APPENDIX C Noise Baseline

TRAFFIC NOISE IMPACT ANALYSIS

US 60 Improvements Ballard and McCracken Counties, Kentucky Item Numbers: 01-115.00, 01-115.1 and 01-118.00

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August 2019

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EXECUTIVE SUMMARY

The proposed project consists of the reconstruction of approximately 6.7 miles of US 60 in McCracken and Ballard Counties. The project begins in Ballard County on US 60, east of the community of La Center at approximately milepoint (MP) 12.0, just east of Humphrey Creek and west of KY 310. The project ends in McCracken County where the existing US 60 four-lane cross-section into Paducah ends, at MP 1.5.

The purpose of the project is to improve mobility and safety for the US 60 corridor in eastern Ballard County. The project would increase the opportunity for freight movement and improve safety by modifying and/or improving geometrics to meet current design standards.

A traffic noise impact analysis (TNIA) was performed to determine the highway-generated noise impacts associated with the proposed project. The analysis was conducted in accordance with governing document 23 Code of Federal Regulations (CFR) Part 772, "*Procedures for Abatement of Highway Traffic Noise and Construction Noise*" and the Kentucky Transportation Cabinet *Noise Analysis and Abatement Policy* (dated July 1, 2015).

Based on TNM modeling, traffic data for the design year (2040) and the most current design files for the US 60 improvements, traffic noise impacts are predicted to occur as a result of the construction of any of the 3 build alternatives. The construction of noise barriers was considered for abating noise impacts generated by the proposed project.

Upon review, Alternative 1 represents an improvement primarily on new alignment. As described by the existing land use, noise sensitive receptors are relatively few and are dispersed and scattered throughout the study corridor. After consideration of potential relocations or displacements by the proposed Alternative 1 alignment, these receptors represent isolated residences in vicinity to the proposed alignment. Substantial noise reduction for a reasonable number of impacted receptors would not be achievable. Construction of noise walls was therefore not considered feasible for Alternative 1.

For Alternative 2, which generally follows the existing US 60 alignment, approximately 23 receptors were determined to have future noise levels that would approach or exceed their NAC. However, 16 receptors would potentially be displaced or relocated by the widening improvements with at least 3 receptors representing isolated residences. Four (4) of the remaining receptors

were located adjacent to US 60 in Kevil and currently have direct access (driveways). A proposed barrier at this location would pose safety, overriding sight distance and visibility issues for motorists. Potential noise barriers were not considered acoustically feasible for this alternative and none were proposed.

Approximately 11 receptors were determined to have future noise levels that would approach or exceed their NAC for Alternative 3. The alignment for Alternative 3 follows the former railroad bed west of Kevil and follows existing US 60 through the eastern portion of the project area. At least seven (7) receptors would potentially be displaced or relocated by the widening improvements. Four (4) of the remaining receptors were located adjacent to US 60 in Kevil and currently have direct access (driveways). As discussed for Alternative 2, a proposed barrier at this location would pose overriding sight distance and visibility issues for motorists. For the section of Alternative 3 on new alignment, predicted noise levels for four (4) receptors would also substantially exceed (> 10 dBA Leq) their existing noise levels. However, all of these receptors would be considered isolated residences. Since a substantial noise reduction would not be achievable for a reasonable number of impacted receptors, noise barriers were not considered acoustically feasible for this alternative and none were proposed.

The opportunities for minimizing traffic noise as a result of the project are limited. Based on a preliminary noise analysis, the construction of noise barriers are not acoustically feasible and therefore, not reasonable for any alternative. Alignment shifts would also likely result in increased environmental impacts, relocations and construction costs. Therefore, additional noise abatement measures were determined not to be effective as described in 23 CFR 772.13(c) and none were proposed.

1.0 INTRODUCTION

The proposed project is the reconstruction of 6.7 miles of US 60 in McCracken and Ballard Counties. The project begins in the west in Ballard County on US 60, east of the community of La Center at approximately milepoint (MP) 12.0, just east of Humphrey Creek and west of KY 310. The project ends in the east in McCracken County where the existing US 60 four-lane cross-section into Paducah ends, at MP 1.5. The project study area is shown in **Figure 1, Study Area.**

The following sections provide an overview of the purpose of the Traffic Noise Impact Analysis (TNIA) conducted for the US 60 Improvements in Ballard and McCracken counties and also includes a brief statement of the project's purpose and need as well as provide background information for the project.

1.1 Purpose of the Traffic Noise Impact Analysis

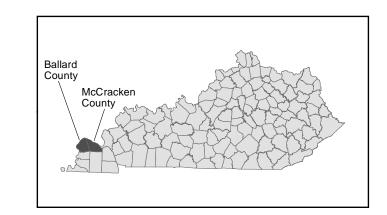
The purpose of this report is to evaluate traffic noise impacts and examine potential noise abatement options, if required, under the requirements of Title 23, Part 772 of the Code of Federal Regulations (CFR), "Procedures for Abatement of Highway Traffic Noise and Construction Noise" and the Kentucky Transportation Cabinet's (KYTC) Noise Analysis and Abatement Policy (dated July 1, 2015).

1.2 Project Purpose and Need

The purpose of the project is to improve mobility and safety for the US 60 corridor in eastern Ballard County. US 60 is the only east-west arterial link in Kentucky west of Paducah, leading to the only Ohio River highway crossing for an 80-mile stretch. Listed on the National Highway System and a state-designated truck route, its narrow lanes, limited passing opportunities, closely spaced access points through Kevil, and substandard curves make the route challenging for freight carriers. Further, five years of data show a history of crashes, with two high crash spots and five fatality collisions.

1.3 Project Area Description and Setting

The area is generally rural and agricultural in nature; however, there is commercial and residential development along US 60 through the city limits of Kevil. This development is relatively dense as compared to the surrounding project area, and many of the structures are located close to the existing road. Numerous driveways and commercial entrances are located along this stretch. The



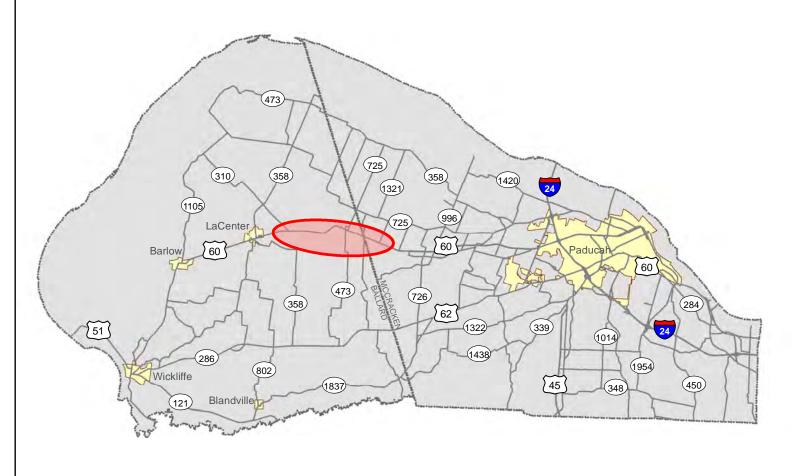
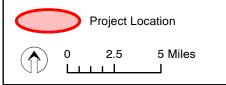


Figure 1



commercial developments along this segment of US 60 are generally banks, auto repair shops, small specialty shops, and other small businesses. A technology park, which includes several businesses, an adult care facility, and children's daycare center, is also located in this area.

1.4 Existing Facilities

US 60, locally known as Hinkleville Road, Kentucky Avenue, and Paducah Road moving east to west, is a two-lane rural highway with two 11-foot lanes and 2-foot paved shoulders. The speed limit in the area is generally 55 miles per hour (mph) except through the city of Kevil. In Kevil, the speed limit is 35 mph west of KY 473 and 45 mph east of KY 473. The existing roadway has several segments that do not meet current geometric standards, and sight distance is severely restricted at several locations. No traffic stoplights exist on this section of roadway, but a flashing beacon is located at the intersection of US 60 and KY 473.

US 60 is the only east-west arterial link in Kentucky west of Paducah, leading to the only Ohio River highway crossing for an 80-mile stretch. Listed on the National Highway System and a state-designated truck route, its narrow lanes, limited passing opportunities, closely spaced access points through Kevil, and substandard curves make the route challenging for freight carriers. The route is rated for AAA trucks (up to 80,000 pounds gross weight). Volumes range from 5,800 to

7,200 vehicles per day (vpd) based on 2017 counts, including 12 percent truck traffic. There are three culverts along the route, all rated in Fair condition as of their 2017 inspections:

- 004B00011N for Frazier Creek, MP 12.475
- 004B00012N for Branch of Frazier Creek, MP 12.515
- 004B00013N, for Page Branch, MP 15.866

Other **state-maintained highways** in the area are KY 310 (Turner Landing Road) near the western project terminus, KY 473 (Gage and New Liberty Church roads) in Kevil, and KY 2532 (County Line Road) – all rural minor collector routes. A few dozen local routes also intersect US 60 along the project length.

2.0 ALTERNATIVES UNDER CONSIDERATION

The proposed project is the reconstruction of 6.7 miles of US 60 in McCracken and Ballard counties. The project begins in the west in Ballard County on US 60, east of the community of La Center at approximately milepoint (MP) 12.0, just east of Humphrey Creek and west of KY 310. The project ends in McCracken County where the existing US 60 four-lane cross-section into Paducah ends, at MP 1.5 (see Figure 2, Project Location). Preliminary designs have been developed under three separate KYTC Item numbers, including a southern "preferred alternative" on new alignment.

Local officials have voiced their preference for a four-lane section; however, due to the Transportation Cabinet's focus on Performance Based Flexible Solutions (PBFS), lack of funding, and traffic volumes in the area, it is important to consider a two-lane initial/four-lane ultimate typical section as well. Therefore, alternates that include both a two-lane initial/four-lane ultimate and a four-lane typical section were considered. Traffic projections will be used to further define the alternates and typical sections studied.

