R-18-10.1	Residential	B	66	1	59.3	60.5	1.2	N
R-18-10.2	Residential	B	66	1	63.8	65.0	1.2	N
R-18-11.1	Residential	B	66	1	49.9	51.1	1.2	N
R-18-11.2	Residential	B	66	1	55.2	56.1	0.9	N
R-18-12.1	Residential	B	66	1	51.3	52.7	1.4	N
R-18-12.2	Residential	B	66	1	55.0	56.4	1.4	N
R-18-13.1	Residential	B	66	1	60.5	61.6	1.1	N
R-18-13.2	**Residential**	**B**	**66**	**1**	**64.8**	**66.1**	**1.3**	**Y**
R-18-14.1	Residential	B	66	1	51.8	53.3	1.5	N
R-18-14.2	Residential	B	66	1	55.7	57.2	1.5	N
R-18-15.1	Residential	B	66	1	61.2	62.3	1.1	N
R-18-15.2	**Residential**	**B**	**66**	**1**	**65.8**	**66.9**	**1.1**	**Y**
R-18-16.1	Residential	B	66	1	45.6	46.7	1.1	N
R-18-16.2	Residential	B	66	1	49.1	50.0	0.9	N
R-18-17.1	Residential	B	66	1	50.6	51.7	1.1	N
R-18-17.2	Residential	B	66	1	55.7	56.8	1.1	N
R-18-18.1	Residential	B	66	1	46.0	47.1	1.1	N
R-18-18.2	Residential	B	66	1	49.8	50.7	0.9	N
R-18-19.1	Residential	B	66	1	50.7	51.9	1.2	N
R-18-19.2	Residential	B	66	1	55.9	57.0	1.1	N
R-18-20.1	Residential	B	66	1	52.7	54.6	1.9	N
R-18-20.2	Residential	B	66	1	56.9	58.2	1.3	N
R-18-21.1	Residential	B	66	1	62.8	63.7	0.9	N
R-18-21.2	**Residential**	**B**	**66**	**1**	**67.5**	**68.5**	**1.0**	**Y**
R-18-22.1	Residential	B	66	1	53.8	55.6	1.8	N
R-18-22.2	Residential	B	66	1	58.0	59.3	1.3	N
R-18-23.1	Residential	B	66	1	47.3	48.4	1.1	N
R-18-23.2	Residential	B	66	1	51.5	52.3	0.8	N
R-18-24.1	Residential	B	66	1	51.4	52.6	1.2	N
R-18-24.2	Residential	B	66	1	56.1	57.2	1.1	N
R-18-25.1	Residential	B	66	1	49.3	50.5	1.2	N
R-18-25.2	Residential	B	66	1	53.8	54.6	0.8	N
R-18-26.1	Residential	B	66	1	51.0	52.6	1.6	N
R-18-26.2	Residential	B	66	1	56.8	58.0	1.2	N

Receiver IDs with a decimal point (.) indicate floor. For example, R-18-1.1 indicates first floor and R-18-1.2 indicates second floor. If there is not a decimal point, it is first floor.
Boldface indicates the noise levels approach or exceed the NAC.

Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-18-27.1	Residential	B	66	1	64.8	65.8	1.0	N
R-18-27.2	**Residential**	**B**	**66**	**1**	**70.3**	**71.3**	**1.0**	**Y**
R-18-28.1	Residential	B	66	1	50.1	51.4	1.3	N
R-18-28.2	Residential	B	66	1	56.5	57.7	1.2	N
R-18-29.1	**Residential**	**B**	**66**	**1**	**65.1**	**66.0**	**0.9**	**Y**
R-18-29.2	**Residential**	**B**	**66**	**1**	**70.7**	**71.9**	**1.2**	**Y**
R-18-30.1	Residential	B	66	1	46.3	47.9	1.6	N
R-18-30.2	Residential	B	66	1	48.8	50.2	1.4	N
R-18-31.1	Residential	B	66	1	56.2	58.3	2.1	N
R-18-31.2	Residential	B	66	1	60.9	61.8	0.9	N
R-18-32.1	Residential	B	66	1	42.5	43.6	1.1	N
R-18-32.2	Residential	B	66	1	44.4	45.6	1.2	N
R-18-33.1	Residential	B	66	1	49.8	51.0	1.2	N
R-18-33.2	Residential	B	66	1	53.2	54.6	1.4	N
R-18-34.1	**Residential**	**B**	**66**	**1**	**65.5**	**66.4**	**0.9**	**Y**
R-18-34.2	**Residential**	**B**	**66**	**1**	**71.3**	**72.3**	**1.0**	**Y**
R-18-35.1	Residential	B	66	1	50.9	52.1	1.2	N
R-18-35.2	Residential	B	66	1	57.5	58.6	1.1	N
R-18-36.1	Residential	B	66	1	56.9	58.7	1.8	N
R-18-36.2	Residential	B	66	1	61.9	62.7	0.8	N
R-18-37.1	Residential	B	66	1	45.4	46.7	1.3	N
R-18-37.2	Residential	B	66	1	48.3	49.5	1.2	N
R-18-38.1	Residential	B	66	1	41.5	42.6	1.1	N
R-18-38.2	Residential	B	66	1	43.9	44.9	1.0	N
R-18-39.1	Residential	B	66	1	39.9	41.0	1.1	N
R-18-39.2	Residential	B	66	1	42.6	43.7	1.1	N
R-18-40.1	**Residential**	**B**	**66**	**1**	**65.9**	**66.7**	**0.8**	**Y**
R-18-40.2	**Residential**	**B**	**66**	**1**	**72.0**	**73.0**	**1.0**	**Y**
R-18-41.1	Residential	B	66	1	59.6	60.9	1.3	N
R-18-41.2	**Residential**	**B**	**66**	**1**	**65.4**	**66.5**	**1.1**	**Y**
R-18-42.1	Residential	B	66	1	57.1	59.3	2.2	N
R-18-42.2	Residential	B	66	1	62.1	62.8	0.7	N
R-18-43.1	Residential	B	66	1	46.1	47.3	1.2	N
R-18-43.2	Residential	B	66	1	49.7	50.9	1.2	N
R-18-44.1	Residential	B	66	1	41.3	42.5	1.2	N
R-18-44.2	Residential	B	66	1	43.4	44.5	1.1	N
R-18-45.1	Residential	B	66	1	40.0	41.2	1.2	N

Receiver IDs with a decimal point (.) indicate floor. For example, R-18-1.1 indicates first floor and R-18-1.2 indicates second floor. If there is not a decimal point, it is first floor.
Boldface indicates the noise levels approach or exceed the NAC.

Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-18-45.2	Residential	B	66	1	42.3	43.4	1.1	N
R-18-46.1	Residential	B	66	1	57.3	59.3	2.0	N
R-18-46.2	Residential	B	66	1	62.0	63.2	1.2	N
R-18-47.1	Residential	B	66	1	47.5	48.7	1.2	N
R-18-47.2	Residential	B	66	1	51.0	52.2	1.2	N
R-18-48.1	Residential	B	66	1	41.7	43.0	1.3	N
R-18-48.2	Residential	B	66	1	43.9	45.1	1.2	N
R-18-49.1	Residential	B	66	1	40.2	41.4	1.2	N
R-18-49.2	Residential	B	66	1	42.5	43.6	1.1	N
R-18-50.1	Residential	B	66	1	63.6	65.5	1.9	N
R-18-50.2	**Residential**	**B**	**66**	**1**	**68.7**	**69.8**	**1.1**	**Y**
R-18-51.1	Residential	B	66	1	47.0	48.2	1.2	N
R-18-51.2	Residential	B	66	1	51.6	52.8	1.2	N
R-18-52.1	Residential	B	66	1	50.6	52.2	1.6	N
R-18-52.2	Residential	B	66	1	54.2	55.6	1.4	N
R-18-53.1	Residential	B	66	1	40.4	41.3	0.9	N
R-18-53.2	Residential	B	66	1	43.2	44.3	1.1	N
R-18-54.1	Residential	B	66	1	64.1	65.7	1.6	N
R-18-54.2	**Residential**	**B**	**66**	**1**	**69.3**	**70.4**	**1.1**	**Y**
R-18-55.1	Residential	B	66	1	47.4	48.6	1.2	N
R-18-55.2	Residential	B	66	1	52.2	53.5	1.3	N
R-18-56.1	Residential	B	66	1	49.9	51.4	1.5	N
R-18-56.2	Residential	B	66	1	53.4	54.8	1.4	N
R-18-57.1	Residential	B	66	1	40.3	41.4	1.1	N
R-18-57.2	Residential	B	66	1	43.5	44.6	1.1	N
R-18-58.1	**Residential**	**B**	**66**	**1**	**64.8**	**66.4**	**1.6**	**Y**
R-18-58.2	**Residential**	**B**	**66**	**1**	**70.2**	**71.3**	**1.1**	**Y**
R-18-59.1	Residential	B	66	1	48.5	49.8	1.3	N
R-18-59.2	Residential	B	66	1	54.1	55.3	1.2	N
R-18-60.1	Residential	B	66	1	48.8	50.4	1.6	N
R-18-60.2	Residential	B	66	1	52.6	54.0	1.4	N
R-18-61.1	Residential	B	66	1	41.2	42.4	1.2	N
R-18-61.2	Residential	B	66	1	44.3	45.4	1.1	N
R-18-62.1	Residential	B	66	1	46.2	47.4	1.2	N
R-18-62.2	Residential	B	66	1	47.1	48.3	1.2	N
R-18-63.1	Residential	B	66	1	47.7	48.9	1.2	N
R-18-63.2	Residential	B	66	1	49.6	50.9	1.3	N

Receiver IDs with a decimal point (.) indicate floor. For example, R-18-1.1 indicates first floor and R-18-1.2 indicates second floor. If there is not a decimal point, it is first floor.
Boldface indicates the noise levels approach or exceed the NAC.

Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-18-64.1	Residential	B	66	1	47.7	49.0	1.3	N
R-18-64.2	Residential	B	66	1	49.8	51.1	1.3	N
R-18-65.1	Residential	B	66	1	47.7	48.8	1.1	N
R-18-65.2	Residential	B	66	1	50.0	51.3	1.3	N
R-18-66.1	**Residential**	**B**	**66**	**1**	**65.2**	**66.6**	**1.4**	**Y**
R-18-66.2	**Residential**	**B**	**66**	**1**	**70.8**	**71.9**	**1.1**	**Y**
R-18-67.1	Residential	B	66	1	51.6	52.8	1.2	N
R-18-67.2	Residential	B	66	1	57.4	58.6	1.2	N
R-18-68.1	Residential	B	66	1	49.0	50.2	1.2	N
R-18-68.2	Residential	B	66	1	53.4	54.7	1.3	N
R-18-69.1	Residential	B	66	1	42.0	43.2	1.2	N
R-18-69.2	Residential	B	66	1	45.5	46.7	1.2	N
R-18-70.1	Residential	B	66	1	60.1	61.3	1.2	N
R-18-70.2	**Residential**	**B**	**66**	**1**	**65.2**	**66.3**	**1.1**	**Y**
R-18-71.1	Residential	B	66	1	57.1	58.3	1.2	N
R-18-71.2	Residential	B	66	1	62.4	63.5	1.1	N
R-18-72.1	Residential	B	66	1	56.0	57.3	1.3	N
R-18-72.2	Residential	B	66	1	61.4	62.6	1.2	N
R-18-73.1	Residential	B	66	1	54.8	56.0	1.2	N
R-18-73.2	Residential	B	66	1	59.8	61.0	1.2	N
R-18-74	Medical Facility	C	66	5	53.3	54.4	1.1	N
R-18-75	Medical Facility	C	66	5	63.6	64.8	1.2	N
R-18-76	Medical Facility	C	66	5	46.5	47.7	1.2	N
R-18-77	Medical Facility	C	66	5	53.7	54.8	1.1	N
R-18-78	Medical Facility	C	66	5	58.3	59.4	1.1	N
R-18-79	Residential	B	66	1	56.5	57.8	1.3	N
R-18-80	**Residential**	**B**	**66**	**1**	**66.5**	**67.7**	**1.2**	**Y**
R-18-81	Residential	B	66	1	60.4	61.6	1.2	N
R-18-82	Residential	B	66	1	64.3	65.5	1.2	N
R-18-83	Residential	B	66	1	58.2	59.5	1.3	N
R-18-84	Residential	B	66	1	62.4	63.7	1.3	N
R-18-85	Residential	B	66	1	56.5	57.6	1.1	N
R-18-86	Residential	B	66	1	58.2	59.4	1.2	N
R-18-87	Residential	B	66	1	55.0	56.2	1.2	N
R-18-88	Residential	B	66	1	60.7	61.9	1.2	N
R-18-89	**Residential**	**B**	**66**	**1**	**66.1**	**67.3**	**1.2**	**Y**
R-18-90	Residential	B	66	1	64.7	65.9	1.2	N

Receiver IDs with a decimal point (.) indicate floor. For example, R-18-1.1 indicates first floor and R-18-1.2 indicates second floor. If there is not a decimal point, it is first floor.
Boldface indicates the noise levels approach or exceed the NAC.

Receiver ID	Noise Abatement Criteria (NAC)			Receptor Units	Noise Level, dB(A)		Change	Impact
	Description	Category	Criteria, $L_{eq(h)}$		2019 $L_{eq(h)}$	2046 $L_{eq(h)}$		
R-18-91	Residential	B	66	1	63.9	65.1	1.2	N
R-18-92	Residential	B	66	1	63.0	64.2	1.2	N
R-18-93	Residential	B	66	1	61.2	62.5	1.3	N
R-18-94	Residential	B	66	1	60.2	61.5	1.3	N
R-18-95	Residential	B	66	1	58.6	59.9	1.3	N
R-18-96	Residential	B	66	1	57.7	58.9	1.2	N
R-18-97	**Residential**	**B**	**66**	**1**	**66.1**	**67.4**	**1.3**	**Y**
R-18-98	Residential	B	66	1	63.0	64.2	1.2	N
R-18-99	Residential	B	66	1	60.0	61.2	1.2	N
R-18-100	Residential	B	66	1	58.0	59.2	1.2	N
R-18-101	Residential	B	66	1	56.2	57.5	1.3	N
R-18-102	Residential	B	66	1	55.1	56.4	1.3	N
R-18-103	Residential	B	66	1	53.2	54.5	1.3	N
R-18-104	Residential	B	66	1	51.9	53.1	1.2	N
R-18-105	Residential	B	66	1	51.1	52.4	1.3	N
R-18-106	Residential	B	66	1	50.8	52.1	1.3	N
R-18-107	Residential	B	66	1	52.7	53.9	1.2	N
R-18-108	Residential	B	66	1	51.8	53.0	1.2	N
R-18-109	Residential	B	66	1	50.9	52.0	1.1	N
R-18-110	Residential	B	66	1	50.2	51.3	1.1	N
R-18-111	Residential	B	66	1	54.3	55.5	1.2	N
R-18-112	Residential	B	66	1	52.8	54.0	1.2	N
R-18-113	Residential	B	66	1	51.8	53.0	1.2	N
R-18-114	Residential	B	66	1	50.9	52.1	1.2	N

Receiver IDs with a decimal point (.) indicate floor. For example, R-18-1.1 indicates first floor and R-18-1.2 indicates second floor. If there is not a decimal point, it is first floor.
Boldface indicates the noise levels approach or exceed the NAC.

Appendix E. Noise Barrier Analysis Results

I-64 Added Travel Lanes
Noise Barrier Analysis

NB1 - located west of US-150 between Old Vincennes Road and Wesley Chapel entrance. This noise barrier examines abatement of future noise levels at receiver R-1-1.

Feasibility Criteria

Achieve a 5 dBA reduction at a majority (>50%) of impacted receptors

Reasonableness Criteria

Design goal of 7 dBA noise reduction for a majority (>50%) of benefited first row receptors.
Receptors are considered to be benefited when they receive at a minimum 5 dB(A) reduction in the future noise levels.
Maximum square footage of noise barrier per benefited receptor shall not exceed 1,000 or 1,250 depending on when receptors were in place compared to initial roadway construction.

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-1-1	B	66	1	1	65.2	**66.8**	1.6	60.8	6.0	Yes	Yes	Yes	No
						Noise levels that approach or exceed the NAC.							

Feasibility				
Number of impacted receptors		Number of impacted receptors receiving a 5 dB(A) reduction	% of impacted receptors receiving a 5 dB(A) reduction	Does the noise barrier design achieve a 5 dB(A) reduction at a majority (>50%) of impacted receptors?
1		1	100%	**Yes**
Reasonability				
Design Goal				
First row benefits		First row receptors receiving 7 dB(A) or more reduction	% of benefited first row with a 7 dB(A) reduction	Design Goal: Is there a 7 dB(A) reduction for a majority (>50%) of the benefited first row receptors?
1		0	0%	**No**
Cost-effectiveness				

Noise Barrier Length (feet)	435	Is the maximum allowable square footage per benefited receptor (receiving a minimum reduction of 5 dB(A)) less than or equal to 1,000 per benefited receptor? **No**
Noise Barrier Height (feet)	20	
TNM Area of Proposed Barrier, Sqft.	8,700	
Number of Benefited Receptors/Dwelling Units	1	
Square Footage per Benefited Receptor	8,700	

I-64 Added Travel Lanes
Noise Barrier Analysis

NB2 - located north of I-64 approximately 790 feet west of Andres Way and 1,030 feet east of Woodland Lakes Drive entrance. This noise barrier examines abatement of future noise levels at receivers R-4-1 through R-4-21 and R-4-29.