The environmental process will evaluate a No-Build Alternative and three build alternatives:

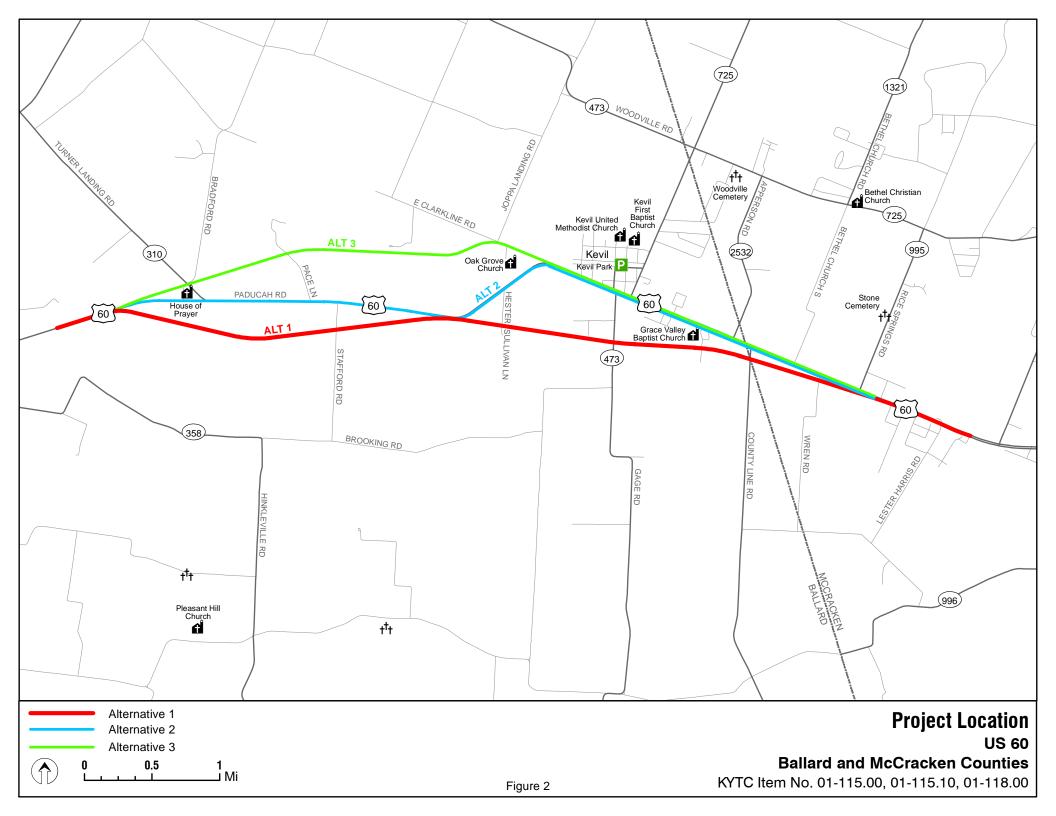
- Rebuild the existing road, either in total or in selected locations; and
- Build a road on new alignment within the same general roadway corridor

2.1 No-Build Alternative

In order to satisfy National Environmental Policy Act (NEPA) requirements, an evaluation of the No-Build Alternative was performed. The No-Build Alternative is one in which the KYTC would take no action to construct or reconstruct US 60; only routine maintenance would occur. The No-Build Alternative would maintain the current configuration of the existing roadway. The No-Build Alternative would not improve east-west connectivity and would not meet the stated purpose and need for the proposed project. Therefore, the No-Build Alternative was not considered a reasonable and feasible alternative.

2.2 Build Alternatives

Three build alternatives are under consideration as shown in **Figure 2.** A variety of typical sections were considered as part of the engineering design process: two to five travel lanes, various



shoulder widths, rural or urban templates, etc. To be conservative, the largest footprint scenarios were evaluated and impacts may be reduced as preliminary designs are refined.

- Alternative 1 (Red) begins east of the bridge over Humphrey Creek, creating a new route on new alignment south of existing US 60. It ends at the improved 4-lane section near Lester Harris Road. The assumed cross-section is a 4-lane divided rural highway.
- Alternative 2 (Green) begins east of the bridge over Humphrey Creek, generally following the existing US 60 alignment. The assumed cross-section is a 4-lane divided rural highway with a 5-lane urban section through Kevil.
- Alternative 3 (Blue) begins east of the bridge over Humphrey Creek, while creating a new route along the old railroad bed west of Kevil. The alignment then generally follows the existing US 60 alignment through Kevil to the east. The assumed cross-section is a 4-lane divided rural highway with a 5-lane urban section through Kevil.

3.0 TRAFFIC NOISE ANALYSIS

Noise can be generally defined as unwanted or excessive sound. Sources of highway traffic noise include tire pavement interaction, as well as vehicle engine and exhaust system operations. Noise is a vibrational energy form that causes pressure variations in elastic media such as air or water. The human ear perceives these variations as sound. The ear can discern different levels of loudness as the intensity of pressure variations fluctuate. These pressure differences are commonly measured in decibels (dB). The decibel scale audible to the human ear ranges from 0 to 140 dBs. A level of zero decibels corresponds to the lowest limit of audibility, while a level of 140 decibels represents the threshold of pain. To closely resemble the non-linear sensitivity of human hearing, the "A-weighted" scale is used to define the relative loudness of different frequencies. Sound levels measured using the A-weighted scale is often expressed as dBA.

The procedures set forth by the Federal Highway Administration (FHWA) recommend noise analyses to be performed in terms of either L10 or Leq. L10 is the sound level exceeded 10 percent of the time. Leq is defined as the equivalent, steady state sound level, which in a given period of time contains the same acoustical energy as the time-varying sound level during the same time period. The Leq noise descriptor was used in this study because of its relative ease to monitor and compare with FHWA's Noise Abatement Criteria (NAC). For the purposes of this study, all references to sound levels will be in dBA Leq.

For this project, the latest version of the FHWA Traffic Noise Model (TNM) Version 2.5 was used to predict the highway generated traffic noise levels associated with the US 60 improvements. TNM takes into account factors from current and future traffic volumes and speeds, vehicle types, meteorology, topography, buildings and roadways. These factors are used to create a 3-dimensional model that is used to calculate noise levels for an entire area and can also be used to predict both existing and future noise levels for specific locations using various criteria and information programmed into the model.

3.1 Noise Sensitive Sites

The FHWA's Noise Abatement Criteria (NAC) was used to select noise sensitive land uses within the project study area (see Table 1). Seven land use activity categories have been identified by FHWA for use in traffic noise impact analysis. Maximum noise level thresholds have been established for four of these land use activity categories. These maximum thresholds or criteria

Table 1: Noise Abatement Criteria (NAC)

	Sound	·Weighted Level: s (dBA)	Description of Activity Category
Activity	L _{eq} (h)	L ₁₀ (h)	
A	57 (Exterior)	60 (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.
В	67 (Exterior)	70 (Exterior)	Residential
С	67 (Exterior)	70 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	55 (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	72 (Exterior)	75 (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.

levels represent acceptable traffic noise conditions. Noise abatement measures must be considered when predicted noise levels approach (i.e. within 1 dBA the respective NAC) or exceed the NAC or when a substantial noise increase occurs. A substantial noise increase occurs when there is an increase in noise levels of 10 dBA or more for the design year over existing levels as a direct result of the transportation improvement.

A field review of the project corridor and a review of available aerial mapping were conducted to identify the noise sensitive receptor sites that may be impacted by traffic noise associated with the proposed improvements. Typical noise sensitive receptors include residences, parks, schools, hospitals, and churches. Noise sensitive sites represent any property (owner occupied, rented, or leased) where frequent exterior human use occurs and where a lowered noise level would be of benefit.

3.2 Field Measurements of Existing Noise Levels

Based on the results of the field review and a review of available mapping, five (5) locations were selected as representative noise sensitive sites within the US 60 study area (see Figure 3, Build Alternatives). The sites that were selected for existing noise measurements are described briefly in Table 2, Identification and Description of Receptor Site Locations.

Ambient noise measurements were taken using a Larson Davis 831 (type 1) sound level meter on October 22nd and 23rd, 2018. The meter was calibrated to be in tolerance of the manufacturer's specification on June 7, 2018. The procedures used to measure existing noise levels were conducted in accordance with the methodology established by the Federal Highway Administration (FHWA) and documented in *Report No. DP-96-046*, *Measurement of Highway-Related Noise: Final Report, May 1996*.

In order to represent the Leq(h), noise measurements were performed in 15 minute intervals and were taken 5 feet above the ground. The measurements were conducted during peak and non-peak hours of free-flow traffic conditions and measurements were taken under meteorologically acceptable conditions. Prior to measurements, the sound level meter was calibrated using an acoustical calibrator. Dates, times, traffic data and measured noise levels for each of the monitoring sites are shown in **Table 3**, **Existing Noise Levels (dBA Leq)**. Monitoring locations are described in more detail in **Appendix A**.

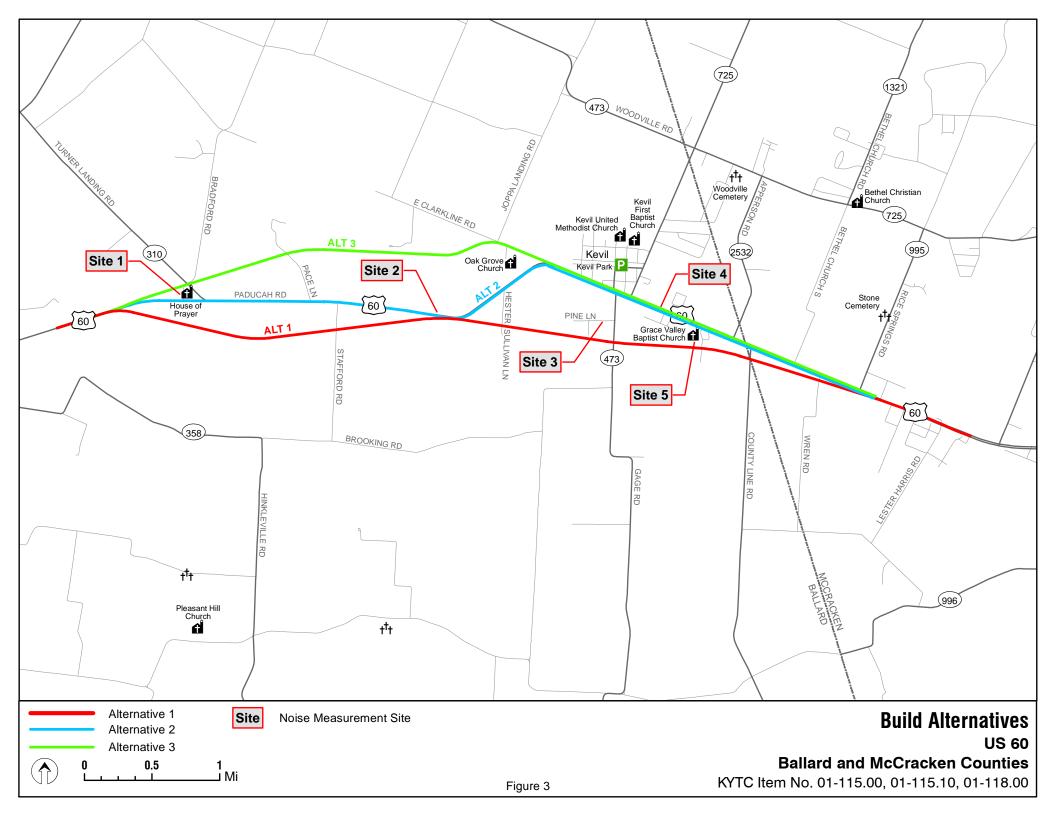


Table 2: Identification and Description of Receptor Site Locations

Noise Reading Site Location and Activity Category	NAC	Description	Total Receptors ¹
1 B/C – Church	67	This site represents the House of Prayer located on US 60 (Paducah Road) at the west end of the project near the intersection of US 310. The site also represents the exterior area of the church (picnic tables).	1 church/4 residences
2 B – Residential	67	This site represents a single-family residence located at 7948 US 60 (Paducah Road). This site also represents approximately 5-6 other residences along US 60.	7
3 B – Residential	67	This site represents a single-family residence just north of Pine Lane and where the proposed build alternative alignment would cross KY 473 (Gage Road). This site also represents approximately 3 other residences.	4
4 B - Residential	67	This site represents a single-family residence on US 60 (Paducah Road) adjacent to the West Kentucky Technology Park. This site also represents approximately 9 other residences along US 60.	10
5 B/C – Church	67	This site represents the Grace Valley Independent Baptist Church located on US 60 (Kentucky Avenue) at the east end of the project near the intersection of Amy Lynn Road.	1 church/5 residences

Traffic data was simultaneously recorded during the 15-minute noise measurements and was classified into five (5) vehicle types, automobiles, medium trucks, heavy trucks, buses and motorcycles, for subsequent entry into the TNM noise prediction computer model. Vehicle speed observations while driving the existing roads and posted speed limits along the roads were used to obtain average travel speeds for each vehicle type. Since all noise levels for this report are based on a one-hour period, the field recorded traffic volumes were adjusted upward to reflect hourly volumes. The traffic data along with the existing and proposed road geometry were used as input to the TNM model to predict noise levels at each of the sites.

¹ Total number of receptors represented by the study site, including the study site receptor.

Table 3
US 60 Improvements
Existing Noise Levels (dBA Leq)

Site					Direction			Н	ourly Traffic	Based on (Concurrent T	raffic Cour	nts			Managed
Number	Receptor	Date	Time Period	Event No.	(NB/SB or EB/WB)	Autos	MT	нт	Bus	MC	Autos	MT	нт	Bus	МС	Measured Leq
1	House of Prayer	10/23/2018 10/23/2018	AM Peak 9:11 - 9:26 am 9:26 - 9:42 am	LxT_015 LxT_016	EB/WB EB/WB	144 168	12 8	20 56	0 0	0 4	100 56	20 12	52 16	0 0	0 0	64.6 64.9
		10/23/2018 10/23/2018	midday 1:21 - 1:36 pm 1:36 - 1:51 pm	LxT_023 LxT_024	EB/WB EB/WB	108 112	20 16	24 16	0 0	0 0	120 124	20 4	40 20	4 0	0 0	64.0 64.3
		10/22/2018 10/22/2018	PM Peak 3:00 - 3:15 pm 3:15 - 3:30 pm	LxT_001 LxT_002	EB/WB EB/WB	268 248	28 16	48 32	0 0	12 4	192 216	24 4	40 8	0 0	0 0	69.0 64.6
2	7948 US 60 residence	10/23/2018	AM Peak 8:48 - 9:03 am	LxT_014	EB/WB	128	12	12	4	0	60	0	56	0	0	65.8
		10/23/2018	midday 12:58 - 1:13 pm	LxT_022	EB/WB	72	12	12	0	4	72	12	16	4	0	61.2
		10/22/2018	PM Peak 3:48 - 4:03 pm	LxT_003	EB/WB	152	28	12	0	0	232	8	28	0	0	64.1
3	Pine Lane residences	10/23/2018	AM Peak 8:19 - 8:35 am	LxT_013	NB/SB	-	-	-	-	-	-	-	-	-	-	46.4
		10/23/2018	midday 12:35 - 12:50 pm	LxT_021	NB/SB	-	-	-	-	-	-	-	-	-	-	45.6
		10/22/2018	PM Peak 4:14 - 4:29 pm	LxT_004	NB/SB	-	-	-	-	-	-	-	-	-	-	52.3
4	West Kentucky Technology Park residences	10/23/2018 10/23/2018	AM Peak 7:41 - 7:57 am 7:57 - 8:12 am	LxT_011 LxT_012	EB/WB EB/WB	360 292	8 16	20 4	4 0	0	148 168	16 0	20 32	4 0	0	61.5 61.8
		10/23/2018 10/23/2018	Midday 11:54 - 12:09 pm 12:09 - 12:24 pm	LxT_019 LxT_020	EB/WB EB/WB	192 180	8 8	24 24	0 0	8 0	184 180	24 20	20 28	0 0	0 0	60.0 62.8
		10/22/2018 10/22/2018	PM Peak 4:39 - 4:54 pm 4:54 - 5:10 pm	LxT_005 LxT_006	EB/WB EB/WB	252 216	12 8	20 8	0 0	0 0	380 416	36 8	36 12	4 0	0 0	62.4 60.1
5	Grace Valley Independent Baptist Church	10/23/2018 10/23/2018	AM Peak 7:05 - 7:20 am 7:20 - 7:35 am	LxT_009 LxT_010	EB/WB EB/WB	312 416	8	12 12	0	0	208 272	16 4	20 16	0 4	0	63.5 63.5
		10/23/2018 10/23/2018	Midday 11:15 - 11:31 am 11:31 - 11:48 am	LxT_017 LxT_018	EB/WB EB/WB	192 156	8 20	12 20	0 0	0 0	148 200	8 12	24 20	0 0	0 0	61.1 60.9
		10/22/2018 10/22/2018	PM Peak 5:19 - 5:34 pm 5:34 - 5:49 pm	LxT_007 LxT_008	EB/WB EB/WB	176 172	16 4	24 16	0 4	0 0	384 268	12 12	16 24	0 0	8 0	62.8 62.7

Climatological data (average wind speed, relative humidity, and temperature) were measured in the field using a Nielsen-Kellerman Kestrel® 3000 Pocket Weather Meter. Weather readings were taken at the time the noise measurements were taken. The Kestrel 3000 uses a hermetically sealed thermistor accurate to $\pm 1^{\circ}$ C to measure temperature, a silicon-based capacitive sensor accurate to $\pm 3\%$ to measure humidity, and a 25 mm-diameter impeller on sapphire bearings to provide wind speeds from 0.7 to 89 mph with an accuracy of $\pm 3\%$.

As shown in **Table 3**, measured noise levels in the project area range from 45.6 dBA Leq for Site 3 located north of Pine Lane where the proposed build alternative alignment crosses SR 473 (Gage Road) to a PM reading of 69.0 dBA Leq at Site 1 (House of Prayer) near the western terminus of the project. This reading was considered to be unusually high compared to other readings recorded at this location. Site 1 represents both the church's exterior area (Activity Category C) and approximately 4 nearby residential land uses. There are picnic tables and a playground area at the church, which represent areas of exterior use. The PM reading does exceed the 67 dBA Leq NAC but for the remaining sites, existing noise levels do not approach or exceed the respective NAC criteria.

3.3 TNM Model Validation

Existing noise levels were measured directly by a sound level meter to establish ambient noise levels at those representative locations along existing roadways where traffic noise was considered the predominant noise source. Existing noise levels were also measured by a sound level meter to validate the noise prediction model. In accordance with 23 CFR 772.11(d)(2), FHWA requires validating predicted values with actual measured levels to verify the accuracy of the noise model to predict existing or future noise levels.

The noise model is validated on a site-specific basis by comparing existing noise levels with the model predictions based upon traffic counts obtained during noise measurement periods. Additional adjustments are applied to the model as part of the validation process to account for speed, site distance from the roadway, grade, length of roadway segment, and shielding. The differences obtained are used to determine site peculiarities for existing and predicted noise levels for which the model might not account for. TNM estimates vehicle noise emissions based on reference energy mean emission levels for five classes of vehicles: motorcycles, automobiles and

light trucks, buses, medium trucks (with two axles and six wheels), and heavy trucks (with three or more axles).

The model is considered validated when modeled noise levels using TNM are within +/- 3.0 dBA Leq for all measured sites. Model validation was performed for Sites 1, 2, 4 and 5 where existing traffic was observed and considered to be the predominant noise source. As shown in **Table 4**, the measured noise levels were within +/- 2.9 dBA Leq of the modeled noise levels. Based on the acceptable minor differences between measured and modeled existing noise levels, it was assumed that the TNM noise model was validated and therefore capable of predicting future noise levels for this project.