Feasibility Criteria

Achieve a 5 dBA reduction at a majority (>50%) of impacted receptors

Reasonableness Criteria

Design goal of 7 dBA noise reduction for a majority (>50%) of benefited first row receptors.
Receptors are considered to be benefited when they receive at a minimum 5 dB(A) reduction in the future noise levels.
Maximum square footage of noise barrier per benefited receptor shall not exceed 1,000 or 1,250 depending on when receptors were in place compared to initial roadway construction.

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-4-1	B	66	2	1	54.9	56.3	1.4	54.3	2.0	No	No	No	No
R-4-2	B	66	2	1	55.9	57.4	1.5	55.1	2.3	No	No	No	No
R-4-3	B	66	1	1	56.6	57.5	0.9	54.7	2.8	No	No	No	No
R-4-4	B	66	1	1	57.2	58.0	0.8	54.7	3.3	No	No	No	No
R-4-5	B	66	1	1	58.9	59.8	0.9	53.9	5.9	No	Yes	No	No
R-4-6	B	66	1	1	62.6	63.2	0.6	55.1	8.1	No	Yes	No	Yes
R-4-7	B	66	1	1	64.2	63.8	-0.4	55.9	7.9	No	Yes	No	Yes
R-4-8	B	66	1	0	62.9	64.2	1.3	57.1	7.1	No	Yes	No	No
R-4-9	B	66	1	0	62.7	64.3	1.6	59.3	5.0	No	Yes	No	No
R-4-10	B	66	1	0	65.2	**66.7**	1.5	60.8	5.9	Yes	Yes	Yes	No
R-4-11	B	66	1	1	70.4	**70.5**	0.1	59.3	11.2	Yes	Yes	Yes	Yes
R-4-12	B	66	1	0	66.7	**68.4**	1.7	62.1	6.3	Yes	Yes	Yes	No
R-4-13	B	66	1	0	62.6	64.8	2.2	60.6	4.2	No	No	No	No
R-4-14	B	66	1	0	65.4	**67.0**	1.6	60.6	6.4	Yes	Yes	Yes	No
R-4-15	B	66	1	0	64.1	65.9	1.8	60.2	5.7	No	Yes	No	No
R-4-16	B	66	1	0	60.8	62.9	2.1	58.6	4.3	No	No	No	No
R-4-17	B	66	1	1	68.6	**70.6**	2.0	62.3	8.3	Yes	Yes	Yes	Yes
R-4-18	B	66	1	0	63.3	64.5	1.2	59.9	4.6	No	No	No	No
R-4-19	B	66	1	0	62.6	63.5	0.9	60.0	3.5	No	No	No	No
R-4-20	B	66	1	1	59.9	61.4	1.5	60.7	0.7	No	No	No	No
R-4-21	B	66	1	1	59.2	60.5	1.3	60.1	0.4	No	No	No	No
R-4-29	B	66	1	0	61.4	63.4	2.0	59.0	4.4	No	No	No	No
						Noise levels that approach or exceed the NAC.							

Feasibility

Number of impacted receptors		Number of impacted receptors receiving a 5 dB(A) reduction	% of impacted receptors receiving a 5 dB(A) reduction	Does the noise barrier design achieve a 5 dB(A) reduction at a majority (>50%) of impacted receptors?	**Yes**
5		5	100%		

Reasonability

Design Goal

First row benefits		First row receptors receiving 7 dB(A) or more reduction	% of benefited first row with a 7 dB(A) reduction	Design Goal: Is there a 7 dB(A) reduction for a majority (>50%) of the benefited first row receptors?	**Yes**
5		4	80%		

Cost-effectiveness

Noise Barrier Length (feet)	1,939	Is the maximum allowable square footage per benefited receptor (receiving a minimum reduction of 5 dB(A)) less than or equal to 1,000 per benefited receptor?	**No**
Noise Barrier Height (feet)	20		
TNM Area of Proposed Barrier, Sqft.	38,780		
Number of Benefited Receptors/Dwelling Units	11		
Square Footage per Benefited Receptor	3,525		

I-64 Added Travel Lanes
Noise Barrier Analysis

NB3 - located north of I-64 approximately 470 feet west of Westchester Drive and 110 feet west of Quarry Road. This noise barrier examines abatement of future noise levels at receivers R-5-1 through R-5-7.

Feasibility Criteria

Achieve a 5 dBA reduction at a majority (>50%) of impacted receptors

Reasonableness Criteria

Design goal of 7 dBA noise reduction for a majority (>50%) of benefited first row receptors.
Receptors are considered to be benefited when they receive at a minimum 5 dB(A) reduction in the future noise levels.
Maximum square footage of noise barrier per benefited receptor shall not exceed 1,000 or 1,250 depending on when receptors were in place compared to initial roadway construction.

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-5-1	B	66	1	0	66.2	**66.9**	0.7	64.1	2.8	Yes	No	No	No
R-5-2	B	66	1	0	62.3	63.8	1.5	61.7	2.1	No	No	No	No
R-5-3	B	66	1	0	61.1	62.4	1.3	60.3	2.1	No	No	No	No
R-5-4	B	66	1	1	68.7	**69.6**	0.9	64.2	5.4	Yes	Yes	Yes	No
R-5-5	B	66	1	0	57.1	57.8	0.7	56.4	1.4	No	No	No	No
R-5-6	B	66	1	1	61.0	61.6	0.6	60.4	1.2	No	No	No	No
R-5-7	B	66	1	1	61.1	61.8	0.7	61.5	0.3	No	No	No	No
						Noise levels that approach or exceed the NAC.							

Feasibility

Number of impacted receptors		Number of impacted receptors receiving a 5 dB(A) reduction	% of impacted receptors receiving a 5 dB(A) reduction	Does the noise barrier design achieve a 5 dB(A) reduction at a majority (>50%) of impacted receptors?	
2		1	50%		**No**

Reasonability

Design Goal

First row benefits		First row receptors receiving 7 dB(A) or more reduction	% of benefited first row with a 7 dB(A) reduction	Design Goal: Is there a 7 dB(A) reduction for a majority (>50%) of the benefited first row receptors?	
1		0	0%		**No**

Cost-effectiveness

		Is the maximum allowable square footage per benefited receptor (receiving a minimum reduction of 5 dB(A)) less than or equal to 1,000 per benefited receptor?	
Noise Barrier Length (feet)	1,593		**No**
Noise Barrier Height (feet)	18		
TNM Area of Proposed Barrier, Sqft.	28,674		
Number of Benefited Receptors/Dwelling Units	1		
Square Footage per Benefited Receptor	28,674		

I-64 Added Travel Lanes
Noise Barrier Analysis

NB4a - located west of I-64 approximately 705 feet northwest of Captain Frank Road to the Cherry Street overpass bridge. This noise barrier examines abatement of future noise levels at receivers R-7-1 through R-7-61.

Feasibility Criteria

Achieve a 5 dBA reduction at a majority (>50%) of impacted receptors

Reasonableness Criteria

Design goal of 7 dBA noise reduction for a majority (>50%) of benefited first row receptors.
Receptors are considered to be benefited when they receive at a minimum 5 dB(A) reduction in the future noise levels.
Maximum square footage of noise barrier per benefited receptor shall not exceed 1,000 or 1,250 depending on when receptors were in place compared to initial roadway construction.

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-7-1	B	66	1	0	61.6	60.8	-0.8	58.1	2.7	No	No	No	No
R-7-2	B	66	1	1	62.7	60.7	-2.0	57.0	3.7	No	No	No	No
R-7-3	B	66	1	0	62.0	61.1	-0.9	57.6	3.5	No	No	No	No
R-7-4	B	66	1	1	63.1	61.0	-2.1	56.7	4.3	No	No	No	No
R-7-5	B	66	1	0	62.3	61.4	-0.9	57.4	4.0	No	No	No	No
R-7-6	B	66	1	1	63.4	61.4	-2.0	56.4	5.0	No	Yes	No	No
R-7-7	B	66	1	0	62.6	61.8	-0.8	57.2	4.6	No	No	No	No
R-7-8	B	66	1	1	63.8	61.5	-2.3	55.9	5.6	No	Yes	No	No
R-7-9	B	66	1	0	62.4	61.8	-0.6	56.9	4.9	No	No	No	No
R-7-10	B	66	1	1	64.2	61.9	-2.3	55.6	6.3	No	Yes	No	No
R-7-11	B	66	1	0	62.9	62.1	-0.8	57.1	5.0	No	Yes	No	No
R-7-12	B	66	1	0	63.3	62.7	-0.6	57.5	5.2	No	Yes	No	No
R-7-13	B	66	1	1	64.8	62.3	-2.5	55.8	6.5	No	Yes	No	No
R-7-14	B	66	1	1	65.2	62.7	-2.5	55.9	6.8	No	Yes	No	No
R-7-15	B	66	1	0	63.9	63.9	0.0	59.1	4.8	No	No	No	No
R-7-16	B	66	1	0	64.9	65.2	0.3	60.6	4.6	No	No	No	No
R-7-17	B	66	1	1	66.0	64.0	-2.0	58.2	5.8	No	Yes	No	No
R-7-18	B	66	1	0	64.9	65.3	0.4	60.2	5.1	No	Yes	No	No
R-7-19	B	66	1	0	65.1	65.5	0.4	60.1	5.4	No	Yes	No	No
R-7-20	B	66	1	1	66.2	**66.0**	-0.2	60.0	6.0	Yes	Yes	Yes	No
R-7-21	B	66	1	1	65.3	65.8	0.5	60.3	5.5	No	Yes	No	No
R-7-22	B	66	1	1	66.1	**66.4**	0.3	60.8	5.6	Yes	Yes	Yes	No
R-7-23	B	66	1	1	66.4	**66.7**	0.3	61.0	5.7	Yes	Yes	Yes	No
R-7-24	B	66	1	1	67.0	**67.2**	0.2	61.5	5.7	Yes	Yes	Yes	No
R-7-25	B	66	1	1	67.9	**68.0**	0.1	62.3	5.7	Yes	Yes	Yes	No
R-7-26	B	66	1	1	68.0	**67.5**	-0.5	62.5	5.0	Yes	Yes	Yes	No
R-7-27	B	66	1	1	68.1	**68.2**	0.1	62.7	5.5	Yes	Yes	Yes	No
R-7-28	B	66	1	1	67.8	**67.9**	0.1	62.5	5.4	Yes	Yes	Yes	No
R-7-29	B	66	1	1	68.1	**68.0**	-0.1	62.7	5.3	Yes	Yes	Yes	No
R-7-30	B	66	1	1	67.6	**67.8**	0.2	62.6	5.2	Yes	Yes	Yes	No
R-7-31	B	66	1	0	67.5	**67.1**	-0.4	62.8	4.3	Yes	No	No	No
R-7-32	B	66	1	0	66.6	**66.3**	-0.3	62.5	3.8	Yes	No	No	No
R-7-33	B	66	1	0	65.7	65.6	-0.1	62.0	3.6	No	No	No	No
R-7-34	C	66	1	1	70.2	**70.3**	0.1	62.7	7.6	Yes	Yes	Yes	Yes
R-7-35	B	66	1	0	63.5	63.7	0.2	60.7	3.0	No	No	No	No
R-7-36	B	66	1	0	63.4	63.6	0.2	60.5	3.1	No	No	No	No
R-7-37	B	66	1	0	64.3	64.7	0.4	61.1	3.6	No	No	No	No
R-7-38	B	66	1	0	65.2	65.4	0.2	61.2	4.2	No	No	No	No
R-7-39	B	66	1	0	65.5	65.9	0.4	61.5	4.4	No	No	No	No
R-7-40	C	66	1	1	70.6	**70.6**	0.0	59.8	10.8	Yes	Yes	Yes	Yes
R-7-41	B	66	1	0	65.1	65.5	0.4	61.0	4.5	No	No	No	No

I-64 Added Travel Lanes
Noise Barrier Analysis

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-7-42	B	66	1	0	63.5	64.0	0.5	59.3	4.7	No	No	No	No
R-7-43	B	66	1	0	64.4	64.9	0.5	59.3	5.6	No	Yes	No	No
R-7-44	B	66	1	0	63.9	64.4	0.5	58.6	5.8	No	Yes	No	No
R-7-45	C	66	1	1	68.3	**69.0**	0.7	58.8	10.2	Yes	Yes	Yes	Yes
R-7-46	B	66	1	0	62.4	63.0	0.6	56.6	6.4	No	Yes	No	No
R-7-47	B	66	1	0	62.0	62.6	0.6	56.3	6.3	No	Yes	No	No
R-7-48	B	66	1	0	61.7	62.2	0.5	56.1	6.1	No	Yes	No	No
R-7-49	B	66	1	0	60.5	61.1	0.6	55.1	6.0	No	Yes	No	No
R-7-50	B	66	1	0	61.6	62.1	0.5	56.1	6.0	No	Yes	No	No
R-7-51	B	66	1	0	60.3	60.9	0.6	55.2	5.7	No	Yes	No	No
R-7-52	B	66	1	0	60.3	60.8	0.5	55.3	5.5	No	Yes	No	No
R-7-53	C	66	1	1	67.0	**67.7**	0.7	57.7	10.0	Yes	Yes	Yes	Yes
R-7-54	B	66	1	0	60.7	61.3	0.6	55.5	5.8	No	Yes	No	No
R-7-55	B	66	1	0	65.3	65.9	0.6	60.1	5.8	No	Yes	No	No
R-7-56	B	66	1	0	64.8	65.4	0.6	60.3	5.1	No	Yes	No	No
R-7-57	B	66	1	0	62.6	63.2	0.6	58.7	4.5	No	No	No	No
R-7-58	B	66	1	0	63.5	64.2	0.7	60.7	3.5	No	No	No	No
R-7-59	C	66	1	1	65.5	**66.1**	0.6	57.7	8.4	Yes	Yes	Yes	Yes
R-7-60	B	66	1	1	66.7	**67.2**	0.5	59.4	7.8	Yes	Yes	Yes	Yes
R-7-61	B	66	1	1	65.8	**66.2**	0.4	58.8	7.4	Yes	Yes	Yes	Yes
						Noise levels that approach or exceed the NAC.							

Feasibility					
Number of impacted receptors		Number of impacted receptors receiving a 5 dB(A) reduction	% of impacted receptors receiving a 5 dB(A) reduction	Does the noise barrier design achieve a 5 dB(A) reduction at a majority (>50%) of impacted receptors?	**Yes**
19		17	89%		
Reasonability					
Design Goal					
First row benefits		First row receptors receiving 7 dB(A) or more reduction	% of benefited first row with a 7 dB(A) reduction	Design Goal: Is there a 7 dB(A) reduction for a majority (>50%) of the benefited first row receptors?	**No**
24		7	29%		
Cost-effectiveness					

Noise Barrier Length (feet)	5,274	Is the maximum allowable square footage per benefited receptor (receiving a minimum reduction of 5 dB(A)) less than or equal to 1,000 per benefited receptor?	**No**
Noise Barrier Height (feet)	20		
TNM Area of Proposed Barrier, Sqft.	105,480		
Number of Benefited Receptors/Dwelling Units	40		
Square Footage per Benefited Receptor	2,637		

I-64 Added Travel Lanes
Noise Barrier Analysis

NB4b - located west of I-64 from the Cherry Street overpass bridge to approximately 670 feet south of Commerce Street. This noise barrier examines abatement of future noise levels at receivers R-9-1 through R-9-27.

Feasibility Criteria

Achieve a 5 dBA reduction at a majority (>50%) of impacted receptors

Reasonableness Criteria

Design goal of 7 dBA noise reduction for a majority (>50%) of benefited first row receptors.
Receptors are considered to be benefited when they receive at a minimum 5 dB(A) reduction in the future noise levels.
Maximum square footage of noise barrier per benefited receptor shall not exceed 1,000 or 1,250 depending on when receptors were in place compared to initial roadway construction.

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-9-1	B	66	1	0	62.3	63.0	0.7	61.7	1.3	No	No	No	No
R-9-2	B	66	1	0	63.2	63.8	0.6	62.2	1.6	No	No	No	No
R-9-3	B	66	1	0	63.0	63.2	0.2	60.0	3.2	No	No	No	No
R-9-4	B	66	1	0	61.7	61.6	-0.1	58.6	3.0	No	No	No	No
R-9-5	B	66	1	0	65.2	65.6	0.4	60.3	5.3	No	Yes	No	No
R-9-6	B	66	1	0	64.9	65.5	0.6	60.2	5.3	No	Yes	No	No
R-9-7	B	66	1	1	65.2	65.7	0.5	60.2	5.5	No	Yes	No	No
R-9-8	B	66	1	0	64.3	64.8	0.5	59.8	5.0	No	Yes	No	No
R-9-9	B	66	1	0	63.7	64.3	0.6	59.3	5.0	No	Yes	No	No
R-9-10	B	66	1	0	59.1	59.6	0.5	57.8	1.8	No	No	No	No
R-9-11	B	66	1	0	60.0	60.5	0.5	58.1	2.4	No	No	No	No
R-9-12	B	66	1	0	59.3	59.9	0.6	57.6	2.3	No	No	No	No
R-9-13	B	66	1	0	65.4	**66.0**	0.6	60.2	5.8	Yes	Yes	Yes	No
R-9-14	B	66	1	0	60.4	60.9	0.5	58.0	2.9	No	No	No	No
R-9-15	B	66	1	0	62.3	62.9	0.6	59.8	3.1	No	No	No	No
R-9-16	B	66	1	0	66.8	**68.2**	0.7	61.2	7.0	Yes	Yes	Yes	No
R-9-17	B	66	1	1	67.4	**68.2**	0.8	61.2	7.0	Yes	Yes	Yes	Yes
R-9-18	B	66	1	0	63.9	64.6	0.7	59.5	5.1	No	Yes	No	No
R-9-19	B	66	1	0	62.8	63.5	0.7	60.0	3.5	No	No	No	No
R-9-20	B	66	1	1	67.6	**68.6**	0.8	61.6	7.0	Yes	Yes	Yes	Yes
R-9-21	B	66	1	0	64.0	64.7	0.7	59.4	5.3	No	Yes	No	No
R-9-22	B	66	1	0	64.1	65.0	0.9	60.0	5.0	No	Yes	No	No
R-9-23	B	66	1	0	68.9	**69.8**	0.9	62.4	7.4	Yes	Yes	Yes	No
R-9-24	B	66	1	1	69.6	**70.6**	1.0	62.2	8.4	Yes	Yes	Yes	Yes
R-9-25	B	66	1	1	60.5	61.0	0.5	59.0	2.0	No	No	No	No
R-9-26	B	66	1	0	67.6	**68.7**	1.1	62.5	6.2	Yes	Yes	Yes	No
R-9-27	B	66	1	1	67.9	**69.0**	1.1	64.0	5.0	Yes	Yes	Yes	No
						Noise levels that approach or exceed the NAC.							