Table 4
US 60 Improvements
TNM 2.5 Model Validation Results (dBA Leq)

						Existing N	Noise Levels		
Site Number	Receptor Name	Time Period	Activity Category	Noise Abatement Criteria (dBA Leq)	Measured (dBA Leq)	Modeled (dBA Leq)	Difference (+/-)	Criterion Exceedance	Receptors Represented
1	House of Prayer	AM Peak 9:11 - 9:26 am 9:26 - 9:42 am	B/C	67	64.6 64.9	64.8 64.4	0.2 -0.5	no no	1 church/4 residences
		midday 1:21 - 1:36 pm 1:36 - 1:51 pm			64.0 64.3	64.6 62.6	0.6 -1.7	no no	
		PM Peak 3:00 - 3:15 pm 3:15 - 3:30 pm			69.0 64.6	66.4 64.0	-2.6 -0.6	no no	
2	7948 US 60 Residence	AM Peak 8:48 - 9:03 am	В	67	65.8	66.3	0.5	no	7 residences
		midday 12:58 - 1:13 pm			61.2	64.1	2.9	no	
		PM Peak 3:48 - 4:03 pm			64.1	66.2	2.1	no	
4	West Kentucky Technology Park Residences	AM Peak 7:41 - 7:57 am 7:57 - 8:12 am	В	67	61.5 61.8	62.3 61.4	0.8 -0.4	no no	10 residences
		Midday 11:54 - 12:09 pm 12:09 - 12:24 pm			60.0 62.8	62.2 62.3	2.2 -0.5	no no	
		PM Peak 4:39 - 4:54 pm 4:54 - 5:10 pm			62.4 60.1	63.6 61.0	1.2 0.9	no no	
5	Grace Valley Independent Baptist Church	AM Peak 7:05 - 7:20 am 7:20 - 7:35 am	в/С	67	63.5 63.5	61.8 62	-1.7 -1.5	no no	1 church/5 residences
		Midday 11:15 - 11:31 am 11:31 - 11:48 am			61.1 60.9	61.1 61.8	0.0 0.9	no no	
		PM Peak 5:19 - 5:34 pm 5:34 - 5:49 pm			62.8 62.7	62.8 62.0	0.0 -0.7	no no	

4.0 PREDICTED NOISE LEVELS

Once TNM 2.5 has been validated, the next step in the highway traffic noise analysis involved a comparison of predicted noise levels for each alternative with the NAC and existing base year noise levels. Traffic noise levels were predicted for the representative noise sensitive receptors for the No-Build and the Build Alternative. In order to simulate a worst case scenario, TNM uses traffic volumes that will produce the noisiest traffic condition likely to occur for the design year. The "worst hourly traffic noise impact" has been determined to generally occur when truck volumes are the greatest and when traffic flow is free-flowing and at or near level of service (LOS) C conditions.

4.1 Traffic Data

Traffic data for the 2040 design year was based on turning movement forecasts provided as contained in **Appendix B.** This data was used to predict future noise levels for the No-Build and Build Alternatives using the TNM computer program. Since proposed US 60 improvements are expected to operate at LOS C or better for the design year, the noise impact analysis associated with the 2040 No-Build and Build Alternatives was based on average daily traffic (ADT) and design hourly volume (DHV) projections (**Table 5**). The existing travel speed used in the TNM analysis was based on posted speed limits in the project area.

4.2 No-Build Alternative

In order to satisfy National Environmental Policy Act (NEPA) requirements, an evaluation of the No-Build scenario was performed. The analysis of the No-Build Alternative was conducted assuming the current roadway configuration and 2040 No-Build traffic data. As shown in **Table 6, Summary of Existing and No-Build Noise Levels (dBA Leq),** the results of the noise analysis conducted for the No-Build Alternative indicate that noise levels will increase from 0.0 to 1.0 dBA Leq over their existing levels. A 3 dBA increase is generally considered to be barely perceptible to the human ear. Approximately 19 modeled receptors for the No-Build Alternative were determined to have predicted noise levels that would approach (within 1 dBA Leq) or exceed the NAC or substantially exceed existing noise levels.

4.3 Build Alternatives

Alternative 1 (Red) would be constructed on new alignment, beginning east of the bridge over Humphrey Creek south of existing US 60 and would end at the improved 4-lane section near

Table 5
US 60 Improvements
Traffic Data Summary

				ting	2040 N	o-Build	2040	Build
	From	То	ADT	DHV	ADT	DHV	ADT	DHV
US 60	MP 12.0	KY 310	5,900	610	7,300	770	7,300	750
US 60	KY 310	KY 473	6,000	620	7,300	770	7,300	750
US 60	KY 473	MP 1.5	7,300	760	9,000	1,160	9,000	1,160
Alternative 1	MP 12.0	KY 473	-	-	-	-	5,200	560
Alternative 1	KY 473	MP 1.5	-	-	-	-	7,000	910

Table 6
US 60 Improvements
Existing and No Build Noise Levels (dBA Leq)

Receptor	# of Receptors Represented	Activity Category	Noise Abatement Criteria (dBA Leg)	Existing	2040 No-Build Alternative	Increase between Existing and No-Build	Approach or Exceedance of NAC
1	1	В	67	63.5	64.5	1.0	no
2	1	В	67	64.9	65.8	0.9	no
3	1	В	67	63.1	64.1	1.0	no
4	1	В	67	56.6	57.6	1.0	no
5	1	В	67	64.6	65.6	1.0	no
6	1	В	67	63.3	64.3	1.0	no
7	1	В	67	64.4	65.3	0.9	no
8	1	В	67	63.6	64.6	1.0	no
9	1	В	67	65.1	66.0	0.9	yes
10	1	С	67	66.7	67.7	1.0	yes
11	1	С	67	68.4	69.4	1.0	yes
12	1	В	67	56.0	56.9	0.9	no
13	1	В	67	62.8	63.7	0.9	no
14	1	В	67	57.8	58.6	0.8	no
16	1	В	67	60.4	61.3	0.9	no
17	1	В	67	56.6	57.4	0.8	no
19	1	В	67	65.0	65.9	0.9	no
21	1	В	67	65.9	66.7	0.8	yes
22	1	В	67	53.9	54.8	0.9	no
23	1	В	67	67.5	68.3	0.8	yes
24	1	В	67	68.0	68.8	0.8	yes
25	1	В	67	45.5	46.4	0.9	no
27	1	В	67	64.6	65.4	0.8	no
28	1	В	67	64.3	65.1	0.8	no
29	1	В	67	62.5	63.3	0.8	no
30	1	В	67	60.2	61.1	0.9	no
31	1	В	67	64.6	65.5	0.9	no
32	1	В	67	66.4	67.2	0.8	yes
33	1	В	67	63.9	64.7	0.8	no
34	1	В	67	60.7	61.6	0.9	no
35	1	В	67	64.6	65.5	0.9	no
36	1	В	67	64.3	65.1	0.8	no
37	1	В	67	64.2	65.1	0.9	no
38	1	В	67	63.1	63.9	0.8	no
39	1	В	67	62.9	63.7	0.8	no
40	1	В	67	52.0	52.9	0.9	no
42	1	В	67	45.9	46.8	0.9	no
43	1	В	67	45.3	46.1	0.8	no
44	1	В	67	43.1	44.0	0.9	no
45	1	В	67	42.6	43.4	0.8	no
47	1	В	67	42.0	42.8	0.8	no
48	1	В	67	42.2	43.0	0.8	no
49	1	В	67	41.3	42.1	0.8	no
50	1	В	67	40.8	41.5	0.7	no
51	1	В	67	40.1	40.8	0.7	no
52	1	В	67	39.8	40.5	0.7	no
54	1	В	67	62.0	62.9	0.9	no
55	1	В	67	62.1	63.1	1.0	no
56	1	В	67	66.9	67.6	0.7	yes
57 50	1	В	67	63.0	63.8	0.8	no
58	1	В	67	53.9	54.9	1.0	no
60	1	В	67	65.7	66.5	0.8	yes
61	1	В	67	60.4	61.0	0.6	no
62	1	В	67 67	60.4	61.0	0.6	no
63	1	В	67	62.4	62.9	0.5	no

Table 6
US 60 Improvements
Existing and No Build Noise Levels (dBA Leq)

	# of Receptors	Activity	Noise Abatement		2040 No-Build	Increase between	Approach or Exceedance of
Receptor	Represented	Category	Criteria (dBA Leq)	Existing	Alternative	Existing and No-Build	NAC
64	1	Е	72	66.3	66.8	0.5	yes
65	1	Е	72	65.2	65.6	0.4	no
66	1	В	67	43.5	44.2	0.7	no
67	1	В	67	43.1	43.7	0.6	no
68	1	В	67	42.7	43.4	0.7	no
69	1	В	67	42.3	43.0	0.7	no
70	1	В	67	42.0	42.7	0.7	no
71	1	В	67	41.3	42.0	0.7	no
72	1	В	67	41.8	42.4	0.6	no
73	1	В	67	41.3	41.9	0.6	no
74	1	В	67	40.9	41.6	0.7	no
75	1	В	67	40.1	40.8	0.7	no
77	1	В	67	39.7	40.4	0.7	no
78	1	В	67	38.9	39.6	0.7	no
79	1	В	67	38.7	39.4	0.7	no
80	1	В	67	38.8	39.5	0.7	no
82	1	В	67	64.8	65.2	0.4	no
83	1	В	67	65.9	66.4	0.5	yes
84	1	В	67	63.4	63.9	0.5	no
85	1	В	67	65.5	66.0	0.5	yes
86	1	В	67	64.8	65.3	0.5	no
87	1	В	67	64.5	64.9	0.4	no
88	1	В	67	64.7	65.1	0.4	no
89	1	В	67	64.7	65.1	0.4	no
91	1	В	67	62.9	63.3	0.4	no
92	1	В	67	64.1	64.5	0.4	no
93	1	В	67	64.6	65.1	0.5	no
95	1	В	67	63.0	63.5	0.5	no
96	1	В	67	66.6	67.1	0.5	yes
98	1	В	67	43.8	44.3	0.5	no
100	1	В	67	61.8	62.2	0.4	no
101	1	В	67	55.6	56.1	0.5	no
102	1	В	67	48.3	48.8	0.5	no
103	1	В	67	44.6	45.1	0.5	no
104	1	В	67	43.7	44.2	0.5	no
105	1	В	67	43.1	43.6	0.5	no
106	1	В	67	43.3	43.8	0.5	no
107	1	В	67	59.9 60.0	60.4	0.5	no
108	1	В	67 67	60.0	60.4	0.4	no
109 110	1	В	67	60.8	61.3	0.5	no
110	1	В	67 73	60.5	61.0	0.5	no
111	1	E	72 67	64.5	65.0 60.1	0.5	no
112	1	В	67	59.7	60.1	0.4	no
113 114	1	В	67 67	62.8	63.3 45.7	0.5	no
114 115	1	B B	67 67	45.3 63.1	45.7 63.6	0.4 0.5	no
115	1	В	67 67	66.7	63.6 67.2	0.5	no
117	1 1	В	67 67	41.6	42.5	0.5	yes
119		В	67 67	41.6 41.2	42.5 42.0	0.9	no
120	1		67 67	41.2 40.3	42.0 41.1	0.8	no
121	1	B B	67 67	40.3 40.0	41.1 40.8	0.8	no
122	1	В	67 67	40.0 40.4	40.8 41.2	0.8	no
123	1 1	В	67 67	40.4 41.0	41.2 41.9	0.8	no
124	1	В	67 67	41.0	43.6	0.9	no no
125	1	В	67 67	42.8 46.2	43.6 47.1	0.8	no no

Lester Harris Road. Based on its proposed alignment, predicted noise levels for Alternative 1 will range from 38.9 to 74.0 dBA Leq. Two (2) modeled receptors, Receptor Nos. 51 and 98 were determined to have future noise levels that would approach (within 1 dBA Leq) or exceed the 67 dBA Leq NAC (see Table 7, Summary of Predicted Noise Levels, dBA Leq). Receptor No. 98 represents a single-family residence located on a long driveway off US 60 (Kentucky Avenue) between Freedom Boulevard and Amy Lynn Road (see Figure 4, Noise Receptor Sites). The next highest noise levels were predicted for Receiver 51 (66.5 dBA). Based on a review of aerial mapping, Receptor No. 51 is a farm building located at the end of Pine Lane and does not appear to be a residential structure. As anticipated with a new roadway constructed through a rural environment, predicted noise levels for approximately 17 receptors would substantially exceed (> 10 dBA Leq) their existing noise levels.

Alternative 2 (Blue) primarily follows the existing US 60 alignment beginning east of the bridge over Humphrey Creek. The proposed cross-section is a 4-lane divided rural highway with a 5-lane urban section through Kevil. Predicted noise levels for Alternative 2 will range from 39.4 to 75.4 dBA Leq for Receptor 32. Receptor No. 32 represents a single-family residence located on the south side of US 60 (Paducah Road) approximately 370 feet east of the Eagles Nest Plantation entrance. Predicted noise levels for two (2) receptors would substantially exceed (> 10 dBA Leq) their existing noise levels.

Alternative 3 (Green) begins east of the bridge over Humphrey Creek, while creating a new route along the old railroad bed west of Kevil. The alignment then generally follows the existing US 60 alignment through Kevil to the east. The assumed cross-section is a 4-lane divided rural highway with a 5-lane urban section through Kevil. Predicted noise levels for Alternative 3 will range from 38.7 to 72.3 dBA Leq for Receptor 125. Receptor No. 125 represents a single-family residence located Predicted noise levels for six (6) receptors would substantially exceed (> 10 dBA Leq) their existing noise levels.

Table 7
US 60 Improvements
Summary of Predicted Noise Levels (dBA Leq)

			Noise			Predicted Noise	Levels (dBA Leq)	
	# of Receptors	Activity	Abatement Criteria (dBA	Existing Noise	2040 No-Build	2040 Build	2040 Build	2040 Build
Receptor	Represented	Category	Leq)	Levels	Alternative	Alternative 1	Alternative 2	Alternative 3
1	1	В	67	63.5	64.5	59.8	64.3	63.5
2	1	В	67	64.9	65.8	61.2	66.1	62.9
3	1	В	67	63.1	64.1	59.8	67.9	60.6
4	1	В	67	56.6	57.6	54.5	60.5	54.4
5	1	В	67	64.6	65.6	60.9	65.6	61.9
6	1	В	67	63.3	64.3	59.6	64.5	60.6
7	1	В	67	64.4	65.3	60.7	65.3	61.2
8	1	В	67	63.6	64.6	59.9	64.7	60.4
9	1	В	67	65.1	66.0	61.4	72.4	61.5
10	1	C	67	66.7	67.7	63.1	67.3	63.3
11	1	C	67	68.4	69.4	64.9	68.6	65.0
12	1	В	67	56.0	56.9	52.1	59.2	52.3
13	1	В	67	62.8	63.7	58.7	67.9	58.8
14	1	В	67	57.8	58.6	53.5	58.9	53.8
16	1	В	67	60.4	61.3	56.3	61.7	56.3
17	1	В	67	56.6	57.4	52.3	59.2	52.3
19	1	В	67	65.0	65.9	60.6	71.1	60.6
21	1	В	67	65.9	66.7	61.4	74.1	63.9
22	1	В	67	53.9	54.8	50.8	55.7	49.5
23	1	В	67	67.5	68.3	63.6	65.1	63.6
24	1	В	67	68.0	68.8	64.0	64.9	64.0
25	1	В	67	45.5	46.4	47.4	41.9	38.7
27	1	В	67	64.6	65.4	60.7	63.4	60.5
28	1	В	67	64.3	65.1	60.4	63.6	60.2
29	1	В	67	62.5	63.3	58.6	66.4	58.3
30	1	В	67	60.2	61.1	57.1	62.0	56.1
31	1	В	67	64.6	65.5	61.3	64.7	60.5
32	1	В	67	66.4	67.2	63.1	75.4	62.5
33	1	В	67	63.9	64.7	61.8	69.1	59.9
34	1	В	67	60.7	61.6	58.2	60.8	56.1
35	1	В	67	64.6	65.5	62.3	63.7	60.6
36	1	В	67	64.3	65.1	62.3	63.5	60.2
37	1	В	67	64.2	65.1	63.0	63.3	60.2
38	1	В	67	63.1	63.9	62.5	62.4	58.9
39	1	В	67	62.9	63.7	60.6	62.8	58.5
40	1	В	67	52.0	52.9	54.6	56.4	48.1
42	1	В	67	45.9	46.8	57.1	48.2	43.0
43	1	В	67	45.3	46.1	48.4	47.6	42.6
44	1	В	67	43.1	44.0	45.9	45.1	40.9
45	1	В	67	42.6	43.4	53.3	44.7	40.6
47	1	В	67	42.0	42.8	48.0	43.3	42.4
48	1	В	67	42.2	43.0	47.8	43.3	42.4
49	1	В	67	41.3	42.1	51.9	42.4	41.8
50	1	В	67	40.8	41.5	58.2	41.8	41.0
51	1	В	67	40.1	40.8	66.5	41.1	40.1
52	1	В	67	39.8	40.5	58.6	40.7	39.8
54 	1	В	67	62.0	62.9	56.7	73.2	63.4
55	1	В	67	62.1	63.1	56.8	72.8	64.0
56	1	В	67	66.9	67.6	61.5	66.1	67.6
57	1	В	67	63.0	63.8	57.7	61.7	62.8
58	1	В	67	53.9	54.9	49.0	57.9	55.1
60	1	В	67	65.7	66.5	60.4	67.7	67.6
61	1	В	67	60.4	61.0	54.7	60.6	60.6
62	1	В	67	60.4	61.0	54.4	60.7	60.6
63	1	В	67	62.4	62.9	55.9	62.5	62.5
64	1	E	72	66.3	66.8	59.4	68.5	68.5
65	1	E	72	65.2	65.6	58.3	67.6	67.6
66	1	В	67	43.5	44.2	47.6	44.4	44.1

Table 7
US 60 Improvements
Summary of Predicted Noise Levels (dBA Leq)