Feasibility					
Number of impacted receptors		Number of impacted receptors receiving a 5 dB(A) reduction	% of impacted receptors receiving a 5 dB(A) reduction	Does the noise barrier design achieve a 5 dB(A) reduction at a majority (>50%) of impacted receptors?	**Yes**
8		8	100%		
Reasonability					
Design Goal					
First row benefits		First row receptors receiving 7 dB(A) or more reduction	% of benefited first row with a 7 dB(A) reduction	Design Goal: Is there a 7 dB(A) reduction for a majority (>50%) of the benefited first row receptors?	**Yes**
5		3	60%		
Cost-effectiveness					
Noise Barrier Length (feet)	1,650	Is the maximum allowable square footage per benefited receptor (receiving a minimum reduction of 5 dB(A)) less than or equal to 1,250 per benefited receptor?			**No**
Noise Barrier Height (feet)	8-14				
TNM Area of Proposed Barrier, Sqft.	20,600				
Number of Benefited Receptors/Dwelling Units	16				
Square Footage per Benefited Receptor	1,288				

I-64 Added Travel Lanes
Noise Barrier Analysis

NB5 - located east of I-64 approximately 75 feet north of Cottom Street and 600 feet south of Cherry Street. This noise barrier examines abatement of future noise levels at receivers R-8-23 through R-8-157 and R-10-1 through R-10-11, R-10-13, and R-10-17 (R-8-29, R-8-31 and R-8-35 are not behind this barrier).

Feasibility Criteria

Achieve a 5 dBA reduction at a majority (>50%) of impacted receptors

Reasonableness Criteria

Design goal of 7 dBA noise reduction for a majority (>50%) of benefited first row receptors.
Receptors are considered to be benefited when they receive at a minimum 5 dB(A) reduction in the future noise levels.
Maximum square footage of noise barrier per benefited receptor shall not exceed 1,000 or 1,250 depending on when receptors were in place compared to initial roadway construction.

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-8-23	B	66	1	1	64.2	64.3	0.1	63.0	1.3	No	No	No	No
R-8-24	B	66	1	0	63.9	64.3	0.4	62.5	1.8	No	No	No	No
R-8-25	B	66	1	1	64.2	64.6	0.4	61.1	3.5	No	No	No	No
R-8-26	B	66	1	0	63.6	64.1	0.5	61.9	2.2	No	No	No	No
R-8-27	B	66	1	0	63.2	64.0	0.8	61.3	2.7	No	No	No	No
R-8-28	B	66	1	0	64.5	65.0	0.5	60.0	5.0	No	Yes	No	No
R-8-30	B	66	1	0	62.9	63.6	0.7	60.3	3.3	No	No	No	No
R-8-32	B	66	1	0	64.2	64.8	0.6	59.4	5.4	No	Yes	No	No
R-8-33	B	66	1	0	62.6	63.6	1.0	59.8	3.8	No	No	No	No
R-8-34	B	66	1	1	65.4	**66.2**	0.8	58.2	8.0	Yes	Yes	Yes	Yes
R-8-36	B	66	1	0	63.7	64.8	1.1	58.8	6.0	No	Yes	No	No
R-8-37	B	66	1	0	65.0	65.4	0.4	57.9	7.5	No	Yes	No	No
R-8-38	B	66	1	0	61.5	63.0	1.5	58.6	4.4	No	No	No	No
R-8-39	B	66	1	0	63.2	64.7	1.5	58.3	6.4	No	Yes	No	No
R-8-40	B	66	1	0	61.4	62.8	1.4	58.5	4.3	No	No	No	No
R-8-41	B	66	1	0	64.4	65.4	1.0	57.5	7.9	No	Yes	No	No
R-8-42	B	66	1	0	62.6	64.3	1.7	57.8	6.5	No	Yes	No	No
R-8-43	B	66	1	0	64.1	65.3	1.2	57.2	8.1	No	Yes	No	No
R-8-44	B	66	1	0	60.8	62.2	1.4	57.9	4.3	No	No	No	No
R-8-45	B	66	1	1	65.6	**66.0**	0.4	57.2	8.8	Yes	Yes	Yes	Yes
R-8-46	B	66	1	0	63.2	64.7	1.5	56.7	8.0	No	Yes	No	No
R-8-47	B	66	1	0	61.8	63.2	1.4	57.0	6.2	No	Yes	No	No
R-8-48	B	66	1	1	66.0	**67.3**	1.3	57.0	10.3	Yes	Yes	Yes	Yes
R-8-49	B	66	1	0	60.5	61.5	1.0	56.2	5.3	No	Yes	No	No
R-8-50	B	66	1	0	62.3	63.6	1.3	54.4	9.2	No	Yes	No	No
R-8-51	B	66	1	0	64.1	65.6	1.5	55.8	9.8	No	Yes	No	No
R-8-52	B	66	1	0	63.2	64.1	0.9	55.3	8.8	No	Yes	No	No
R-8-53	B	66	1	0	64.5	65.4	0.9	55.4	10.0	No	Yes	No	No
R-8-54	B	66	1	0	62.5	63.5	1.0	55.1	8.4	No	Yes	No	No
R-8-55	B	66	1	0	59.9	61.0	1.1	52.3	8.7	No	Yes	No	No
R-8-56	B	66	1	1	68.1	**68.6**	0.5	56.9	11.7	Yes	Yes	Yes	Yes
R-8-57	B	66	1	0	63.3	64.1	0.8	55.0	9.1	No	Yes	No	No
R-8-58	B	66	1	0	61.7	62.8	1.1	54.7	8.1	No	Yes	No	No
R-8-59	B	66	1	0	62.5	63.8	1.3	55.1	8.7	No	Yes	No	No
R-8-60	B	66	1	0	61.0	62.4	1.4	54.4	8.0	No	Yes	No	No
R-8-61	B	66	1	0	61.6	63.0	1.4	54.7	8.3	No	Yes	No	No
R-8-62	B	66	1	0	60.4	61.9	1.5	54.3	7.6	No	Yes	No	No
R-8-63	B	66	1	0	60.5	61.8	1.3	54.0	7.8	No	Yes	No	No
R-8-64	B	66	1	0	63.8	64.9	1.1	54.1	10.8	No	Yes	No	No
R-8-65	B	66	1	0	59.8	61.2	1.4	53.8	7.4	No	Yes	No	No
R-8-66	C	66	1	1	69.8	**70.5**	0.7	57.8	12.7	Yes	Yes	Yes	Yes

I-64 Added Travel Lanes
Noise Barrier Analysis

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-8-67	C	66	1	1	73.1	**73.8**	0.7	59.7	14.1	Yes	Yes	Yes	Yes
R-8-68	B	66	1	0	59.2	60.7	1.5	53.7	7.0	No	Yes	No	No
R-8-69	B	66	1	0	61.5	63.0	1.5	54.2	8.8	No	Yes	No	No
R-8-70	B	66	1	1	71.4	**72.2**	0.8	58.2	14.0	Yes	Yes	Yes	Yes
R-8-71	B	66	1	0	60.5	61.9	1.4	53.9	8.0	No	Yes	No	No
R-8-72	B	66	1	1	69.4	**70.2**	0.8	56.9	13.3	Yes	Yes	Yes	Yes
R-8-73	B	66	1	0	67.8	**68.4**	0.6	56.0	12.4	Yes	Yes	Yes	No
R-8-74	B	66	1	1	69.5	**70.3**	0.8	57.0	13.3	Yes	Yes	Yes	Yes
R-8-75	B	66	1	0	64.3	65.0	0.7	54.2	10.8	No	Yes	No	No
R-8-76	B	66	1	0	65.1	65.7	0.6	54.1	11.6	No	Yes	No	No
R-8-77	B	66	1	0	61.6	62.3	0.7	53.5	8.8	No	Yes	No	No
R-8-78	B	66	1	0	60.9	61.7	0.8	54.4	7.3	No	Yes	No	No
R-8-79	B	66	1	0	61.3	62.0	0.7	54.7	7.3	No	Yes	No	No
R-8-80	B	66	1	0	61.8	62.5	0.7	55.2	7.3	No	Yes	No	No
R-8-81	B	66	1	0	60.6	61.2	0.6	54.5	6.7	No	Yes	No	No
R-8-82	B	66	1	0	62.0	62.7	0.7	55.5	7.2	No	Yes	No	No
R-8-83	B	66	1	0	57.9	58.6	0.7	52.1	6.5	No	Yes	No	No
R-8-84	B	66	1	0	58.9	59.8	0.9	52.5	7.3	No	Yes	No	No
R-8-85	B	66	2	1	70.9	**71.8**	0.9	58.8	13.0	Yes	Yes	Yes	Yes
R-8-86	B	66	1	0	59.4	60.1	0.7	53.8	6.3	No	Yes	No	No
R-8-87	B	66	1	0	59.2	60.0	0.8	54.0	6.0	No	Yes	No	No
R-8-88	B	66	1	0	66.9	**67.8**	0.9	57.3	10.5	Yes	Yes	Yes	No
R-8-89	B	66	2	1	74.8	**75.9**	1.1	60.7	15.2	Yes	Yes	Yes	Yes
R-8-90	B	66	1	0	58.2	58.9	0.7	53.0	5.9	No	Yes	No	No
R-8-91	B	66	1	0	60.7	61.5	0.8	54.6	6.9	No	Yes	No	No
R-8-92	B	66	1	1	72.0	**72.9**	0.9	59.0	13.9	Yes	Yes	Yes	Yes
R-8-93	B	66	1	0	57.3	57.9	0.6	51.7	6.2	No	Yes	No	No
R-8-94	B	66	1	0	59.0	59.6	0.6	52.8	6.8	No	Yes	No	No
R-8-95	B	66	2	1	61.7	62.4	0.7	53.3	9.1	No	Yes	No	Yes
R-8-96	B	66	2	1	64.2	65.1	0.9	53.1	12.0	No	Yes	No	Yes
R-8-97	B	66	2	0	65.6	**66.2**	0.6	55.8	10.4	Yes	Yes	Yes	No
R-8-98	B	66	2	0	57.7	58.5	0.8	52.1	6.4	No	Yes	No	No
R-8-99	B	66	2	0	67.0	**67.7**	0.7	55.1	12.6	Yes	Yes	Yes	No
R-8-100	B	66	2	0	59.1	60.0	0.9	52.0	8.0	No	Yes	No	No
R-8-101	B	66	2	1	62.1	62.8	0.7	52.6	10.2	No	Yes	No	Yes
R-8-102	B	66	2	1	56.3	57.1	0.8	50.1	7.0	No	Yes	No	Yes
R-8-103	B	66	2	1	56.2	57.1	0.9	49.7	7.4	No	Yes	No	Yes
R-8-104	B	66	2	1	58.3	59.6	1.3	50.0	9.6	No	Yes	No	Yes
R-8-105	B	66	2	0	55.8	56.7	0.9	49.1	7.6	No	Yes	No	No
R-8-106	B	66	2	0	62.4	63.1	0.7	52.1	11.0	No	Yes	No	No
R-8-107	B	66	2	0	60.1	60.8	0.7	50.3	10.5	No	Yes	No	No
R-8-108	B	66	2	0	61.4	62.4	1.0	53.5	8.9	No	Yes	No	No
R-8-109	B	66	2	0	56.4	57.1	0.7	48.7	8.4	No	Yes	No	No
R-8-110	B	66	2	0	62.8	63.6	0.8	54.8	8.8	No	Yes	No	No
R-8-111	B	66	2	0	55.6	56.3	0.7	49.7	6.6	No	Yes	No	No
R-8-112	B	66	2	0	63.0	63.7	0.7	55.3	8.4	No	Yes	No	No
R-8-113	B	66	2	0	61.8	62.6	0.8	54.6	8.0	No	Yes	No	No
R-8-114	B	66	1	0	60.0	60.7	0.7	53.7	7.0	No	Yes	No	No
R-8-115	B	66	1	0	62.0	62.7	0.7	54.2	8.5	No	Yes	No	No
R-8-116	B	66	1	0	63.0	63.8	0.8	55.0	8.8	No	Yes	No	No
R-8-117	B	66	1	0	63.8	64.6	0.8	55.9	8.7	No	Yes	No	No
R-8-118	B	66	1	1	68.6	**69.5**	0.9	58.8	10.7	Yes	Yes	Yes	Yes
R-8-119	B	66	1	1	68.4	**69.3**	0.9	58.8	10.5	Yes	Yes	Yes	Yes

I-64 Added Travel Lanes
Noise Barrier Analysis

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-8-120	B	66	1	0	65.2	**66.0**	0.8	54.6	11.4	Yes	Yes	Yes	No
R-8-121	B	66	1	0	60.2	60.9	0.7	53.9	7.0	No	Yes	No	No
R-8-122	B	66	2	0	59.6	60.3	0.7	52.2	8.1	No	Yes	No	No
R-8-123	B	66	2	0	58.2	59.0	0.8	50.0	9.0	No	Yes	No	No
R-8-124	B	66	1	0	66.8	**67.7**	0.9	58.1	9.6	Yes	Yes	Yes	No
R-8-125	B	66	2	0	54.5	55.3	0.8	48.6	6.7	No	Yes	No	No
R-8-126	B	66	1	0	57.2	57.9	0.7	51.3	6.6	No	Yes	No	No
R-8-127	B	66	2	0	58.7	59.5	0.8	50.7	8.8	No	Yes	No	No
R-8-128	B	66	1	0	67.6	**68.3**	0.7	59.3	9.0	Yes	Yes	Yes	No
R-8-129	B	66	3	0	62.7	63.5	0.8	53.1	10.4	No	Yes	No	No
R-8-130	B	66	2	1	67.3	**68.1**	0.8	59.9	8.2	Yes	Yes	Yes	Yes
R-8-131	B	66	2	0	56.8	57.6	0.8	51.8	5.8	No	Yes	No	No
R-8-132	B	66	2	0	61.2	61.9	0.7	54.8	7.1	No	Yes	No	No
R-8-133	B	66	1	0	66.1	**67.0**	0.9	59.3	7.7	Yes	Yes	Yes	No
R-8-134	B	66	2	0	66.6	**67.4**	0.8	60.2	7.2	Yes	Yes	Yes	No
R-8-135	B	66	1	0	65.6	**66.5**	0.9	59.5	7.0	Yes	Yes	Yes	No
R-8-136	B	66	2	0	63.1	63.9	0.8	58.1	5.8	No	Yes	No	No
R-8-137	B	66	1	0	65.3	**66.1**	0.8	60.0	6.1	Yes	Yes	Yes	No
R-8-138	B	66	1	0	65.7	**66.5**	0.8	59.9	6.6	Yes	Yes	Yes	No
R-8-139	B	66	1	0	64.9	65.7	0.8	59.8	5.9	No	Yes	No	No
R-8-140	B	66	1	0	64.5	65.4	0.9	60.3	5.1	No	Yes	No	No
R-8-141	B	66	1	1	66.3	**67.1**	0.8	64.4	2.7	Yes	No	No	No
R-8-142	B	66	1	0	63.8	64.6	0.8	59.1	5.5	No	Yes	No	No
R-8-143	B	66	1	0	65.7	**66.5**	0.8	63.2	3.3	Yes	No	No	No
R-8-144	B	66	1	0	64.0	64.8	0.8	60.3	4.5	No	No	No	No
R-8-145	B	66	1	0	63.2	64.0	0.8	59.6	4.4	No	No	No	No
R-8-146	B	66	1	0	61.9	62.7	0.8	57.7	5.0	No	Yes	No	No
R-8-147	B	66	1	0	65.7	**66.4**	0.7	62.5	3.9	Yes	No	No	No
R-8-148	B	66	1	0	62.5	63.3	0.8	59.0	4.3	No	No	No	No
R-8-149	B	66	1	1	65.5	**66.3**	0.8	60.9	5.4	Yes	Yes	Yes	No
R-8-150	B	66	1	0	64.5	65.2	0.7	61.1	4.1	No	No	No	No
R-8-151	B	66	1	0	61.9	62.6	0.7	58.4	4.2	No	No	No	No
R-8-152	D	51	3	0	38.6	39.4	0.8	60.9	3.5	No	No	No	No
R-8-153	B	66	1	0	61.0	61.8	0.8	57.7	4.1	No	No	No	No
R-8-154	B	66	1	0	63.9	64.7	0.8	61.1	3.6	No	No	No	No
R-8-155	B	66	1	0	62.0	62.7	0.7	60.2	2.5	No	No	No	No
R-8-156	B	66	1	0	63.8	64.7	0.9	61.8	2.9	No	No	No	No
R-8-157	B	66	2	0	64.6	65.4	0.8	63.1	2.3	No	No	No	No
R-10-1	C	66	1	1	64.7	65.5	0.8	63.9	1.6	No	No	No	No
R-10-2	C	66	1	1	64.6	65.4	0.8	64.6	0.8	No	No	No	No
R-10-3	C	66	1	0	64.2	65.0	0.8	63.9	1.1	No	No	No	No
R-10-4	C	66	1	0	63.6	64.4	0.8	63.1	1.3	No	No	No	No
R-10-5	C	66	1	0	63.6	64.5	0.9	63.3	1.2	No	No	No	No
R-10-6	C	66	1	0	63.9	64.7	0.8	63.7	1.0	No	No	No	No
R-10-7	C	66	1	0	63.0	63.8	0.8	62.6	1.2	No	No	No	No
R-10-8	C	66	1	0	63.5	64.3	0.8	63.3	1.0	No	No	No	No
R-10-9	C	66	1	1	64.2	65.0	0.8	64.5	0.5	No	No	No	No
R-10-10	C	66	1	0	62.8	63.6	0.8	62.4	1.2	No	No	No	No
R-10-11	C	66	1	0	61.8	62.6	0.8	61.7	0.9	No	No	No	No

I-64 Added Travel Lanes
Noise Barrier Analysis

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-10-13	C	66	1	0	62.3	63.1	0.8	62.5	0.6	No	No	No	No
R-10-17	C	66	1	0	61.7	62.5	0.8	62.1	0.4	No	No	No	No
						Noise levels that approach or exceed the NAC.							