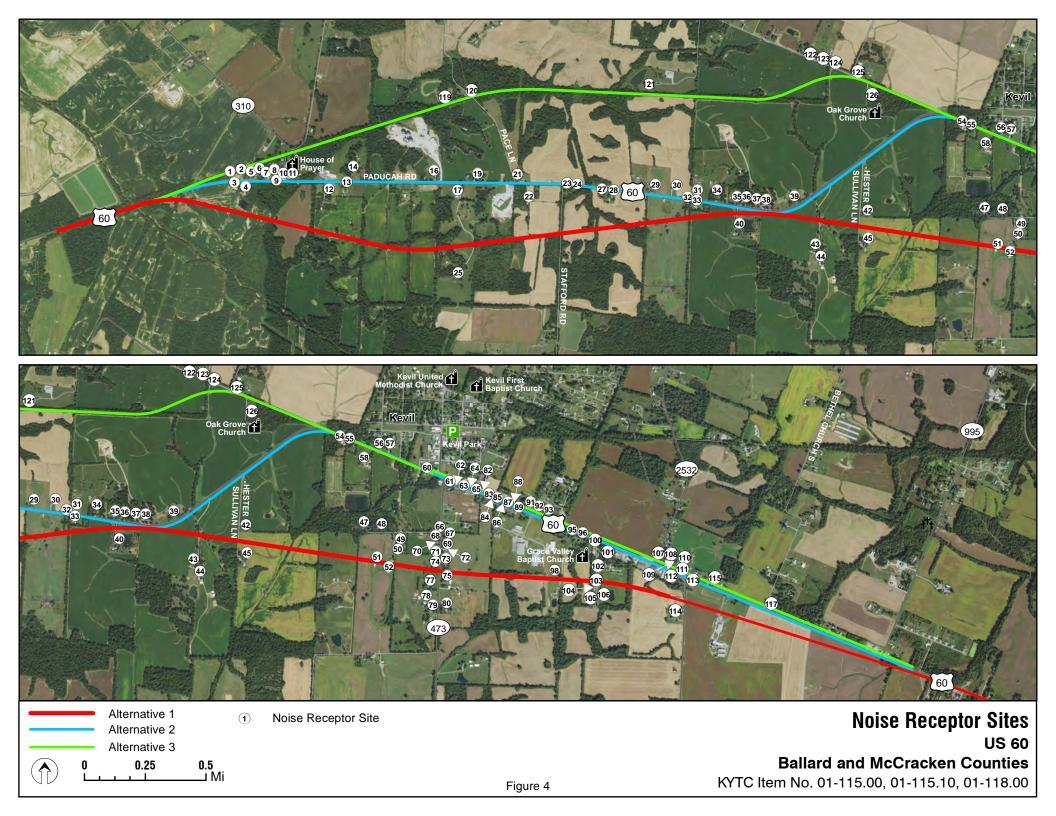
			Noise			Predicted Noise	Levels (dBA Leq)	
Receptor	# of Receptors Represented	Activity Category	Abatement Criteria (dBA Leq)	Existing Noise Levels	2040 No-Build Alternative	2040 Build Alternative 1	2040 Build Alternative 2	2040 Build Alternative 3
67	1	В	67	43.1	43.7	49.2	43.9	43.6
68	1	В	67	42.7	43.4	49.5	43.6	43.3
69	1	В	67	42.3	43.0	51.7	43.1	42.8
70	1	В	67	42.0	42.7	51.9	42.8	42.5
71	1	В	67	41.5	42.1	55.6	40.7	39.9
72	1	В	67	41.8	42.4	54.7	42.5	42.2
73	1	В	67	41.3	41.9	59.4	42.0	41.6
74	1	В	67	40.9	41.6	63.2	41.7	41.3
75	1	В	67	40.1	40.8	59.1	40.9	40.4
77	1	В	67	39.7	40.4	53.7	40.4	39.8
78	1	В	67	38.9	39.6	47.6	39.6	38.9
79	1	В	67	38.7	39.4	46.3	39.4	38.7
80	1	В	67	38.8	39.5	47.0	39.5	38.9
82	1	В	67	64.8	65.2	57.2	67.1	67.1
83	1	В	67	65.9	66.4	58.1	68.5	68.5
84	1	В	67	63.4	63.9	55.8	65.5	65.5
85	1	В	67	65.5	66.0	57.7	68.4	68.4
86	1	В	67	64.8	65.3	57.0	67.4	67.4
87	1	В	67	64.5	64.9	56.6	66.3	66.3
88	1	В	67	64.7	65.1	56.8	66.8	66.8
89	1	В	67	64.7	65.1	56.9	66.8	66.8
91	1	В	67	62.9	63.3	55.4	62.0	62.1
92	1	В	67	64.1	64.5	56.5	63.0	63.0
93	1	В	67	64.6	65.1	56.8	63.0	63.0
95	1	В	67	63.0	63.5	56.1	63.3	63.3
96	1	В	67	66.6	67.1	59.4	67.3	67.2
98	1	В	67	43.8	44.3	74.0	45.0	44.8
100	1	В	67	61.8	62.2	55.9	60.2	60.2
101	1	В	67	55.6	56.1	53.7	56.2	56.2
102	1	В	67	48.3	48.8	59.9	49.3	49.3
103	1	В	67	44.6	45.1	62.4	45.6	45.5
104	1	В	67	43.7	44.2	57.3	44.7	44.6
105	1	В	67	43.1	43.6	54.7	43.9	43.9
106	1	В	67	43.3	43.8	54.8	44.1	44.0
107	1	В	67	59.9	60.4	56.1	60.4	60.4
108	1	В	67	60.0	60.4	56.1	60.4	60.4
109	1	В	67	60.8	61.3	56.7	60.9	60.9
110	1	В	67	60.5	61.0	56.5	60.5	60.5
111	1	E	72	64.5	65.0	59.9	65.1	65.1
112	1	В	67	59.7	60.1	58.0	58.7	58.8
114	1	В	67	45.3	45.7	54.6	42.9	42.9
120	1	В	67	41.2	42.0	40.3	43.4	71.4
121	1	В	67	40.3	41.1	40.1	42.3	59.2
122	1	В	67	40.0	40.8	38.9	41.0	51.5
123	1	В	67	40.4	41.2	39.3	41.3	54.0
124	1	В	67	41.0	41.9	39.8	42.1	59.1
125	1	В	67	42.8	43.6	40.8	44.1	72.3
126	1	В	67	46.2	47.1	43.2	47.8	54.1
						18 impacted	23 impacted	16 impacted
						receptors	receptors	receptors

- Receptors with impacts

- substantial impact (> 10 dBA Leq)

- approach or exceedance

59.9 **71.4**



5.0 TRAFFIC NOISE IMPACTS

As defined by the KYTC *Noise Analysis and Abatement Policy,* dated July 1, 2015, a traffic noise impact is considered to occur when either of the following is determined:

- 1) The noise level predicted for the design year approaches or exceeds the NAC as established in 23 CFR 772. "Approach" is defined as within 1 dBA for the land use category affected as shown in Table 1.
- 2) A substantial increase over existing noise levels is predicted for the design year. A substantial increase is defined as an increase in noise levels of 10 dBA or more. This criterion is independent of the NAC and may result in a defined noise impact even though the NAC may not be approached or exceeded.

Based on TNM modeling, design year (2040) traffic data and the most current design files for the US 60 improvements, traffic noise impacts are predicted to occur as a result of the construction of all 3 build alternatives. These impacts are described as follows:

Alternative 1 - Predicted noise levels will range from 38.9 to 74.0 dBA Leq. Two (2) modeled receptors, Receptor Nos. 51 and 98 were determined to have future noise levels that would approach (within 1 dBA Leq) or exceed the 67 dBA Leq NAC. Both of these receptors have been identified as potentially relocated or displaced by the proposed alignment. Predicted noise levels for Receptor No. 51 and approximately 16 other receptors would substantially exceed (> 10 dBA Leq) their existing noise levels. Upon review of these receptor locations, two (2) of the receptors are considered as isolated residences and eleven (11) of the receptors would be displaced or relocated by the project.

Alternative 2 - Predicted noise levels will range from 39.4 to 75.4 dBA Leq. Approximately 23 receptors were determined to have future noise levels that would approach or exceed their NAC. Most of these occur along existing US 60 through Kevil. Upon review, approximately 16 receptors would potentially be displaced or relocated by the widening improvements with at least 3 receptors representing isolated residences. Four (4) of the remaining receptors were located adjacent to US 60 in Kevil and currently have direct access (driveways). Predicted noise levels for two (2) receptors would also substantially exceed (> 10 dBA Leq) their existing noise levels. However, both of these receptors would be displaced or relocated.

Alternative 3 - This alternative begins on new alignment along the old railroad bed west of Kevil but follows the existing US 60 alignment through Kevil identical to Alternative 2. Predicted noise levels for Alternative 3 will range from 38.7 to 72.3 dBA Leq. Approximately 11 receptors were determined to have future noise levels that would approach or exceed their NAC. As identified for Alternative 2, most of these occur along existing US 60 through Kevil. Upon review, approximately seven (7) receptors would potentially be displaced or relocated by the widening improvements. Four (4) of the remaining receptors were located adjacent to US 60 in Kevil and currently have direct access (driveways). Predicted noise levels for four (4) receptors would also substantially exceed (> 10 dBA Leq) their existing noise levels. However, all of these receptors would be considered isolated residences.

6.0 NOISE ABATEMENT CONSIDERATIONS

KYTC has developed a policy consistent with FHWA guidelines to determine the need, feasibility, and reasonableness of noise abatement measures for all major highway projects. In 23 CFR Part 772, FHWA requires that noise abatement measures be considered when traffic noise impacts are identified for Type I Federal projects. The FHWA offers a number of measures for abating or eliminating noise impacts. The primary means of mitigating noise impacts, as offered by the FHWA, are listed as follows:

- Construction of noise barriers including acquisition of property rights, either within or outside the highway right-of-way. Landscaping is not a viable noise abatement measure.
- Traffic management measures including, but not limited to, traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
- Alteration of horizontal and vertical alignments.
- Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development that would be adversely impacted by traffic noise.
- Noise insulation of Activity Category D land use facilities. Post-installation maintenance and operational costs for noise insulation are not eligible for Federal-aid funding.

KYTC is not part of a FHWA approved quiet pavement pilot program and therefore, the use of quiet pavement is not an acceptable option for providing noise abatement for a project.

In accordance with 23 CFR 772.13(c), the following noise abatement measures were considered as a means to reduce or eliminate traffic noise impacts.

Traffic Management Measures: Traffic management measures were not considered feasible for abating noise impacts for this project. Measures such as installation of additional traffic control devices, prohibition of vehicle types, time-use restrictions, speed limit reductions, and exclusive lane designations would be detrimental to the proposed project's ability to function as intended. Restricting truck traffic would be unreasonable, very difficult to enforce, and was considered a disincentive to economic development.

Alteration of Horizontal and Vertical Alignments: KYTC is in the process of integrating noise considerations into the selection of alternatives and into the horizontal and vertical design of highways. The selection of a preferred alignment usually includes shifting the alignment both vertically and horizontally, wherever feasible, to minimize impacts to adjacent land uses. Both vertical and horizontal alignments are altered to minimize noise impacts where other factors are not prohibitive. Since this project consists primarily of interchange improvements, opportunities for altering the vertical and horizontal alignments would be limited. Based on the proposed project's topography, it is likely that the final design would result in noise levels similar to those predicted for this study.

Acquisition of Property Rights or Acquisition of Property: Visual screening in the form of privacy fencing (wood) and/or landscaping may be proposed to help reduce the psychological impacts of the proposed project. However, these measures have been determined not to be as effective as the construction of noise walls and would not be the responsibility of KYTC.

Noise Insulation of Public Use or Nonprofit Institutional Structures: KYTC's policy is consistent with FHWA's interior noise level criteria policy on noise insulation and air conditioning compliance. This noise abatement measure option applies only to public or non-profit institutional use buildings.

Construction of Noise Barriers: KYTC has established a policy for determining the feasibility and reasonableness of when and where barriers should be constructed. In order to be implemented, a noise mitigation measure must be determined to be both feasible and reasonable. These considerations are discussed in more detail as follows:

Feasibility

When determining the acoustic feasibility of a proposed noise abatement measure, KYTC considers whether the measure provides a substantial noised reduction (\geq 5 dBA Leq) for a reasonable number of impacted receptors (minimum of three (3) impacted receptors) to warrant consideration. Therefore, if a proposed barrier does not provide a minimum of 5 dBA reduction for at least 3 impacted receptors, it will not be considered acoustically feasible.

Engineering or constructability issues may render an abatement measure infeasible. In determining if site characteristics are suitable for barrier construction, KYTC considers numerous

factors including safety, maintenance, drainage and accessibility. Engineering judgment may dictate that a barrier is not feasible if:

- 1) A substantial noise reduction (>5 dBA Leq) for three (3) or more impacted receptors is not achievable.
- 2) The barrier poses overriding safety (i.e. visibility or sight distance) issues or maintenance (i.e. drainage or right of way access) problems as determined by the AASHTO Green Book, Roadside Design Guide or Manual of Uniform Traffic Control Devices (MUTCD).

Based on a preliminary noise analysis conducted for the proposed US 60 improvements, traffic noise impacts were predicted to occur for all three build alternatives considered.

Alternative 1 (Red) - Predicted noise levels for Alternative 1 would range from 38.9 to 74.0 dBA Leq. Approximately 18 receptors were determined to have noise impacts but only two (2) receptors would have noise levels that would approach (within 1 dBA Leq) or exceed the 67 dBA Leq NAC. Predicted noise levels for approximately 17 receptors would substantially exceed (> 10 dBA Leq) their existing noise levels. Upon review of these receptor locations, two (2) of the receptors are considered as isolated residences and eleven (11) of the receptors would be displaced or relocated by the project. Based on the location of the remaining receptors with predicted impacts, a substantial noise reduction is not achievable for a reasonable number of impacted receptors. Therefore, noise barriers were not considered acoustically feasible for this alternative and none were proposed.

Alternative 2 (Blue) - Predicted noise levels for Alternative 2 will range from 39.4 to 75.4 dBA Leq. Approximately 23 receptors were determined to have future noise levels that would approach or exceed their NAC. However, 16 receptors would potentially be displaced or relocated by the widening improvements with at least 3 receptors representing isolated residences. Four (4) of the remaining receptors were located adjacent to US 60 in Kevil and currently have direct access (driveways). A proposed barrier at this location would pose overriding sight distance and visibility issues for motorists. Predicted noise levels for two (2) receptors would also substantially exceed (> 10 dBA Leq) their existing noise levels. Both of these receptors would be displaced or relocated. Potential noise barriers were not considered acoustically feasible for this alternative and none were proposed.

Alternative 3 (Green) – Predicted noise levels for Alternative 3 will range from 38.7 to 72.3 dBA Leq. Approximately 11 receptors were determined to have future noise levels that would approach or exceed their NAC. Upon review, approximately seven (7) receptors would potentially be displaced or relocated by the widening improvements. Four (4) of the remaining receptors were located adjacent to US 60 in Kevil and currently have direct access (driveways). As discussed for Alternative 2, a proposed barrier at this location would pose overriding sight distance and visibility issues for motorists. For the section of Alternative 3 on new alignment, predicted noise levels for four (4) receptors would also substantially exceed (> 10 dBA Leq) their existing noise levels. However, all of these receptors would be considered isolated residences. Since a substantial noise reduction would not be achievable for a reasonable number of impacted receptors, noise barriers were not considered acoustically feasible for this alternative and none were proposed.

7.0 SUMMARY AND CONCLUSIONS

A traffic noise impact analysis was conducted for the proposed US 60 improvements. The analysis was performed in accordance with the requirements of Title 23, Part 772 of the Code of Federal Regulations (CFR), "Procedures for Abatement of Highway Traffic Noise and Construction Noise" and the Kentucky Transportation Cabinet's (KYTC) Noise Analysis and Abatement Policy (dated July 1, 2015).

Traffic noise impacts occur when noise levels generated by the proposed project approach or exceed the NAC, or when predicted noise levels substantially exceed (greater than 10 dBA Leq) existing noise levels. Based on TNM modeling, design year (2040) traffic data and the most current design files for project alternatives, traffic noise impacts are predicted to occur as a result of the construction of all 3 build alternatives.

The construction of noise barriers was considered for abating noise impacts generated by the proposed project. KYTC has established a policy for determining the feasibility and reasonableness of when and where barriers should be constructed. In order to be implemented, a noise mitigation measure must be determined to be both feasible and reasonable.

Upon review, Alternative 1 represents an improvement primarily on new alignment. As described by the existing land use, noise sensitive receptors are relatively few and are dispersed and scattered throughout the study corridor. After consideration of potential relocations or displacements by the proposed Alternative 1 alignment, these receptors represent isolated residences in vicinity to the proposed alignment. Substantial noise reduction for a reasonable number of impacted receptors would not be achievable. Construction of noise walls was therefore not considered feasible for Alternative 1.

Alternatives 2 and 3 represent widening improvements to existing US 60 through Kevil. As anticipated, future noise levels are predicted to increase for those sensitive land uses (residences) directly adjacent to the roadway.

For Alternative 2, approximately 23 receptors were determined to have future noise levels that would approach or exceed their NAC. However, 16 receptors would potentially be displaced or relocated by the widening improvements with at least 3 receptors representing isolated

residences. Four (4) of the remaining receptors were located adjacent to US 60 in Kevil and currently have direct access (driveways). A proposed barrier at this location would pose overriding sight distance and visibility issues for motorists. Potential noise barriers were not considered acoustically feasible for this alternative and none were proposed.

Approximately 11 receptors were determined to have future noise levels that would approach or exceed their NAC for Alternative 3. At least seven (7) receptors would potentially be displaced or relocated by the widening improvements. Four (4) of the remaining receptors were located adjacent to US 60 in Kevil and currently have direct access (driveways). As discussed for Alternative 2, a proposed barrier at this location would pose overriding sight distance and visibility issues for motorists. For the section of Alternative 3 on new alignment, predicted noise levels for four (4) receptors would also substantially exceed (> 10 dBA Leq) their existing noise levels. However, all of these receptors would be considered isolated residences. Since a substantial noise reduction would not be achievable for a reasonable number of impacted receptors, noise barriers were not considered acoustically feasible for this alternative and none were proposed.

The opportunities for minimizing traffic noise as a result of the project are limited. Based on a preliminary noise analysis, the construction of noise barriers are not acoustically feasible and therefore, not reasonable for any alternative. Alignment shifts would also likely result in increased environmental impacts, relocations and construction costs. Therefore, additional noise abatement measures were determined not to be effective as described in 23 CFR 772.13(c) and none were proposed.

8.0 INDIRECT AND CUMULATIVE IMPACTS

Indirect impacts are those impacts that are caused by the action and are later in time and further removed in distance, but are still reasonably foreseeable. The purpose of the project is to improve mobility and safety for the US 60 corridor in eastern Ballard County. US 60 is the only east-west arterial link in Kentucky west of Paducah, leading to the only Ohio River highway crossing for an 80-mile stretch. The project is anticipated to have positive indirect impacts as congestion and heavy truck traffic are reduced through Kevil. As a result of this project, noise levels for those residential and sensitive noise land uses may decrease. No known sources of additional traffic, such as the construction of indirect commercial or industrial development, are part of this study. Therefore, the proposed project is not anticipated have any negative indirect impacts on traffic noise.

Cumulative impacts occur when the effects (both direct and indirect) of the action interact with the effects of other actions. Based on a review of the FY 2018 – 2024 Enacted Highway Plan, KYTC plans to improve sections of US 60 from Paducah to east of La Center. These improvements have been accounted for in the US 60 traffic projections and therefore addressed in this study. Therefore, it was assumed there would be no cumulative impacts for this study.

9.0 CONSTRUCTION NOISE

There would be unavoidable short-term noise impacts as a result of project construction. The primary source of noise expected would be generated from construction activities such as earth removal, hauling, grading, and paving. For this project, construction is not anticipated to last for a long period of time. If it is likely that noise construction will persist longer than two years, noise abatement measures may be necessary during construction to restrict noise levels in the vicinity of noise sensitive sites. These measures may include, but are not necessarily limited to the following:

- Provide shielding of equipment with acoustic barriers.
- Restrict certain types of work to specific times during the day.
- Require source control on equipment such as mufflers.
- Other measures to reduce noise impacts.

10.0 COORDINATION WITH LOCAL OFFICIALS

A copy of this traffic noise impact analysis may be made available to the following local officials as part of the coordination efforts to help minimize highway noise related impacts to adjacent properties. Approval of land uses adjacent to a highway that are typically sensitive to noise should be an informed decision-making process. If appropriate, visual screening may be suggested or considered to help reduce the psychological impacts of the project. The final decision on implementation of abatement measures will be made after completion of the project design and the public involvement process, including coordinating with and providing predicted noise information on the Build Alternative to local officials per the KYTC *Noise Analysis and Abatement Policy*.

APPENDIX A

Sound Level Meter Calibration Certificates,
Field Monitoring Data Sheets and Sound Meter Output Data

Calibration Certificate

Certificate Number 2018005268 Customer: The Modal Shop 3149 East Kemper Road Cincinnati, OH 45241, United States

D0001.8378 LxT1 Procedure Number Model Number 0005625 Ron Harris Serial Number Technician Calibration Date 23 May 2018 Test Results Pass

Calibration Due As Manufactured Initial Condition

Temperature 23.42 °C ± 0.25 °C SoundTrack LxT Class 1 Humidity 50.7 %RH ± 2.0 %RH Description Class 1 Sound Level Meter Static Pressure 86.02 kPa ± 0.13 kPa

Firmware Revision: 2,302

Evaluation Method Tested electrically using Larson Davis PRMLxT1 S/N 046882 and a 12.0 pF capacitor to simulate

microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 50.0

mV/Pa.

Compliant to Manufacturer Specifications and the following standards when combined with Compliance Standards

Calibration Certificate from procedure D0001.8384:

ANSI S1.4-2014 Class 1 IEC 60651:2001 Type 1 ANSI S1.4 (R2006) Type 1 IEC 60804:2000 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 17025:2005. 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 9001:2008.

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.