Feasibility					
Number of impacted receptors		Number of impacted receptors receiving a 5 dB(A) reduction	% of impacted receptors receiving a 5 dB(A) reduction	Does the noise barrier design achieve a 5 dB(A) reduction at a majority (>50%) of impacted receptors?	**Yes**
37		34	92%		
Reasonability					
Design Goal					
First row benefits		First row receptors receiving 7 dB(A) or more reduction	% of benefited first row with a 7 dB(A) reduction	Design Goal: Is there a 7 dB(A) reduction for a majority (>50%) of the benefited first row receptors?	**Yes**
31		30	97%		
Cost-effectiveness					
Noise Barrier Length (feet)		3,926		Is the maximum allowable square footage per benefited receptor (receiving a minimum reduction of 5 dB(A)) less than or equal to 1,250 per benefited receptor?	**Yes**
Noise Barrier Height (feet)		10 - 22			
TNM Area of Proposed Barrier, Sqft.		73,668			
Number of Benefited Receptors/Dwelling Units		140			
Square Footage per Benefited Receptor		526			

I-64 Added Travel Lanes
Noise Barrier Analysis

NB6 - located east of I-265 from Maevi Drive to 205 feet south of the Green Valley Road overpass. This noise barrier examines abatement of future noise levels at receivers R-16-7 through R-16-65 and R-18-1.1 through R-18-114.

Feasibility Criteria

Achieve a 5 dBA reduction at a majority (>50%) of impacted receptors

Reasonableness Criteria

Design goal of 7 dBA noise reduction for a majority (>50%) of benefited first row receptors.
Receptors are considered to be benefited when they receive at a minimum 5 dB(A) reduction in the future noise levels.
Maximum square footage of noise barrier per benefited receptor shall not exceed 1,000 or 1,250 depending on when receptors were in place compared to initial roadway construction.

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-16-7	B	66	1	1	60.3	61.1	0.8	59.7	1.4	No	No	No	No
R-16-8	B	66	1	0	56.1	57.4	1.3	55.0	2.4	No	No	No	No
R-16-9	B	66	1	1	61.6	62.5	0.9	60.4	2.1	No	No	No	No
R-16-10	B	66	1	0	58.6	59.7	1.1	57.6	2.1	No	No	No	No
R-16-11	B	66	1	1	62.3	63.1	0.8	59.9	3.2	No	No	No	No
R-16-12	B	66	1	1	63.2	64.1	0.9	59.1	5.0	No	Yes	No	No
R-16-13	B	66	1	0	56.9	58.2	1.3	55.0	3.2	No	No	No	No
R-16-14	B	66	1	0	57.2	58.5	1.3	55.4	3.1	No	No	No	No
R-16-15	B	66	1	0	58.8	59.9	1.1	57.1	2.8	No	No	No	No
R-16-16	B	66	1	1	64.8	65.6	0.8	58.9	6.7	No	Yes	No	No
R-16-17	B	66	1	0	60.2	61.2	1.0	57.9	3.3	No	No	No	No
R-16-18	B	66	1	0	59.2	60.5	1.3	56.5	4.0	No	No	No	No
R-16-19	B	66	1	1	67.3	**68.0**	0.7	59.6	8.4	Yes	Yes	Yes	Yes
R-16-20	B	66	1	0	61.3	62.5	1.2	58.7	3.8	No	No	No	No
R-16-21 (HP7)	B	66	1	1	71.5	**72.8**	1.3	63.2	9.6	Yes	Yes	Yes	Yes
R-16-22	B	66	1	0	61.1	62.3	1.2	58.4	3.9	No	No	No	No
R-16-23	B	66	1	0	63.6	65.0	1.4	60.6	4.4	No	No	No	No
R-16-24	B	66	1	0	59.3	60.8	1.5	56.9	3.9	No	No	No	No
R-16-25	B	66	1	0	61.4	62.8	1.4	58.6	4.2	No	No	No	No
R-16-26	B	66	1	1	66.7	**68.3**	1.6	63.2	5.1	Yes	Yes	Yes	No
R-16-27	B	66	1	1	62.2	63.6	1.4	59.3	4.3	No	No	No	No
R-16-28	B	66	1	0	58.5	60.2	1.7	55.0	5.2	No	Yes	No	No
R-16-29	B	66	1	1	61.7	63.1	1.4	57.4	5.7	No	Yes	No	No
R-16-30	B	66	1	0	61.1	62.6	1.5	56.5	6.1	No	Yes	No	No
R-16-31	B	66	1	0	60.6	62.3	1.7	55.8	6.5	No	Yes	No	No
R-16-32	B	66	1	0	60.4	61.9	1.5	54.9	7.0	No	Yes	No	No
R-16-33	B	66	1	0	60.0	61.5	1.5	54.4	7.1	No	Yes	No	No
R-16-34	B	66	1	0	58.9	60.4	1.5	53.8	6.6	No	Yes	No	No
R-16-35	B	66	1	1	64.3	**66.8**	2.5	55.9	10.9	Yes	Yes	Yes	Yes
R-16-36	B	66	1	0	57.7	59.3	1.6	52.9	6.4	No	Yes	No	No
R-16-37	B	66	1	0	62.8	64.8	2.0	54.9	9.9	No	Yes	No	No
R-16-38	B	66	1	0	56.6	57.9	1.3	51.9	6.0	No	Yes	No	No
R-16-39	B	66	1	0	59.5	61.2	1.7	53.8	7.4	No	Yes	No	No
R-16-40	B	66	1	1	65.0	**67.2**	2.2	57.6	9.6	Yes	Yes	Yes	Yes
R-16-41	B	66	1	0	58.1	59.8	1.7	52.7	7.1	No	Yes	No	No
R-16-42	B	66	1	0	57.0	58.9	1.9	51.9	7.0	No	Yes	No	No
R-16-43	B	66	1	0	61.2	63.3	2.1	54.2	9.1	No	Yes	No	No
R-16-44	B	66	1	1	65.1	**66.8**	1.7	57.3	9.5	Yes	Yes	Yes	Yes
R-16-45	B	66	1	0	56.1	58.2	2.1	51.1	7.1	No	Yes	No	No
R-16-46	B	66	1	0	61.3	63.5	2.2	54.3	9.2	No	Yes	No	No
R-16-47	B	66	1	1	64.8	**66.8**	2.0	57.3	9.5	Yes	Yes	Yes	Yes

I-64 Added Travel Lanes
Noise Barrier Analysis

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-16-48	B	66	1	0	61.1	63.5	2.4	54.3	9.2	No	Yes	No	No
R-16-49	B	66	1	1	64.9	**66.8**	1.9	57.3	9.5	Yes	Yes	Yes	Yes
R-16-50	B	66	1	1	64.9	**66.3**	1.4	57.1	9.2	Yes	Yes	Yes	Yes
R-16-51	B	66	1	0	60.8	63.1	2.3	54.3	8.8	No	Yes	No	No
R-16-52	B	66	1	0	59.1	60.9	1.8	52.3	8.6	No	Yes	No	No
R-16-53	B	66	1	0	57.6	59.4	1.8	51.6	7.8	No	Yes	No	No
R-16-54	B	66	1	1	64.7	**66.9**	2.2	57.0	9.9	Yes	Yes	Yes	Yes
R-16-55	B	66	1	1	64.1	**66.5**	2.4	56.4	10.1	Yes	Yes	Yes	Yes
R-16-56	B	66	1	0	60.2	62.0	1.8	53.5	8.5	No	Yes	No	No
R-16-57	B	66	1	0	61.9	64.0	2.1	54.5	9.5	No	Yes	No	No
R-16-58	B	66	1	0	58.2	59.7	1.5	51.9	7.8	No	Yes	No	No
R-16-59	B	66	1	0	58.8	60.6	1.8	52.4	8.2	No	Yes	No	No
R-16-60	B	66	1	0	61.8	64.1	2.3	54.6	9.5	No	Yes	No	No
R-16-61	B	66	1	0	65.7	**67.1**	1.4	56.3	10.8	Yes	Yes	Yes	No
R-16-62 (HP8)	B	66	1	1	65.4	**67.9**	2.5	56.9	11.0	Yes	Yes	Yes	Yes
R-16-63	B	66	1	0	58.3	59.9	1.6	52.3	7.6	No	Yes	No	No
R-16-64	B	66	1	0	61.3	63.0	1.7	54.1	8.9	No	Yes	No	No
R-16-65	B	66	1	0	59.7	61.3	1.6	53.3	8.0	No	Yes	No	No
R-18-1.1	B	66	1	0	54.9	57.8	2.9	49.5	8.3	No	Yes	No	No
R-18-1.2	B	66	1	0	59.4	60.7	1.3	51.3	9.4	No	Yes	No	No
R-18-2.1	B	66	1	0	46.9	48.1	1.2	43.5	4.6	No	No	No	No
R-18-2.2	B	66	1	0	51.0	52.1	1.1	45.6	6.5	No	Yes	No	No
R-18-3.1	B	66	1	0	55.7	58.0	2.3	50.0	8.0	No	Yes	No	No
R-18-3.2	B	66	1	0	60.1	61.4	1.3	51.8	9.6	No	Yes	No	No
R-18-4.1	B	66	1	0	56.3	58.5	2.2	50.5	8.0	No	Yes	No	No
R-18-4.2	B	66	1	0	60.7	62.0	1.3	52.2	9.8	No	Yes	No	No
R-18-5.1	B	66	1	0	47.7	48.9	1.2	44.3	4.6	No	No	No	No
R-18-5.2	B	66	1	0	51.8	52.8	1.0	46.1	6.7	No	Yes	No	No
R-18-6	B	66	1	1	63.4	65.1	1.7	55.6	9.5	No	Yes	No	Yes
R-18-7.1	B	66	1	0	48.0	49.1	1.1	44.4	4.7	No	No	No	No
R-18-7.2	B	66	1	0	52.2	53.2	1.0	46.3	6.9	No	Yes	No	No
R-18-8.1	B	66	1	0	57.2	58.9	1.7	51.1	7.8	No	Yes	No	No
R-18-8.2	B	66	1	0	61.7	62.8	1.1	52.6	10.2	No	Yes	No	No
R-18-9.1	B	66	1	0	48.7	49.9	1.2	44.9	5.0	No	Yes	No	No
R-18-9.2	B	66	1	0	52.9	53.8	0.9	46.6	7.2	No	Yes	No	No
R-18-10.1	B	66	1	1	59.3	60.5	1.2	52.3	8.2	No	Yes	No	Yes
R-18-10.2	B	66	1	1	63.8	65.0	1.2	53.8	11.2	No	Yes	No	Yes
R-18-11.1	B	66	1	0	49.9	51.1	1.2	45.7	5.4	No	Yes	No	No
R-18-11.2	B	66	1	0	55.2	56.1	0.9	47.5	8.6	No	Yes	No	No
R-18-12.1	B	66	1	0	51.3	52.7	1.4	46.4	6.3	No	Yes	No	No
R-18-12.2	B	66	1	0	55.0	56.4	1.4	47.8	8.6	No	Yes	No	No
R-18-13.1	B	66	1	1	60.5	61.6	1.1	52.9	8.7	No	Yes	No	Yes
R-18-13.2	B	66	1	1	64.8	**66.1**	1.3	54.3	11.8	Yes	Yes	Yes	Yes
R-18-14.1	B	66	1	0	51.8	53.3	1.5	46.8	6.5	No	Yes	No	No
R-18-14.2	B	66	1	0	55.7	57.2	1.5	48.3	8.9	No	Yes	No	No
R-18-15.1	B	66	1	1	61.2	62.3	1.1	53.2	9.1	No	Yes	No	Yes
R-18-15.2	B	66	1	1	65.8	**66.9**	1.1	54.7	12.2	Yes	Yes	Yes	Yes
R-18-16.1	B	66	1	0	45.6	46.7	1.1	43.1	3.6	No	No	No	No
R-18-16.2	B	66	1	0	49.1	50.0	0.9	44.4	5.6	No	Yes	No	No
R-18-17.1	B	66	1	0	50.6	51.7	1.1	46.5	5.2	No	Yes	No	No
R-18-17.2	B	66	1	0	55.7	56.8	1.1	48.0	8.8	No	Yes	No	No
R-18-18.1	B	66	1	0	46.0	47.1	1.1	43.1	4.0	No	No	No	No
R-18-18.2	B	66	1	0	49.8	50.7	0.9	44.5	6.2	No	Yes	No	No

I-64 Added Travel Lanes
Noise Barrier Analysis

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-18-19.1	B	66	1	0	50.7	51.9	1.2	46.7	5.2	No	Yes	No	No
R-18-19.2	B	66	1	0	55.9	57.0	1.1	48.1	8.9	No	Yes	No	No
R-18-20.1	B	66	1	0	52.7	54.6	1.9	47.5	7.1	No	Yes	No	No
R-18-20.2	B	66	1	0	56.9	58.2	1.3	49.2	9.0	No	Yes	No	No
R-18-21.1	B	66	1	1	62.8	63.7	0.9	54.2	9.5	No	Yes	No	Yes
R-18-21.2	B	66	1	1	67.5	**68.5**	1.0	55.5	13.0	Yes	Yes	Yes	Yes
R-18-22.1	B	66	1	0	53.8	55.6	1.8	48.7	6.9	No	Yes	No	No
R-18-22.2	B	66	1	0	58.0	59.3	1.3	50.9	8.4	No	Yes	No	No
R-18-23.1	B	66	1	0	47.3	48.4	1.1	43.5	4.9	No	No	No	No
R-18-23.2	B	66	1	0	51.5	52.3	0.8	44.8	7.5	No	Yes	No	No
R-18-24.1	B	66	1	0	51.4	52.6	1.2	47.1	5.5	No	Yes	No	No
R-18-24.2	B	66	1	0	56.1	57.2	1.1	48.3	8.9	No	Yes	No	No
R-18-25.1	B	66	1	0	49.3	50.5	1.2	44.5	6.0	No	Yes	No	No
R-18-25.2	B	66	1	0	53.8	54.6	0.8	45.6	9.0	No	Yes	No	No
R-18-26.1	B	66	1	0	51.0	52.6	1.6	48.3	4.3	No	No	No	No
R-18-26.2	B	66	1	0	56.8	58.0	1.2	51.2	6.8	No	Yes	No	No
R-18-27.1	B	66	1	1	64.8	65.8	1.0	55.6	10.2	No	Yes	No	Yes
R-18-27.2	B	66	1	1	70.3	**71.3**	1.0	56.6	14.7	Yes	Yes	Yes	Yes
R-18-28.1	B	66	1	0	50.1	51.4	1.3	46.7	4.7	No	No	No	No
R-18-28.2	B	66	1	0	56.5	57.7	1.2	48.6	9.1	No	Yes	No	No
R-18-29.1	B	66	1	1	65.1	**66.0**	0.9	55.9	10.1	Yes	Yes	Yes	Yes
R-18-29.2	B	66	1	1	70.7	**71.9**	1.2	56.8	15.1	Yes	Yes	Yes	Yes
R-18-30.1	B	66	1	0	46.3	47.9	1.6	45.8	2.1	No	No	No	No
R-18-30.2	B	66	1	0	48.8	50.2	1.4	48.1	2.1	No	No	No	No
R-18-31.1	B	66	1	0	56.2	58.3	2.1	49.9	8.4	No	Yes	No	No
R-18-31.2	B	66	1	0	60.9	61.8	0.9	50.9	10.9	No	Yes	No	No
R-18-32.1	B	66	1	0	42.5	43.6	1.1	42.3	1.3	No	No	No	No
R-18-32.2	B	66	1	0	44.4	45.6	1.2	43.9	1.7	No	No	No	No
R-18-33.1	B	66	1	0	49.8	51.0	1.2	45.3	5.7	No	Yes	No	No
R-18-33.2	B	66	1	0	53.2	54.6	1.4	46.4	8.2	No	Yes	No	No
R-18-34.1	B	66	1	1	65.5	**66.4**	0.9	56.1	10.3	Yes	Yes	Yes	Yes
R-18-34.2	B	66	1	1	71.3	**72.3**	1.0	56.9	15.4	Yes	Yes	Yes	Yes
R-18-35.1	B	66	1	0	50.9	52.1	1.2	47.3	4.8	No	No	No	No
R-18-35.2	B	66	1	0	57.5	58.6	1.1	49.0	9.6	No	Yes	No	No
R-18-36.1	B	66	1	0	56.9	58.7	1.8	50.3	8.4	No	Yes	No	No
R-18-36.2	B	66	1	0	61.9	62.7	0.8	51.3	11.4	No	Yes	No	No
R-18-37.1	B	66	1	0	45.4	46.7	1.3	43.5	3.2	No	No	No	No
R-18-37.2	B	66	1	0	48.3	49.5	1.2	45.2	4.3	No	No	No	No
R-18-38.1	B	66	1	0	41.5	42.6	1.1	40.6	2.0	No	No	No	No
R-18-38.2	B	66	1	0	43.9	45.0	1.1	42.6	2.4	No	No	No	No
R-18-39.1	B	66	1	0	39.9	41.0	1.1	39.8	1.2	No	No	No	No
R-18-39.2	B	66	1	0	42.6	43.7	1.1	42.4	1.3	No	No	No	No
R-18-40.1	B	66	1	1	65.9	**66.7**	0.8	56.8	9.9	Yes	Yes	Yes	Yes
R-18-40.2	B	66	1	1	72.0	**73.0**	1.0	57.5	15.5	Yes	Yes	Yes	Yes
R-18-41.1	B	66	1	0	59.6	60.9	1.3	51.8	9.1	No	Yes	No	No
R-18-41.2	B	66	1	0	65.4	**66.5**	1.1	53.1	13.4	Yes	Yes	Yes	No
R-18-42.1	B	66	1	0	57.1	59.3	2.2	50.4	8.9	No	Yes	No	No
R-18-42.2	B	66	1	0	62.1	62.8	0.7	51.4	11.4	No	Yes	No	No
R-18-43.1	B	66	1	0	46.1	47.3	1.2	43.1	4.2	No	No	No	No
R-18-43.2	B	66	1	0	49.7	50.9	1.2	44.5	6.4	No	Yes	No	No
R-18-44.1	B	66	1	0	41.3	42.5	1.2	41.0	1.5	No	No	No	No
R-18-44.2	B	66	1	0	43.4	44.5	1.1	42.6	1.9	No	No	No	No
R-18-45.1	B	66	1	0	40.0	41.2	1.2	40.4	0.8	No	No	No	No

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Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-18-45.2	B	66	1	0	42.3	43.4	1.1	42.2	1.2	No	No	No	No
R-18-46.1	B	66	1	0	57.3	59.3	2.0	50.5	8.8	No	Yes	No	No
R-18-46.2	B	66	1	0	62.0	63.2	1.2	51.5	11.7	No	Yes	No	No
R-18-47.1	B	66	1	0	47.5	48.7	1.2	43.7	5.0	No	Yes	No	No
R-18-47.2	B	66	1	0	51.0	52.2	1.2	45.1	7.1	No	Yes	No	No
R-18-48.1	B	66	1	0	41.7	43.0	1.3	41.2	1.8	No	No	No	No
R-18-48.2	B	66	1	0	43.9	45.1	1.2	42.7	2.4	No	No	No	No
R-18-49.1	B	66	1	0	40.2	41.4	1.2	39.9	1.5	No	No	No	No
R-18-49.2	B	66	1	0	42.5	43.6	1.1	41.5	2.1	No	No	No	No
R-18-50.1	B	66	1	1	63.6	65.5	1.9	54.7	10.8	No	Yes	No	Yes
R-18-50.2	B	66	1	1	68.7	**69.8**	1.1	55.7	14.1	Yes	Yes	Yes	Yes
R-18-51.1	B	66	1	0	47.0	48.2	1.2	44.3	3.9	No	No	No	No
R-18-51.2	B	66	1	0	51.6	52.8	1.2	47.3	5.5	No	Yes	No	No
R-18-52.1	B	66	1	0	50.6	52.2	1.6	46.0	6.2	No	Yes	No	No
R-18-52.2	B	66	1	0	54.2	55.6	1.4	47.5	8.1	No	Yes	No	No
R-18-53.1	B	66	1	0	40.4	41.3	0.9	40.4	0.9	No	No	No	No
R-18-53.2	B	66	1	0	43.2	44.3	1.1	43.2	1.1	No	No	No	No
R-18-54.1	B	66	1	1	64.1	65.7	1.6	55.1	10.6	No	Yes	No	Yes
R-18-54.2	B	66	1	1	69.3	**70.4**	1.1	56.1	14.3	Yes	Yes	Yes	Yes
R-18-55.1	B	66	1	0	47.4	48.6	1.2	43.8	4.8	No	No	No	No
R-18-55.2	B	66	1	0	52.2	53.5	1.3	47.7	5.8	No	Yes	No	No
R-18-56.1	B	66	1	0	49.9	51.4	1.5	45.8	5.6	No	Yes	No	No
R-18-56.2	B	66	1	0	53.4	54.8	1.4	47.5	7.3	No	Yes	No	No
R-18-57.1	B	66	1	0	40.3	41.4	1.1	39.9	1.5	No	No	No	No
R-18-57.2	B	66	1	0	43.5	44.6	1.1	43.0	1.6	No	No	No	No
R-18-58.1	B	66	1	1	64.8	**66.4**	1.6	55.9	10.5	Yes	Yes	Yes	Yes
R-18-58.2	B	66	1	1	70.2	**71.3**	1.1	56.8	14.5	Yes	Yes	Yes	Yes
R-18-59.1	B	66	1	0	48.5	49.8	1.3	44.8	5.0	No	Yes	No	No
R-18-59.2	B	66	1	0	54.1	55.3	1.2	48.9	6.4	No	Yes	No	No
R-18-60.1	B	66	1	0	48.8	50.4	1.6	46.0	4.4	No	No	No	No
R-18-60.2	B	66	1	0	52.6	54.0	1.4	48.0	6.0	No	Yes	No	No
R-18-61.1	B	66	1	0	41.2	42.4	1.2	40.6	1.8	No	No	No	No
R-18-61.2	B	66	1	0	44.3	45.4	1.1	43.3	2.1	No	No	No	No
R-18-62.1	B	66	1	0	46.2	47.4	1.2	42.9	4.5	No	No	No	No
R-18-62.2	B	66	1	0	47.1	48.3	1.2	42.8	5.5	No	Yes	No	No
R-18-63.1	B	66	1	0	47.7	48.9	1.2	45.3	3.6	No	No	No	No
R-18-63.2	B	66	1	0	49.6	50.9	1.3	47.0	3.9	No	No	No	No
R-18-64.1	B	66	1	0	47.7	49.0	1.3	45.0	4.0	No	No	No	No
R-18-64.2	B	66	1	0	49.8	51.1	1.3	47.1	4.0	No	No	No	No
R-18-65.1	B	66	1	0	47.7	48.8	1.1	44.5	4.3	No	No	No	No
R-18-65.2	B	66	1	0	50.0	51.3	1.3	46.2	5.1	No	Yes	No	No
R-18-66.1	B	66	1	1	65.2	**66.6**	1.4	57.1	9.5	Yes	Yes	Yes	Yes
R-18-66.2	B	66	1	1	70.8	**71.9**	1.1	58.9	13.0	Yes	Yes	Yes	Yes
R-18-67.1	B	66	1	0	51.6	52.8	1.2	46.6	6.2	No	Yes	No	No
R-18-67.2	B	66	1	0	57.4	58.6	1.2	50.4	8.2	No	Yes	No	No
R-18-68.1	B	66	1	0	49.0	50.2	1.2	46.0	4.2	No	No	No	No
R-18-68.2	B	66	1	0	53.4	54.7	1.3	49.0	5.7	No	Yes	No	No
R-18-69.1	B	66	1	0	42.0	43.2	1.2	41.4	1.8	No	No	No	No
R-18-69.2	B	66	1	0	45.5	46.7	1.2	44.2	2.5	No	No	No	No
R-18-70.1	B	66	1	0	60.1	61.3	1.2	52.1	9.2	No	Yes	No	No
R-18-70.2	B	66	1	0	65.2	**66.3**	1.1	54.3	12.0	Yes	Yes	Yes	No
R-18-71.1	B	66	1	0	57.1	58.3	1.2	50.3	8.0	No	Yes	No	No
R-18-71.2	B	66	1	0	62.4	63.5	1.1	52.9	10.6	No	Yes	No	No

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Noise Barrier Analysis

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-18-72.1	B	66	1	0	56.0	57.3	1.3	49.7	7.6	No	Yes	No	No
R-18-72.2	B	66	1	0	61.4	62.6	1.2	52.4	10.2	No	Yes	No	No
R-18-73.1	B	66	1	0	54.8	56.0	1.2	49.1	6.9	No	Yes	No	No
R-18-73.2	B	66	1	0	59.8	61.0	1.2	51.7	9.3	No	Yes	No	No
R-18-74	C	66	5	0	53.3	54.4	1.1	47.4	7.0	No	Yes	No	No
R-18-75	C	66	5	1	63.6	64.8	1.2	54.8	10.0	No	Yes	No	Yes
R-18-76	C	66	5	0	46.5	47.7	1.2	45.6	2.1	No	No	No	No
R-18-77	C	66	5	0	53.7	54.8	1.1	49.3	5.5	No	Yes	No	No
R-18-78	C	66	5	0	58.3	59.4	1.1	50.4	9.0	No	Yes	No	No
R-18-79	B	66	1	0	56.5	57.8	1.3	49.5	8.3	No	Yes	No	No
R-18-80	B	66	1	1	66.5	**67.7**	1.2	55.5	12.2	Yes	Yes	Yes	Yes
R-18-81	B	66	1	0	60.4	61.6	1.2	51.4	10.2	No	Yes	No	No
R-18-82	B	66	1	0	64.3	65.5	1.2	54.1	11.4	No	Yes	No	No
R-18-83	B	66	1	0	58.2	59.5	1.3	50.1	9.4	No	Yes	No	No
R-18-84	B	66	1	0	62.4	63.7	1.3	53.2	10.5	No	Yes	No	No
R-18-85	B	66	1	0	56.5	57.6	1.1	48.9	8.7	No	Yes	No	No
R-18-86	B	66	1	0	58.2	59.4	1.2	49.9	9.5	No	Yes	No	No
R-18-87	B	66	1	0	55.0	56.2	1.2	48.1	8.1	No	Yes	No	No
R-18-88	B	66	1	1	60.7	61.9	1.2	51.5	10.4	No	Yes	No	Yes
R-18-89	B	66	1	1	66.1	**67.3**	1.2	58.5	8.8	Yes	Yes	Yes	Yes
R-18-90	B	66	1	0	64.7	65.9	1.2	58.2	7.7	No	Yes	No	No
R-18-91	B	66	1	0	63.9	65.1	1.2	58.2	6.9	No	Yes	No	No
R-18-92	B	66	1	0	63.0	64.2	1.2	58.1	6.1	No	Yes	No	No
R-18-93	B	66	1	0	61.2	62.5	1.3	57.5	5.0	No	Yes	No	No
R-18-94	B	66	1	0	60.2	61.5	1.3	56.5	5.0	No	Yes	No	No
R-18-95	B	66	1	0	58.6	59.9	1.3	53.7	6.2	No	Yes	No	No
R-18-96	B	66	1	0	57.7	58.9	1.2	54.8	4.1	No	No	No	No
R-18-97	B	66	1	1	66.1	**67.4**	1.3	57.6	9.8	Yes	Yes	Yes	Yes
R-18-98	B	66	1	0	63.0	64.2	1.2	54.9	9.3	No	Yes	No	No
R-18-99	B	66	1	0	60.0	61.2	1.2	52.6	8.6	No	Yes	No	No
R-18-100	B	66	1	0	58.0	59.2	1.2	51.1	8.1	No	Yes	No	No
R-18-101	B	66	1	0	56.2	57.5	1.3	50.0	7.5	No	Yes	No	No
R-18-102	B	66	1	0	55.1	56.4	1.3	50.5	5.9	No	Yes	No	No
R-18-103	B	66	1	0	53.2	54.5	1.3	48.4	6.1	No	Yes	No	No
R-18-104	B	66	1	0	51.9	53.1	1.2	47.7	5.4	No	Yes	No	No
R-18-105	B	66	1	0	51.1	52.4	1.3	47.4	5.0	No	Yes	No	No
R-18-106	B	66	1	0	50.8	52.1	1.3	48.1	4.0	No	No	No	No
R-18-107	B	66	1	0	52.7	53.9	1.2	47.0	6.9	No	Yes	No	No
R-18-108	B	66	1	0	51.8	53.0	1.2	46.8	6.2	No	Yes	No	No
R-18-109	B	66	1	0	50.9	52.0	1.1	46.3	5.7	No	Yes	No	No
R-18-110	B	66	1	0	50.2	51.3	1.1	46.0	5.3	No	Yes	No	No
R-18-111	B	66	1	0	54.3	55.5	1.2	48.4	7.1	No	Yes	No	No
R-18-112	B	66	1	0	52.8	54.0	1.2	47.6	6.4	No	Yes	No	No
R-18-113	B	66	1	0	51.8	53.0	1.2	47.3	5.7	No	Yes	No	No
R-18-114	B	66	1	0	50.9	52.1	1.2	47.1	5.0	No	Yes	No	No
						Noise levels that approach or exceed the NAC.							

Feasibility					
Number of impacted receptors		Number of impacted receptors receiving a 5 dB(A) reduction	% of impacted receptors receiving a 5 dB(A) reduction	Does the noise barrier design achieve a 5 dB(A) reduction at a majority (>50%) of impacted receptors?	**Yes**
34		34	100%		
Reasonability					
Design Goal					
First row benefits		First row receptors receiving 7 dB(A) or more reduction	% of benefited first row with a 7 dB(A) reduction	Design Goal: Is there a 7 dB(A) reduction for a majority (>50%) of the benefited first row receptors?	**Yes**
49		45	92%		
Cost-effectiveness					
Noise Barrier Length (feet)	4,416	Is the maximum allowable square footage per benefited receptor (receiving a minimum reduction of 5 dB(A)) less than or equal to 1,000 per benefited receptor?	**Yes**		
Noise Barrier Height (feet)	8 - 20				
TNM Area of Proposed Barrier, Sqft.	80,102				
Number of Benefited Receptors/Dwelling Units	196				
Square Footage per Benefited Receptor	409				

I-64 Added Travel Lanes
Noise Barrier Analysis

NB7 - located west of I-265 from approximately 235 feet south of Village Pine Drive to 675 north of Barrington Court. This noise barrier examines abatement of future noise levels at receivers R-17-1 through R-17-108.

Feasibility Criteria

Achieve a 5 dBA reduction at a majority (>50%) of impacted receptors

Reasonableness Criteria

Design goal of 7 dBA noise reduction for a majority (>50%) of benefited first row receptors.
Receptors are considered to be benefited when they receive at a minimum 5 dB(A) reduction in the future noise levels.
Maximum square footage of noise barrier per benefited receptor shall not exceed 1,000 or 1,250 depending on when receptors were in place compared to initial roadway construction.

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-17-1	B	66	1	1	64.4	65.3	0.9	57.3	8.0	No	Yes	No	Yes
R-17-2	B	66	1	0	61.9	62.2	0.3	56.0	6.2	No	Yes	No	No
R-17-3	B	66	1	0	60.5	60.9	0.4	55.9	5.0	No	Yes	No	No
R-17-4	B	66	1	1	69.5	**71.2**	1.7	59.4	11.8	Yes	Yes	Yes	Yes
R-17-5	B	66	1	0	64.8	**66.3**	1.5	58.7	7.6	Yes	Yes	Yes	No
R-17-6	B	66	1	1	69.3	**70.9**	1.6	59.6	11.3	Yes	Yes	Yes	Yes
R-17-7	B	66	1	0	65.0	**66.6**	1.6	58.9	7.7	Yes	Yes	Yes	No
R-17-8	B	66	1	0	60.7	62.2	1.5	55.1	7.1	No	Yes	No	No
R-17-9	B	66	1	1	69.4	**71.1**	1.7	59.9	11.2	Yes	Yes	Yes	Yes
R-17-10	B	66	1	0	65.0	**66.5**	1.5	58.8	7.7	Yes	Yes	Yes	No
R-17-11	B	66	1	0	61.1	62.7	1.6	55.3	7.4	No	Yes	No	No
R-17-12	B	66	1	1	69.3	**71.0**	1.7	59.9	11.1	Yes	Yes	Yes	Yes
R-17-13	B	66	1	0	64.7	**66.3**	1.6	58.8	7.5	Yes	Yes	Yes	No
R-17-14	B	66	1	0	60.8	62.4	1.6	55.0	7.4	No	Yes	No	No
R-17-15	B	66	1	1	70.3	**72.0**	1.7	60.7	11.3	Yes	Yes	Yes	Yes
R-17-16	B	66	1	0	65.1	**66.7**	1.6	59.2	7.5	Yes	Yes	Yes	No
R-17-17	B	66	1	1	70.7	**72.4**	1.7	60.8	11.6	Yes	Yes	Yes	Yes
R-17-18	B	66	1	0	61.8	63.5	1.7	56.2	7.3	No	Yes	No	No
R-17-19	B	66	1	0	61.8	63.4	1.6	55.9	7.5	No	Yes	No	No
R-17-20	B	66	1	0	65.1	**66.7**	1.6	58.7	8.0	Yes	Yes	Yes	No
R-17-21	B	66	1	1	70.4	**72.1**	1.7	60.7	11.4	Yes	Yes	Yes	Yes
R-17-22	B	66	1	1	70.9	**72.7**	1.8	60.7	12.0	Yes	Yes	Yes	Yes
R-17-23	B	66	1	0	60.3	61.9	1.6	55.3	6.6	No	Yes	No	No
R-17-24	B	66	1	0	62.7	64.3	1.6	56.2	8.1	No	Yes	No	No
R-17-25	B	66	1	0	61.5	63.1	1.6	55.7	7.4	No	Yes	No	No
R-17-26	B	66	1	0	65.7	**67.4**	1.7	59.3	8.1	Yes	Yes	Yes	No
R-17-27	B	66	1	1	73.3	**75.0**	1.7	61.5	13.5	Yes	Yes	Yes	Yes
R-17-28	B	66	1	0	65.6	**67.2**	1.6	59.2	8.0	Yes	Yes	Yes	No
R-17-29	B	66	1	0	68.4	**70.1**	1.7	60.5	9.6	Yes	Yes	Yes	No
R-17-30	B	66	1	0	63.3	65.0	1.7	55.9	9.1	No	Yes	No	No
R-17-31	B	66	1	0	59.8	61.4	1.6	54.1	7.3	No	Yes	No	No
R-17-32	B	66	1	0	58.1	59.6	1.5	53.2	6.4	No	Yes	No	No
R-17-33	B	66	1	0	59.8	61.4	1.6	53.9	7.5	No	Yes	No	No
R-17-34	B	66	1	0	64.7	**66.4**	1.7	57.6	8.8	Yes	Yes	Yes	No
R-17-35	B	66	1	0	61.8	63.5	1.7	55.5	8.0	No	Yes	No	No
R-17-36	B	66	1	0	58.9	60.5	1.6	53.6	6.9	No	Yes	No	No
R-17-37	B	66	1	1	68.7	**70.3**	1.6	60.1	10.2	Yes	Yes	Yes	Yes
R-17-38	B	66	1	1	69.8	**71.5**	1.7	61.0	10.5	Yes	Yes	Yes	Yes
R-17-39	B	66	1	1	69.7	**71.3**	1.6	60.8	10.5	Yes	Yes	Yes	Yes
R-17-40	B	66	1	0	63.5	65.1	1.6	56.1	9.0	No	Yes	No	No
R-17-41	B	66	1	0	59.4	61.0	1.6	52.6	8.4	No	Yes	No	No

I-64 Added Travel Lanes
Noise Barrier Analysis

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-17-42	B	66	1	1	69.5	**71.1**	1.6	60.6	10.5	Yes	Yes	Yes	Yes
R-17-43	B	66	1	0	63.7	65.3	1.6	56.1	9.2	No	Yes	No	No
R-17-44	B	66	1	1	69.3	**70.9**	1.6	60.5	10.4	Yes	Yes	Yes	Yes
R-17-45	B	66	1	0	58.7	60.3	1.6	52.5	7.8	No	Yes	No	No
R-17-46	B	66	1	0	63.2	64.9	1.7	55.7	9.2	No	Yes	No	No
R-17-47	B	66	1	1	69.3	**71.0**	1.7	60.4	10.6	Yes	Yes	Yes	Yes
R-17-48	B	66	1	0	58.7	60.3	1.6	52.5	7.8	No	Yes	No	No
R-17-49	B	66	1	0	58.9	60.4	1.5	52.5	7.9	No	Yes	No	No
R-17-50	B	66	1	0	62.7	64.3	1.6	55.4	8.9	No	Yes	No	No
R-17-51	B	66	1	0	63.3	64.8	1.5	56.1	8.7	No	Yes	No	No
R-17-52	B	66	1	1	68.4	**70.1**	1.7	59.8	10.3	Yes	Yes	Yes	Yes
R-17-53	B	66	1	1	68.0	**69.5**	1.5	59.3	10.2	Yes	Yes	Yes	Yes
R-17-54	B	66	1	0	63.8	65.2	1.4	56.3	8.9	No	Yes	No	No
R-17-55	B	66	1	0	61.9	63.4	1.5	55.1	8.3	No	Yes	No	No
R-17-56	B	66	1	0	60.5	62.1	1.6	54.0	8.1	No	Yes	No	No
R-17-57	B	66	1	0	58.9	60.5	1.6	52.5	8.0	No	Yes	No	No
R-17-58	B	66	1	1	64.7	**66.7**	2.0	57.3	9.4	Yes	Yes	Yes	Yes
R-17-59	B	66	1	0	63.4	64.9	1.5	55.6	9.3	No	Yes	No	No
R-17-60	B	66	1	0	60.1	61.6	1.5	53.3	8.3	No	Yes	No	No
R-17-61	B	66	1	0	58.4	60.0	1.6	52.0	8.0	No	Yes	No	No
R-17-62	B	66	1	0	61.6	63.0	1.4	54.2	8.8	No	Yes	No	No
R-17-63	B	66	1	0	59.3	60.8	1.5	52.1	8.7	No	Yes	No	No
R-17-64	B	66	1	1	65.4	**66.7**	1.3	56.7	10.0	Yes	Yes	Yes	Yes
R-17-65	B	66	1	0	62.8	64.4	1.6	54.7	9.7	No	Yes	No	No
R-17-66	B	66	1	0	60.7	62.2	1.5	53.1	9.1	No	Yes	No	No
R-17-67	B	66	1	1	69.5	**71.0**	1.5	59.9	11.1	Yes	Yes	Yes	Yes
R-17-68	B	66	1	1	68.9	**70.4**	1.5	59.7	10.7	Yes	Yes	Yes	Yes
R-17-69	B	66	1	0	65.0	**66.6**	1.6	56.2	10.4	Yes	Yes	Yes	No
R-17-70	B	66	1	0	61.4	63.0	1.6	54.1	8.9	No	Yes	No	No
R-17-71	B	66	1	0	59.6	61.1	1.5	52.9	8.2	No	Yes	No	No
R-17-72	B	66	1	0	63.4	65.0	1.6	55.7	9.3	No	Yes	No	No
R-17-73	B	66	1	0	63.2	64.7	1.5	55.3	9.4	No	Yes	No	No
R-17-74	B	66	1	0	61.5	63.1	1.6	54.5	8.6	No	Yes	No	No
R-17-75	B	66	1	0	65.3	**66.9**	1.6	56.7	10.2	Yes	Yes	Yes	No
R-17-76	B	66	1	1	68.8	**70.2**	1.4	59.5	10.7	Yes	Yes	Yes	Yes
R-17-77	B	66	1	0	60.3	61.9	1.6	53.9	8.0	No	Yes	No	No
R-17-78	B	66	1	0	61.4	62.9	1.5	54.0	8.9	No	Yes	No	No
R-17-79	B	66	1	0	58.5	60.0	1.5	52.4	7.6	No	Yes	No	No
R-17-80	B	66	1	0	65.4	**66.8**	1.4	56.5	10.3	Yes	Yes	Yes	No
R-17-81	B	66	1	0	60.2	61.7	1.5	53.4	8.3	No	Yes	No	No
R-17-82	B	66	1	0	63.7	65.1	1.4	55.1	10.0	No	Yes	No	No
R-17-83	B	66	1	0	62.3	63.7	1.4	54.3	9.4	No	Yes	No	No
R-17-84	B	66	1	0	59.2	60.7	1.5	52.8	7.9	No	Yes	No	No
R-17-85	B	66	1	1	67.3	**68.7**	1.4	58.3	10.4	Yes	Yes	Yes	Yes
R-17-86	B	66	1	0	58.2	59.5	1.3	51.3	8.2	No	Yes	No	No
R-17-87	B	66	1	0	53.4	54.7	1.3	48.6	6.1	No	Yes	No	No
R-17-88	B	66	1	0	60.7	62.0	1.3	52.9	9.1	No	Yes	No	No
R-17-89	B	66	1	0	63.6	64.9	1.3	55.1	9.8	No	Yes	No	No
R-17-90	B	66	1	0	56.2	57.5	1.3	50.1	7.4	No	Yes	No	No
R-17-91	B	66	1	0	52.4	53.6	1.2	48.3	5.3	No	Yes	No	No
R-17-92	B	66	1	0	54.6	55.8	1.2	49.2	6.6	No	Yes	No	No
R-17-93	B	66	1	1	65.7	**67.2**	1.5	57.4	9.8	Yes	Yes	Yes	Yes
R-17-94	B	66	1	0	54.5	55.9	1.4	49.1	6.8	No	Yes	No	No

I-64 Added Travel Lanes
Noise Barrier Analysis

Receivers	Activity Category	Criteria, $L_{eq(h)}$	Dwelling Units/Receptors	Row	Existing	Future w/o Barrier	Increase (Future w/o Barrier - Existing)	Future w/ Barrier	Noise Barrier Reduction	Approach or Exceed NAC (Impacted)	Benefited Receptor	Impacted and 5 dB(A) Reduction	Design Goal: First Row and 7 dB(A) Reduction
R-17-95	B	66	1	0	51.2	52.5	1.3	47.0	5.5	No	Yes	No	No
R-17-96	B	66	1	0	58.3	59.6	1.3	51.6	8.0	No	Yes	No	No
R-17-97	B	66	1	0	56.5	57.7	1.2	50.1	7.6	No	Yes	No	No
R-17-98	B	66	1	0	50.4	51.6	1.2	46.6	5.0	No	Yes	No	No
R-17-99	B	66	1	0	53.2	54.4	1.2	48.2	6.2	No	Yes	No	No
R-17-100	B	66	1	0	52.2	53.5	1.3	47.6	5.9	No	Yes	No	No
R-17-101	B	66	1	1	62.6	63.9	1.3	54.9	9.0	No	Yes	No	Yes
R-17-102	B	66	1	0	55.9	57.3	1.4	54.4	2.9	No	No	No	No
R-17-103	B	66	1	0	55.1	56.4	1.3	53.9	2.5	No	No	No	No
R-17-104	B	66	1	0	54.4	55.6	1.2	53.3	2.3	No	No	No	No
R-17-105	B	66	1	0	60.1	61.3	1.2	56.2	5.1	No	Yes	No	No
R-17-106	B	66	1	0	58.4	59.8	1.4	55.7	4.1	No	No	No	No
R-17-107	B	66	1	0	57.2	58.4	1.2	55.2	3.2	No	No	No	No
R-17-108	B	66	1	1	64.3	65.5	1.2	57.5	8.0	No	Yes	No	Yes
						Noise levels that approach or exceed the NAC.							

Feasibility					
Number of impacted receptors		Number of impacted receptors receiving a 5 dB(A) reduction	% of impacted receptors receiving a 5 dB(A) reduction	Does the noise barrier design achieve a 5 dB(A) reduction at a majority (>50%) of impacted receptors?	**Yes**
37		37	100%		
Reasonability					
Design Goal					
First row benefits		First row receptors receiving 7 dB(A) or more reduction	% of benefited first row with a 7 dB(A) reduction	Design Goal: Is there a 7 dB(A) reduction for a majority (>50%) of the benefited first row receptors?	**Yes**
27		27	100%		
Cost-effectiveness					
Noise Barrier Length (feet)	3,841	Is the maximum allowable square footage per benefited receptor (receiving a minimum reduction of 5 dB(A)) less than or equal to 1,000 per benefited receptor?	**Yes**		
Noise Barrier Height (feet)	10 - 18				
TNM Area of Proposed Barrier, Sqft.	61,046				
Number of Benefited Receptors/Dwelling Units	103				
Square Footage per Benefited Receptor	593				

Appendix F. Public Involvement Materials

December 20, 2022

Re: Improve 64 Project - Potential Noise Barrier

Dear Resident/Property Owner:

On behalf of the Indiana Department of Transportation (INDOT), the project team is seeking input from residents and property owners who would benefit from the construction of a noise barrier for the Improve 64 Project. The project is located along I-64 from approximately US 150 to Main Street, and along I-265 from I-64 to Green Valley Road in New Albany, Indiana. The project includes added travel lanes in each direction on I-64 from US 150 to Cherry Street and added travel and auxiliary lanes on I-265 from State Street to I-64.

INDOT evaluates noise abatement measures for feasibility and reasonableness. If proven feasible and reasonable, any residents and/or property owners that have been determined to benefit from the construction of a noise barrier are given the opportunity to provide their input. INDOT then makes the decision whether to construct the noise barrier based on feasibility, reasonableness, and percentage of supportive responses from the benefited residents and/or property owners. Preliminary findings show that a potential noise barrier near your residence or property is both feasible and reasonable. At this time, INDOT needs your input on whether you want the proposed noise barrier constructed in your area.

INDOT is holding a public meeting to discuss potential noise barriers. At the meeting, the project team will present INDOT's noise mitigation process and proposed noise barrier locations. Project team staff will be available to answer questions and solicit input from the public. Your attendance and participation are encouraged.

The meeting will be held: **January 24, 2023 6 pm**
Doors open at 6:00 pm; Presentation at 6:30 pm
Educational Support Center (Enter Door 1)
2801 Grant Line Road, New Albany, IN 47150

Enclosed is a map showing the location of the potential noise barrier and the survey postcard. Please either bring the survey postcard to the meeting or mail the completed survey postcard to the address on the card by **Tuesday February 7, 2023. Your input is needed regarding the possible construction of a noise barrier near your neighborhood. It is very important that you submit the survey postcard.**

We look forward to seeing you at the meeting on Tuesday January 24, 2023. If you have additional questions regarding the meeting or survey, please contact Kia Gillette at HNTB at 317-917-5240 or via email at kgillette@hntb.com.

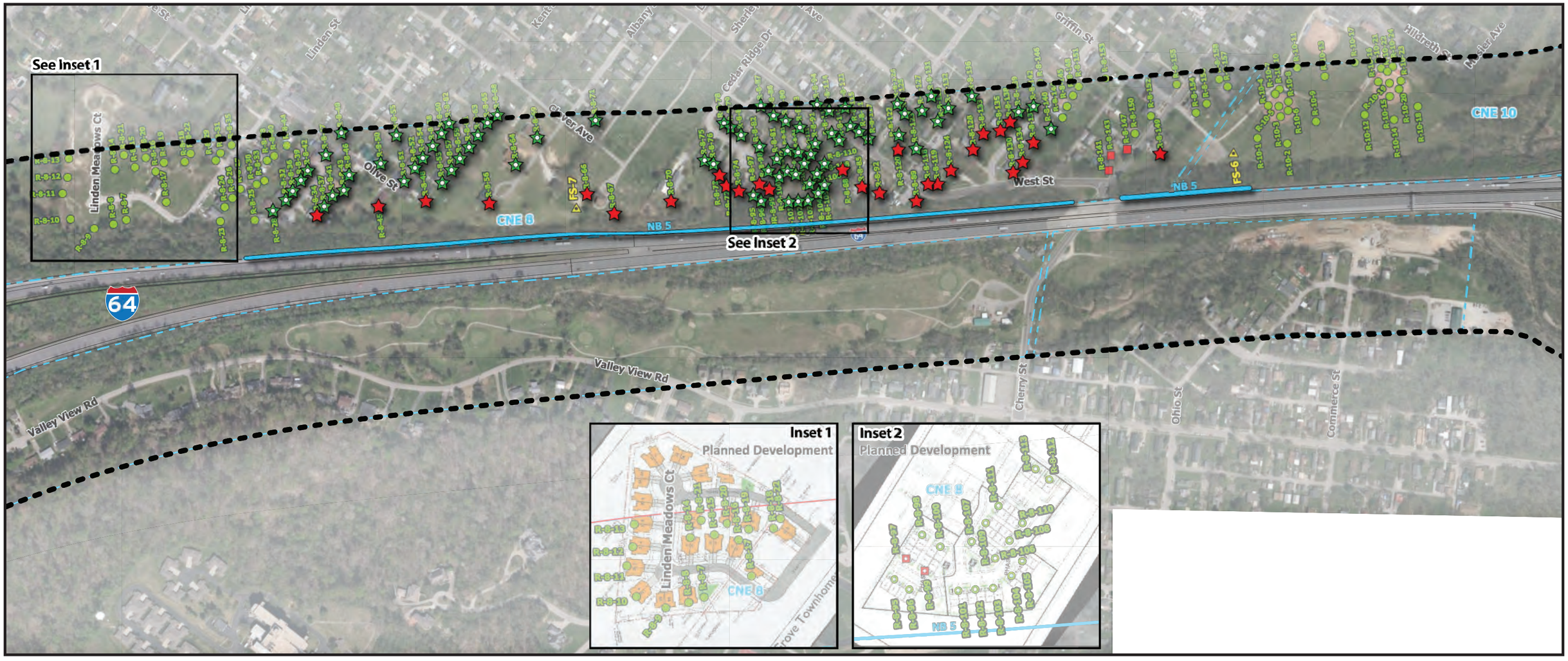
Sincerely,

Kia M. Gillette
HNTB, Senior Project Manager

855-INDOT4U (1-855-463-6848)
INDOT4U.com

Noise Barrier 5

IMPROVE 64
CONNECTING COMMUNITIES



Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
- Feasible and Reasonable Noise Barrier
- Proposed Improvements

- Noise Study Area – 500 feet
- Common Noise Environment

Note: Receiver ID may represent multiple floors or receptor dwelling units.

Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

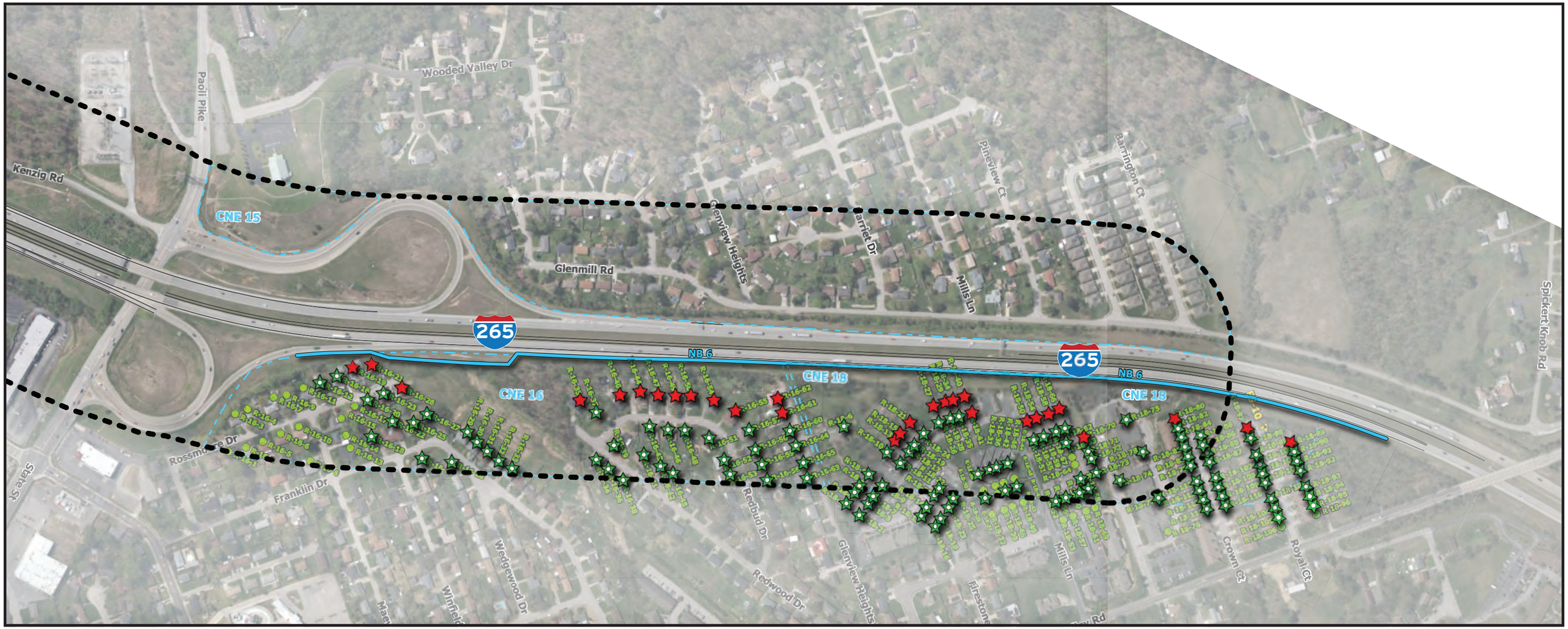
1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES
Graphics created by HNTB Corporation (2021)

Noise Barrier 6

IMPROVE 64
CONNECTING COMMUNITIES



Receiver
- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
- Feasible and Reasonable Noise Barrier
- Proposed Improvements

- Noise Study Area – 500 feet
- Common Noise Environment

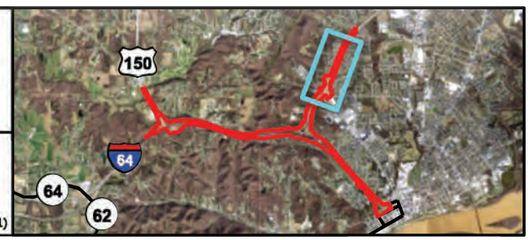
Note: Receiver ID may represent multiple floors or receptor dwelling units.

Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES
Graphics created by HNTB Corporation (2021)



Noise Barrier 7

IMPROVE 64
CONNECTING COMMUNITIES

Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
- Feasible and Reasonable Noise Barrier
- Proposed Improvements

- Noise Study Area – 500 feet
- Common Noise Environment

N

Note: Receiver ID may represent multiple floors or receptor dwelling units.

Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES
Graphics created by HNTB Corporation (2021)

The Indiana Department of Transportation (INDOT) is soliciting input from residents and property owners that have been determined to benefit from the construction of **Noise Barrier 5** for the Improve 64 Project in Floyd County, IN.

INDOT needs your input on whether you want the proposed noise barrier constructed.

Please return this survey by:

February 7, 2023

Additional Comments: _____

_____

_____

_____

_____

IMPROVE 64
CONNECTING COMMUNITIES

INDIANA DEPARTMENT OF TRANSPORTATION

Improve 64 (INDOT DES No. 1900162)

Noise Barrier 5 Survey Card

Thank you for completing this survey card.
Please only fill out one card per household.

Contact Information (please print)

Your Name: _____

Street Address: _____

City: _____

Are you the property owner or tenant?

- ☐ Owner
- ☐ Tenant

Are you in favor of a noise barrier at your property or residence?

- ☐ Yes, I want the noise barrier to be constructed.
- ☐ No, I do not want the noise barrier to be constructed.

IMPROVE 64
CONNECTING COMMUNITIES

☑ Mark your Calendar!

A meeting to discuss potential noise barriers will be held:

January 24, 2023 at 6:00 p.m.
Educational Support Center
(Enter Door 1)
2801 Grant Line Road,
New Albany, IN 47150

Doors will open at 6:00 p.m.
with a presentation at 6:30 p.m.

Members of the Improve 64 Project Team will be available for questions before and after the presentation.

HNTB Corporation
111 Monument Circle
Suite 1200
Indianapolis, Indiana 46204

HNTB Corporation
ATTN: Kia Gillette
111 Monument Circle
Suite 1200
Indianapolis, IN 46204

The Indiana Department of Transportation (INDOT) is soliciting input from residents and property owners that have been determined to benefit from the construction of **Noise Barrier 6** for the Improve 64 Project in Floyd County, IN.

INDOT needs your input on whether you want the proposed noise barrier constructed.

Please return this survey by:

February 7, 2023

Additional Comments: _____

_____

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IMPROVE 64
CONNECTING COMMUNITIES

Improve 64 (INDOT DES No. 1900162)

Noise Barrier 6 Survey Card

Thank you for completing this survey card.
Please only fill out one card per household.

Contact Information (please print)

Your Name: _____

Street Address: _____

City: _____

Are you the property owner or tenant?

- ☐ Owner
- ☐ Tenant

Are you in favor of a noise barrier at your property or residence?

- ☐ Yes, I want the noise barrier to be constructed.
- ☐ No, I do not want the noise barrier to be constructed.

IMPROVE 64
CONNECTING COMMUNITIES

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Doors will open at 6:00 p.m. with a presentation at 6:30 p.m.

Members of the Improve 64 Project Team will be available for questions before and after the presentation.

HNTB Corporation
111 Monument Circle
Suite 1200
Indianapolis, Indiana 46204

HNTB Corporation
ATTN: Kia Gillette
111 Monument Circle
Suite 1200
Indianapolis, IN 46204

The Indiana Department of Transportation (INDOT) is soliciting input from residents and property owners that have been determined to benefit from the construction of **Noise Barrier 7** for the Improve 64 Project in Floyd County, IN.

INDOT needs your input on whether you want the proposed noise barrier constructed.

Please return this survey by:

February 7, 2023

Additional Comments: _____

_____

_____

_____

_____

IMPROVE 64
CONNECTING COMMUNITIES

INDIANA DEPARTMENT OF TRANSPORTATION

Improve 64 (INDOT DES No. 1900162)

Noise Barrier 7 Survey Card

Thank you for completing this survey card.
Please only fill out one card per household.

Contact Information (please print)

Your Name: _____

Street Address: _____

City: _____

Are you the property owner or tenant?

- ☐ Owner
- ☐ Tenant

Are you in favor of a noise barrier at your property or residence?

- ☐ Yes, I want the noise barrier to be constructed.
- ☐ No, I do not want the noise barrier to be constructed.

IMPROVE 64
CONNECTING COMMUNITIES

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A meeting to discuss potential noise barriers will be held:

January 24, 2023 at 6:00 p.m.
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(Enter Door 1)
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Doors will open at 6:00 p.m. with a presentation at 6:30 p.m.

Members of the Improve 64 Project Team will be available for questions before and after the presentation.

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Suite 1200
Indianapolis, Indiana 46204

HNTB Corporation
ATTN: Kia Gillette
111 Monument Circle
Suite 1200
Indianapolis, IN 46204

February 13, 2023

Re: Improve 64 Project - Potential Noise Barrier

Dear Resident/Property Owner:

On behalf of the Indiana Department of Transportation (INDOT), the project team is seeking input from residents and property owners who would benefit from the construction of a noise barrier for the Improve 64 Project. The project is located along I-64 from approximately US 150 to Main Street, and along I-265 from I-64 to Green Valley Road in New Albany, Indiana. The project includes added travel lanes in each direction on I-64 from US 150 to Cherry Street and added travel and auxiliary lanes on I-265 from State Street to I-64.

INDOT evaluates noise abatement measures for feasibility and reasonableness. If proven feasible and reasonable, any residents and/or property owners that have been determined to benefit from the construction of a noise barrier are given the opportunity to provide their input. INDOT then makes the decision whether to construct the noise barrier based on feasibility, reasonableness, and percentage of supportive responses from the benefited residents and/or property owners. Preliminary findings show that a potential noise barrier near your residence or property is both feasible and reasonable. At this time, INDOT needs your input on whether you want the proposed noise barrier constructed in your area.

Enclosed is a map showing the location of the potential noise barrier and the survey postcard. Please mail the completed survey postcard to the address on the card by **Friday March 3, 2023. Your input is needed regarding the possible construction of a noise barrier near your neighborhood.** It **is very important that you submit the survey postcard.**

If you have questions regarding the survey, please contact Kia Gillette at HNTB at 317-917-5240 or via email at kgillette@hntb.com.

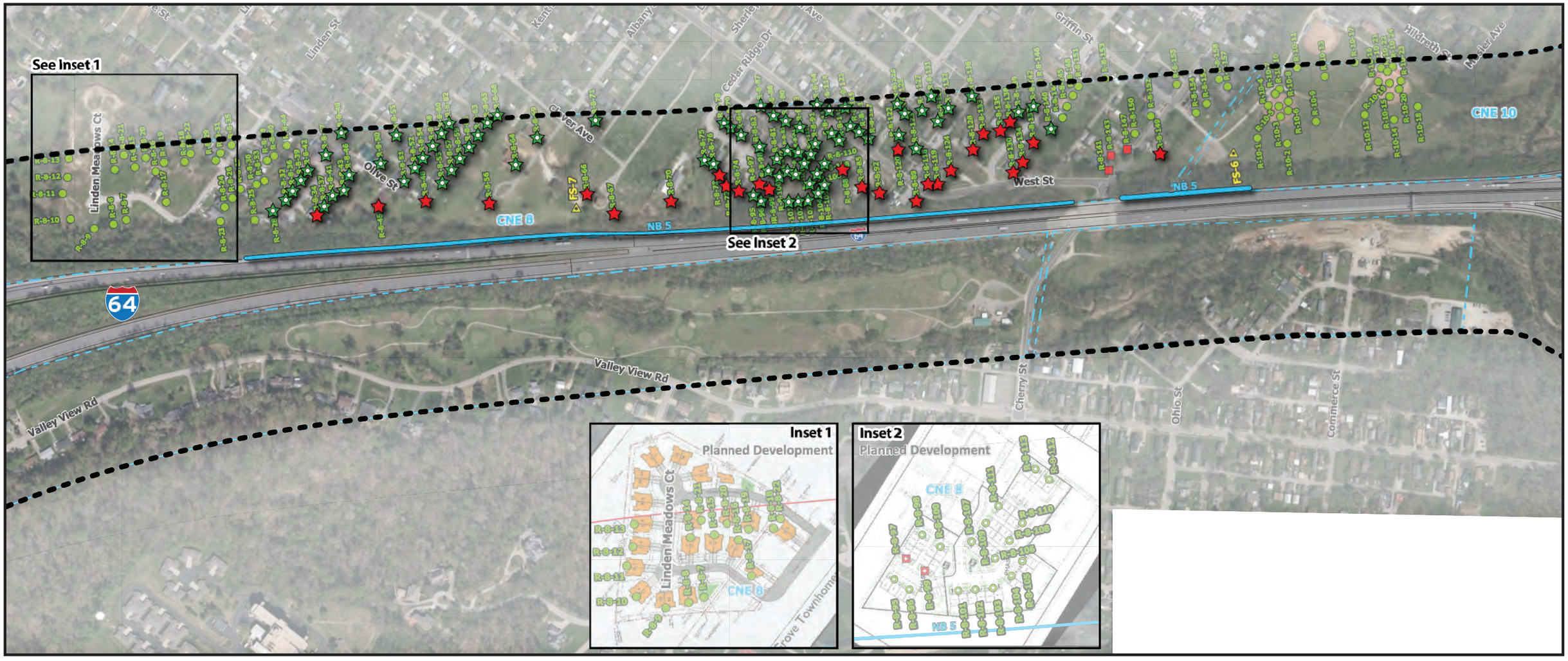
Sincerely,

Kia M. Gillette
HNTB, Senior Project Manager

855-INDOT4U (1-855-463-6848)
INDOT4U.com

Noise Barrier 5

IMPROVE 64
CONNECTING COMMUNITIES



Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
- Feasible and Reasonable Noise Barrier
- Proposed Improvements

- Noise Study Area – 500 feet
- Common Noise Environment

Note: Receiver ID may represent multiple floors or receptor dwelling units.

Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES
Graphics created by HNTB Corporation (2021)

Noise Barrier 7

IMPROVE 64
CONNECTING COMMUNITIES

Receiver

- Impacted, Not Benefited
- Impacted, Benefited
- Not Impacted, Not Benefited
- Not Impacted, Benefited

- Measurement Sites
- Feasible and Reasonable Noise Barrier
- Proposed Improvements

- Noise Study Area – 500 feet
- Common Noise Environment

Note: Receiver ID may represent multiple floors or receptor dwelling units.

N

Traffic Noise Study
Improve 64 Project
Floyd County, Indiana

1 inch = 300 ft

Des. No. 1900162

IMPROVE 64 CONNECTING COMMUNITIES
Graphics created by HNTB Corporation (2021)

The Indiana Department of Transportation (INDOT) is soliciting input from residents and property owners that have been determined to benefit from the construction of **Noise Barrier 5** for the Improve 64 Project in Floyd County, IN.

INDOT needs your input on whether you want the proposed noise barrier constructed.

Please return this survey by:

March 3, 2023

Additional Comments: _____

_____

_____

_____

_____

IMPROVE 64
CONNECTING COMMUNITIES

INDIANA DEPARTMENT OF TRANSPORTATION

Improve 64 (INDOT DES No. 1900162)

Noise Barrier 5 Survey Card

Thank you for completing this survey card.
Please only fill out one card per household.

Contact Information (please print)

Your Name: _____

Street Address: _____

City: _____

Are you the property owner or tenant?

- ☐ Owner
- ☐ Tenant

Are you in favor of a noise barrier at your property or residence?

- ☐ Yes, I want the noise barrier to be constructed.
- ☐ No, I do not want the noise barrier to be constructed.

HNTB Corporation
111 Monument Circle
Suite 1200
Indianapolis, Indiana 46204

HNTB Corporation
ATTN: Kia Gillette
111 Monument Circle
Suite 1200
Indianapolis, IN 46204

The Indiana Department of Transportation (INDOT) is soliciting input from residents and property owners that have been determined to benefit from the construction of **Noise Barrier 7** for the Improve 64 Project in Floyd County, IN.

INDOT needs your input on whether you want the proposed noise barrier constructed.

Please return this survey by:

March 3, 2023

Additional Comments: _____

_____

_____

_____

_____

IMPROVE 64
CONNECTING COMMUNITIES

INDIANA DEPARTMENT OF TRANSPORTATION

Improve 64 (INDOT DES No. 1900162)

Noise Barrier 7 Survey Card

Thank you for completing this survey card.
Please only fill out one card per household.

Contact Information (please print)

Your Name: _____

Street Address: _____

City: _____

Are you the property owner or tenant?

- ☐ Owner
- ☐ Tenant

Are you in favor of a noise barrier at your property or residence?

- ☐ Yes, I want the noise barrier to be constructed.
- ☐ No, I do not want the noise barrier to be constructed.

HNTB Corporation
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HNTB Corporation
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Indianapolis, IN 46204

Table 1 List of Comments from Public Comment Period 2 (Noise) (January 24 – March 3, 2023)

Last Name	First Name	Agency/Organization	Date Received	Comment ID
Local Agency Comments				
Owens	Maymie	New Albany Redevelopment / Economic Administrative Assistant	2/23/23	LA001
Public Comments				
Ash	Hannah	Public	2/7/23	PI002
Atz	John	Public	2/7/23	PI010
Barton	Jason	Public	2/7/23	PI045
Baumann	James	Public	3/3/23	PI033
Bedan	Jeanette	Public	2/7/23	PI051
Bischoff	Pam	Public	2/7/23	PI020
Boutelle	Tamra	Public	2/7/23	PI039
Bova	Terry	Public	3/3/23	PI038
Brown	Ron & Nancy	Public	1/24/23	PI066
Brown	Nancy	Public	2/7/23	PI056
Brown	Ron	Public	2/7/23	PI057
Campbell	Keith	Public	2/7/23	PI014
Chastain	Terry & Ava	Public	2/7/23	PI029
Clem	David	Public	2/7/23	PI032
Collins	Jack Jr. & Rhonda	Public	2/7/23	PI040
Conley	Brian	Public	2/7/23	PI043
Conner	Betty	Public	2/7/23	PI016
Cooksey	Jan	Public	3/3/23	PI053
Cruse	Sara	Public	3/3/23	PI035
Cruse	Sara	Public	2/7/23	PI036
Dowden	Rosalie	Public	2/21/23	PI064
Duncan	James	Public	2/7/23	PI031
Faulkner	Linda	Public	1/24/23	PI070
Fulks	Roger	Public	2/7/23	PI024
Gilbert	Michael	Public	2/7/23	PI012
Goodman	Thomas	Public	2/7/23	PI059
Gray	Rhonda	Public	12/28/22	PI060
Hall	Douglas	Public	2/7/23	PI021
Hall	Elizabeth	Public	2/7/23	PI030
Hall	Elizabeth	Public	2/14/23	PI063
Hall	Elizabeth	Public	3/20/23	PI065
Hardin	Wonda	Public	2/7/23	PI052

Last Name	First Name	Agency/Organization	Date Received	Comment ID
Harshey	Don & Cheryl	Public	3/3/23	PI034
Higdon	Susan	Public	2/7/23	PI054
Hilderbrand	Henry	Public	2/7/23	PI011
Hobbs	James	Public	3/3/23	PI001
Holland	Charles	Public	2/7/23	PI042
Hollensead	Dolores	Public	2/7/23	PI048
Hook	George	Public	2/7/23	PI046
Jenkins	Roger	Public	2/7/23	PI005
Keinsley	Betty	Public	2/7/23	PI018
Kelley	Rebecca	Public	2/7/23	PI015
Kingsfield Apartments, LLC	N/A	Public	2/7/23	PI025
Klusmeyer	Sara	Public	2/7/23	PI017
Lee	Robert	Public	2/7/23	PI055
Mistler	Dean	Public	2/7/23	PI027
Murphy	Elaine	Public	1/24/23	PI067
Nolasco	Dresa	Public	2/7/23	PI022
Padgett	Laura	Public	2/7/23	PI009
Pennington	Jean	Public	2/7/23	PI003
Pruzin	Michael	Public	1/30/23	PI061
Purlee	Angel (Bailey)	Public	2/7/23	PI041
Rake	Melvin & Sharon	Public	1/24/23	PI071
Reed	Janet	Public	2/7/23	PI006
Reed	Mary	Public	2/7/23	PI007
Ringham	C.	Public	2/7/23	PI008
Rudy	Patrick	Public	3/3/23	PI037
Schmidt	Linda	Public	1/24/23	PI069
Schmidt	Linda	Public	2/7/23	PI049
Schroeder	John & Angela	Public	2/7/23	PI023
Shuck	Paula	Public	1/20/23	PI062
Striegel	Elise	Public	3/3/23	PI044
Thompson	Jim	Public	2/7/23	PI058
Tomes	Marla	Public	2/7/23	PI019
Turner	Deborah	Public	3/3/23	PI047
Vinal	Miranda	Public	2/7/23	PI004
Wing	Barden	Public	1/24/23	PI068
Winstead	Steven Alan	Public	2/7/23	PI050
Wright	Christopher	Public	2/7/23	PI026
Wyzard	Bobbie	Public	2/7/23	PI028
Yochum	Delores	Public	2/7/23	PI013

Table 2 Responses to Comments from Public Comment Period 2 (Noise) (January 24 – March 3, 2023)

(LA=Local Agency, PI=Public Individual)

Comment ID	Sub	Last Name	First Name	Agency/ Organization	Date Received	Comment	Response
Local Agency							
LA001	01	Owens	Maymie	New Albany Redevelopment / Economic Administrative Assistant	2/23/23	I am reaching out because we have received your letter in the mail regarding the noise barrier construction for Improve 64 Project. Unfortunately, we did not receive the survey in the mail. Is there any way you could share this via email or a link?	A copy of the postcard was sent via email on 2/23/23 with options for completing and returning it.
Public Individuals							
PI001	01	Hobbs	James	Public	3/3/23	Noise Barrier (NB) 5 - Can you make this area of I-64 a no jake break zone. We need that to reduce noise!	INDOT does not install "no jake brake" signs on the interstates. Jake brakes emit a low frequency intermittent sound that might be heard behind a noise barrier either way. The sporadic occurrence of jake brakes is not specifically accounted for in the noise model.
PI002	01	Ash	Hannah	Public	2/7/23	NB 5 – I work from home and I'm on calls all day. This would be very helpful. Thank you!	Based on the studies completed to date, INDOT has determined that noise abatement is likely, but not guaranteed at 3 locations, NB 5, NB 6, and NB 7. Noise abatement at these locations is based upon preliminary design criteria. A reevaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed such that noise abatement is not feasible and reasonable, the abatement measures might not be provided.

PI003	01	Pennington	Jean	Public	2/7/23	NB 5 – The West Street from Cherry St to Jackson St (1 block) a 3 foot green space to run between I-64 and West Street. (1 Block).	A 3-foot green space is not included in the project design at this location.
PI004	01	Vinal	Miranda	Public	2/7/23	NB 5 - Hard to have conversations outside due to noise from highway. Semi trucks also wake us & baby when they go by. Would love noise barrier as long as no extra cost to us.	Please see response to PI002. The noise barriers will not require additional cost to adjacent property owners.
PI005	01	Jenkins	Roger	Public	2/7/23	NB 5 – It is very loud [not decipherable]	Please see response to PI002.
PI006	01	Reed	Janet	Public	2/7/23	NB 6 – Glad to hear that this project will be completed.	Please see response to PI002.
PI007	01	Reed	Mary	Public	2/7/23	NB 6 – Please keep the trees.	Tree clearing will be minimized as much as possible. It is possible that some, but not all, trees will be removed to construct NB 6.
PI008	01	Ringham	C.	Public	2/7/23	NB 6 – Never bothered by hwy noise.	Please see response to PI002.
PI009	01	Padgett	Laura	Public	2/7/23	NB 6- It is difficult to work at home with noise level.	Please see response to PI002.
PI010	01	Atz	John	Public	2/7/23	NB 6 - Don't take trees	Please see response to PI007.
PI011	01	Hilderbrand	Henry	Public	2/7/23	NB 6 – Start work this spring! (2023)	Please see response to PI002. Construction is anticipated to start in late 2024.
PI012	01	Gilbert	Michael	Public	2/7/23	NB 6 – Much needed	Please see response to PI002.
PI013	01	Yochum	Delores	Public	2/7/23	NB 6 – Keep the trees	Please see response to PI007.
PI014	01	Campbell	Keith	Public	2/7/23	NB 6 – Have been here since 9/2005 and have never thought noise was bad? Would rather not live behind a wall.	Please see response to PI002.
PI015	01	Kelley	Rebecca	Public	2/7/23	NB 6 - Please leave trees!	Please see response to PI007.
PI016	01	Conner	Betty	Public	2/7/23	NB 6 – Please keep trees	Please see response to PI007.
PI017	01	Klusmeyer	Sara	Public	2/7/23	NB 6 – Please leave the trees	Please see response to PI007.
PI018	01	Keinsley	Betty	Public	2/7/23	NB 6 – Please don't cut any trees along our part of highway	Please see response to PI007.
PI019	01	Tomes	Marla	Public	2/7/23	NB 6 – It is about time. We need it.	Please see response to PI002.

PI020	01	Bischoff	Pam	Public	2/7/23	NB 6 - My neighbor, who had one of the best Xmas lights shows in town, just moved due to noise. Gotten worse since speed limit increase!!!	Please see response to PI002.
PI021	01	Hall	Douglas	Public	2/7/23	NB 6 – I fully support the construction of the sound barrier! We hear the highway constantly!!	Please see response to PI002.
PI022	01	Nolasco	Dresa	Public	2/7/23	NB 6 – I see only a noise barrier on NB side. One is needed on the SB side, also! PLEASE!! The noise from traffic is horrible!	Please see response to PI002. NB 6 is east of I-265 and NB 7 is west of I-265. NB 5 is east of I-65. There is no noise barrier proposed west of I-64.
PI023	01	Schroeder	John & Angela	Public	2/7/23	NB 6 – Contingent on $ and land loss.	Please see response to PI002 and PI004. No new right-of-way will be required for noise barrier construction.
PI024	01	Fulks	Roger	Public	2/7/23	NB 6 - Even though we are not affected by this construction, every time we open doors/windows traffic is all we hear. Bought new windows to keep noise out!	Please see response to PI002.
PI025	01	Kingsfield Apartments, LLC	N/A	Public	2/7/23	NB 6 – This vote in favor applies to all votes Kingsfield Apartments LLC is permitted to place.	Please see response to PI002.
PI026	01	Wright	Christopher	Public	2/7/23	NB 6 - I was here representing Autumn Woods health Campus on behalf of Trilogy.	Please see response to PI002.
PI027	01	Mistler	Dean	Public	2/7/23	NB 7 - Yes, I want it.	Please see response to PI002.
PI028	01	Wyzard	Bobbie	Public	2/7/23	NB 7 – I have lived here since 1984 and have begged everyone for a barrier!	Please see response to PI002.
PI029	01	Chastain	Terry & Ava	Public	2/7/23	NB 7 – I do not want the barrier!	Please see response to PI002.
PI030	01	Hall	Elizabeth	Public	2/7/23	NB 7 – I've wanted this for years not just from the noise but safety issues.	Please see response to PI002.
PI031	01	Duncan	James	Public	2/7/23	NB 7 – I have lived at address 46 years. The noise has gotten worse every year. Can hear highway inside house. Excited to know pass [not decipherable]	Please see response to PI002.
PI032	01	Clem	David	Public	2/7/23	NB 7 - That would be great it would had [add] value to our homes! Thank you	Please see response to PI002.

PI033	01	Baumann	James	Public	3/3/23	NB 7 – Every time I step outside, I hear road noise from I-265 & traffic.	Please see response to PI002.
PI034	01	Harshey	Don & Cheryl	Public	3/3/23	NB 7 – Very noisy and only get worse over time	Please see response to PI002.
PI035	01	Cruse	Sara	Public	3/3/23	NB 7 – I feel exposed to all walkers because of the stop point. Please consider extending to the top of the hill for walkers not to stop at my house.	In accordance with the noise model results and INDOT's noise policy, NB 7 would stop at the eastern edge of the residence.
PI036	01	Cruse	Sara	Public	2/7/23	NB 7 – Please make barrier go past [Address Removed].	Please see response to PI035.
PI037	01	Rudy	Patrick	Public	3/3/23	NB 7 – Looks like barrier ends just short of 227, I would like to see beyond 227 a little. Thanks!	Please see response to PI035.
PI038	01	Bova	Terry	Public	3/3/23	NB 7 – Will help w/deer not crossing onto the highway along w/noise. Thank you!	Please see response to PI002.
PI039	01	Boutelle	Tamra	Public	2/7/23	NB 7 – Please we need noise barrier. Cannot talk in backyard due to noise from hwy. Always noisy.	Please see response to PI002.
PI040	01	Collins	Jack Jr & Rhonda	Public	2/7/23	NB 7 – Noise makes it hard to set out on deck. Also like to have windows open in nice weather. Noise makes it hard to hear TV.	Please see response to PI002.
PI041	01	Purlee	Angel (Bailey)	Public	2/7/23	NB 7 – A noise barrier would greatly enhance our lives, please build it!	Please see response to PI002.
PI042	01	Holland	Charles	Public	2/7/23	NB 7 – yes – yes – yes- Please	Please see response to PI002.
PI043	01	Conley	Brian	Public	2/7/23	NB 7 – This barrier would be a tremendous benefit for our neighborhood	Please see response to PI002.
PI044	01	Striegel	Elise	Public	3/3/23	NB 7 – Not an issue for me as I am further back from the expressway	Please see response to PI002.
PI045	01	Barton	Jason	Public	2/7/23	NB 7 – The noise level in our back yard is horrible. We have lived here for 30 years and it has always been pretty quiet until a couple year ago	Please see response to PI002.
PI046	01	Hook	George	Public	2/7/23	NB 7 – This should have been built 40 years ago	Please see response to PI002.
PI047	01	Turner	Deborah	Public	3/3/23	NB 7 – Definitely yes- very noisy from 6am-9am and 4pm-7pm weekdays	Please see response to PI002.

PI048	01	Hollensead	Dolores	Public	2/7/23	NB 7 – Traffic too noisy!!! Increased speed limit made worse.	Please see response to PI002.
PI049	01	Schmidt	Linda	Public	2/7/23	NB 7 – The noise disturbs our sleep. Phone conversations outdoors is not possible.	Please see response to PI002.
PI050	01	Winstead	Steven Alan	Public	2/7/23	NB 7 – Only complaint about my house!	Please see response to PI002.
PI051	01	Bedan	Jeanette	Public	2/7/23	NB 7 – Yes, we need this so bad, because the noise and dust is so terrible that I heard some home owners moved	Please see response to PI002.
PI052	01	Hardin	Wonda	Public	2/7/23	NB 7 – Hopefully some of the pollution and dust.	Please see response to PI002.
PI053	01	Cooksey	Jan	Public	3/3/23	NB 7 – Lived here for 20 yrs. Don't need then or now. Don't want dust or dirt or noise.	Please see response to PI002.
PI054	01	Higdon	Susan	Public	2/7/23	NB 7 – I understand that the noise barrier would not be on my property. It would be by the fence next to I-265 and near my house.	Please see response to PI002, PI004, and PI023.
PI055	01	Lee	Robert	Public	2/7/23	Well needed! Thanks!	Please see response to PI002.
PI056	01	Brown	Nancy	Public	2/7/23	We're off Glenmill and definitely hear the interstate noise. We'd benefit immensely.	Please see response to PI002.
PI057	01	Brown	Ron	Public	2/7/23	Noise is bad enough at times now. Additional traffic will only make it worse.	Please see response to PI002.
PI058	01	Thompson	Jim	Public	2/7/23	Really needed!	Please see response to PI002.
PI059	01	Goodman	Thomas	Public	2/7/23	I own property at [not decipherable] (between Cherry and Spring) at dead end of Common next to highway when I hope to build a home [not decipherable].	This address is located west of I-64. No noise barrier is proposed west of I-64.
PI060	01	Gray	Rhonda	Public	12/28/22	NB 5 - Hi, I received the letter and map concerning the noise barrier meeting. There is mention of a survey postcard. There is no postcard in my mailing. Could you send one to [Address Removed].	A new postcard was mailed to the commentor on 1/3/23.

PI061	01	Pruzin	Michael	Public	1/30/23	I was unable to attend the meeting on the Improve64 noise barriers. Should I have received a questionnaire regarding the addition of the noise barrier #7? I live at [Address Removed]. I didn't receive a questionnaire and if I was supposed to receive one, can you send it to me?	This address is located near NB 7, but was not a benefited receptor and would not have been sent a noise survey.
PI062	01	Shuck	Paula	Public	1/20/23	Called in to see if INDOT will be installing a noise barrier wall on I-265 on the eastbound ramp from State St, in Floyd county.	Please see response to PI002. NB 6 is located along the east side of I-265 and starts at the eastbound entrance ramp from State Street.
PI063	01	Hall	Elizabeth	Public	2/14/23	When will we know if the noise barriers for improve 64 were approved by each area NB5 NB6 NB7.	The Final Improve 64 Noise Report is anticipated to be approved in late April/May of this year and will include information on which noise barriers will likely be constructed. The report will be posted to the Improve 64 website once it is approved.
PI064	01	Dowden	Rosalie	Public	2/21/23	At approximately 9:00 a.m. on February 21, 2023, Rosalie Dowden called Kia Gillette of HNTB to discuss the Improve 64 Project. Her house is located east of West Street, in the curve near I-64, and she received a mailing and postcard regarding proposed Noise Barrier 5. She asked how tall the proposed noise barrier would be. Kia reviewed the noise report which indicated it would be 10-22 feet tall. Ms. Dowden indicated she was not in favor of the barrier due to visual impacts and it would feel like she was "walled in." Kia encouraged her to indicate that she was not in favor of the barrier on the postcard and send it back to HNTB in the mail.	Please see response to PI002.
PI065	01	Hall	Elizabeth	Public	3/20/23	I'm just wanting to know if you can let me know When will we know if the noise barriers for improve 64 were approved by each area NB5 NB6 NB7. Thanks	Please see response to PI063.
PI066	01	Brown	Ron & Nancy	Public	1/24/23	We will definitely need noise barriers when your job add travel lanes, bad enough as it is now.	Please see response to PI002.

PI067	01	Murphy	Elaine	Public	1/24/23	I live at the intersection of 265 and Charlestown Rd. I would be in favor of extending sound barriers to that point.	In accordance with the INDOT Noise Policy, only the Improve 64 project area was modeled for noise. NB 6 and NB 7 along I-265 will stop west of Green Valley Road along the project area. Any future added travel lanes projects along I-265 will include a noise analysis.
PI068	01	Wing	Barden	Public	1/24/23	Our house is located just before the I64 overpass on Captain Frank Road, and right up against the I-64 right-of-way just before 265 interchange. I64 is elevated above our property. There is considerable noise from the traffic (primarily from semis). Please consider extending the noise barrier to the west of our property. Thank you.	In accordance with the noise model results and INDOT's noise policy, NB 5 would stop approximately 1,300 feet south of Captain Frank Road.
PI069	01	Schmidt	Linda	Public	1/24/23	Consider reducing speed to tone down noise on 265. Noise has increased considerably since speed changed to 65 mph.	Speed limits on I-265 will remain the same as existing.
PI070	01	Faulkner	Linda	Public	1/24/23	I would like to see the speed limit lowered on 265 back to 55 mph. It is difficult to enter and exit 265 with the 65 mph limit. The span is such a short distance. They also use it in warmer weather as a drag racing event.	Please see response to PI069.
PI071	01	Rake	Melvin & Sharon	Public	1/24/23	EB traffic btwn Georgetown exit & 150 exit (EB 64 side), jake brakes in that stretch makes the noise, although not necessary. No jake brake sone signs would be helpful.	Please see response to PI001.