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Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, 1770.01 Rev J Supporting Firmware Version 2.301, 2015-04-30

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

Larson Davis, a division of PCB Piezotronics, Inc. 1681 West 820 North Provo, UT 84601, United States 716-684-0001







Calibration Certificate

Certificate Number 2018005269

Customer:

The Modal Shop

3149 East Kemper Road

Cincinnati, OH 45241, United States

Model Number Serial Number LxT1 0005625

Test Results

Description

Pass

Initial Condition

As Manufactured

SoundTrack LxT Class 1 Class 1 Sound Level Meter

Firmware Revision: 2.302

-

Tested with:

Larson Davis PRMLxT1. S/N 046882

PCB 377B02, S/N 304769 Larson Davis CAL200, S/N 9079 Larson Davis CAL291, S/N 0108

Compliance Standards

Evaluation Method

Compliant to Manufacturer Specifications and the following standards when combined with

Calibration Certificate from procedure D0001.8378:

IEC 60651:2001 Type 1

IEC 60804:2000 Type 1 IEC 61252:2002

IEC 61260:2001 Class 1 IEC 61672:2013 Class 1 ANSI S1.4-2014 Class 1

ANSI S1.4 (R2006) Type 1 ANSI S1.11 (R2009) Class 1

Procedure Number

Calibration Date

Calibration Due

Static Pressure

Temperature

Humidity

Technician

D0001.8384

23 May 2018

%RH

Data reported in dB re 20 µPa.

± 0.25 °C

± 2.0 %RH

± 0.13 kPa

Ron Harris

23.59 °C

85.99 kPa

50.4

ANSI S1.25 (R2007)

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 17025:2005.

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 9001:2008.

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.

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Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, 1770.01 Rev J Supporting Firmware Version 2.301, 2015-04-30

Larson Davis, a division of PCB Piezotronics, Inc 1681 West 820 North Provo, UT 84601, United States 716-684-0001







Certificate Number 2018005269

For 1/4" microphones, the Larson Davis ADP024 1/4" to 1/2" adaptor is used with the calibrators and the Larson Davis ADP043 1/4" to 1/2" adaptor is used with the preamplifier.

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

Periodic tests were performed in accordance with precedures from IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Parl3.

Pattern approval for IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 successfully completed by Physikalisch-Technische Bundesanstalt (PTB) on 2007-10-09 reference number PTB-1.72-4034218.

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part 3, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organization responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013 / ANSI/ASA S1.4-2014/Part 2, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1; the sound level meter submitted for testing conforms to the class 1 specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1.

Description	Standards Used Cal Date	Cal Due	Cal Standard
Larson Davis CAL291 Residual Intensity Calibrator	2017-09-19	2018-09-19	001250
SRS DS360 Ultra Low Distortion Generator	2017-06-23	2018-06-23	006311
Hart Scientific 2626-S Humidity/Temperature Sensor	2017-06-11	2018-06-11	006943
Larson Davis CAL200 Acoustic Calibrator	2017-07-25	2018-07-25	007027
Larson Davis Model 831	2018-02-28	2019-02-28	007182
PCB 377A13 1/2 inch Prepolarized Pressure Microphone	2018-03-07	2019-03-07	007185

Acoustic Calibration

Measured according to IEC 61672-3:2013 10 and ANSI S1.4-2014 Part 3: 10

Mensurement	Test Result [dB] Lo	ower Limit [dB]	Upper Limit [dB]	Expanded Uncertainty [dB]	Result	13.1
1000 Hz	114.00	113.80	114,20	0.14	Pass	

Acoustic Signal Tests, C-weighting

Measured according to IEC 61672-3:2013 12 and ANSI S1.4-2014 Part 3: 12 using a comparison coupler with Unit Under Test (UUT) and reference SLM using slow time-weighted sound level for compliance to IEC 61672-1:2013 5.5; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Expected [dB]	Lower Limit [dB]	Upper Limit [dB]	Expanded - Uncertainty [dB]	Result
125	-0.22	-0.20	-1.20	0.80	0.23	Pass
1000	0.09	0.00	-0.70	0.70	0.23	Pass
8000	-2.83	-3.00	-5.50	-1.50	0.32	Pass

⁻⁻ End of measurement results--

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

40.36

- End of measurement results-

Larson Davis, a division of PCB Piezotronics, Inc 1681 West 820 North Provo, UT 84601, United States 716-684-0001









~Certificate of Calibration~

3149 East Kemper Rd. Cincinnati, OH 45241 Ph: 513-351-9919 Fax: 513-458-2172 www.modalshop.com

Manufacturer: PCB Model Number: 377B02

Serial Number: 100948

Asset ID: Description:

Free-Field Microphone

250 Hz 1 kHz

-27.63-27.7341.52

41.08 mV/Pa

dB re. 1V/Pa

Temperature: Humidity:

Calibration Date:

Customer:

Address:

Due Date:

°F (°C) 73 (23) 55

Jul 31, 2018 15:08:03

TMS Rental

990.9 mbar

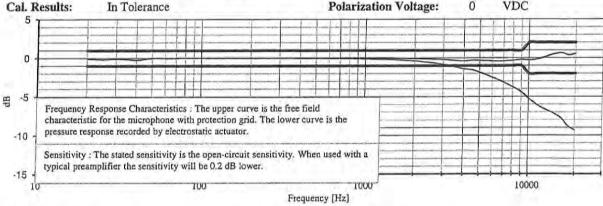
Cal. Results:

Sensitivity:

Ambient Pressure: Polarization Voltage:

0

VDC



Traceability:

The calibration is traceable through NIST Project A1633.

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	Upper	Frequency	Upper	Frequency	Upper	Frequency	Upper
(Hz)	(dB)	(Hz)	(dB)	(Hz)	(dB)	(Hz)	(dB)
20	-0.10	630	0.00	4500	-0.30		
25	-0.17	800	0.03	5000	-0.33		
31.5	-0.08	1000	0.02	5600	-0.38		
40	-0.24	1120	0.02	6300	-0.41		
50	0.01	1250	0.01	7100	-0.40		
63	-0.02	1400	0.00	8000	-0.32		
80	0.02	1600	-0.03	9000	-0.20		
100	0.01	1800	-0.05	10000	-0.26		
125	0.01	2000	-0.07	11200	-0.16		
160	0.00	2240	-0.10	12500	0.12		
200	0.00	2500	-0.13	14000	0.46		
250	0.00	2800	-0.18	16000	0.66		
315	0.01	3150	-0.24	18000	0.37		
400	0.00	3550	-0.33	20000	0.60		
500	0.02	4000	-0.40				

Technician: Ed Devlin

Approval: Throw G. & hi

Reference Equipment Used:

Manuf. Model Serial Cal. Date Due Date 9542 2/22/2018 40AG 2/22/2019 GRAS



CALIBRATION CERT 2649.01

Page 1 of 1

Calibration Certificate

Certificate Number 2018003154

Customer: PCB Piezotronics Inc. 3425 Walden Avenue Depew, NY 14043, US 888-684-0013

CAL200 Model Number 15533 Serial Number Pass Test Results

As Manufactured Initial Condition

Larson Davis CAL200 Acoustic Calibrator Description

Procedure Number Technician

D0001.8386 Scott Montgomery Calibration Date 29 Mar 2018

Calibration Due Temperature Humidity

Static Pressure

± 0.3 °C 36 ±3 %RH %RH 101.0 kPa ±1kPa

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 17025:2005. 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 9001:2008.

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.

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Description	Cal Date	Cal Due	Cal Standard
Agilent 34401A DMM	09/06/2017	09/06/2018	001021
Larson Davis Model 2900 Real Time Analyzer	04/10/2017	04/10/2018	001051
Microphone Calibration System	03/07/2018	03/07/2019	005446
1/2" Preamplifier	10/05/2017	10/05/2018	006506
Larson Davis 1/2" Preamplifier 7-pin LEMO	08/08/2017	08/08/2018	006507
1/2 inch Microphone - RI - 200V	04/24/2017	04/24/2018	006510
Pressure Transducer	06/01/2017	06/01/2018	007310





NOISE RECEPTOR SITE DATA SHEET LX+_00\

Job Name: USGO	Job Number	18403	_ Calibration Cl	neck: 113.90
Receptor Site No:	Event No: All	MPM_	/ Taken By:	JRS
AM Date:	Begin Time:		End Time: _	
PM Date: 10/22/18	Begin Time:	2:59	End Time: _	3:15
Receptor Name: House	of Pray	ev		
Purpose of Receptors: Ambient (\ \ \ \ \		Residences:	4_Other:
Site Description: Church			1	
Intersecting Roadway Name:	the state of the s			<u> </u>
	AM		PM	
Leq (dBA):			69	0.
Traffic Count on Existing Roadw	ay:		east	west
	bound	bound	-> boun	d <u> </u>
Autos:			U	48
Medium Trucks:				6
Heavy Trucks:			15-	10
Buses:			_3_	
Motorcycles:				
Distance from Existing Road:	75 Height	Above of Belo	w Existing Roa	id:
Existing Speed Limit: 55	mph Ave	rage Speed of	Vehicles:	50 mph
Is the road at a grade:				1
Will this receptor need a driveway	to the proposed i	road:	yes	
Weather: AM: Temp (F)	RF	I%	Wind Speed	MPH
PM: Temp (F)	46.2 RF	1 36 %	Wind Speed	. Le_MPH
NOTES: Non-traffic noise (airplan receptor AM:	nes, dogs, cars on	side road, etc.), foliage, terra	in between road and
PM: loud tractor to	vailer			
Both:				
77171				

File Name on Meter LxT_Data.001

File Name on PC SLM_0005625_LxT_Data_001.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-22
 14:59:59

 Stop
 2018-10-22
 15:15:05

 Duration
 00:15:05.4

 Run Time
 00:15:05.4

Pause 00:00:00.0

Pre Calibration 2018-10-22 14:45:43

Post Calibration None

Calibration Deviation

Overall Settings

RMS Weight A Weighting Z Weighting **Peak Weight** Detector Slow PRMLxT1 Preamp Off **Microphone Correction** Exponential Integration Method Low **OBA Range** 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting Z** Weighting Bin Max **OBA Max Spectrum** Overload 146.4

Under Range Peak 102.7

Under Range Limit 51.7
Noise Floor 38.5

Results

LASeq	69.0
LASE	98.6
EAS	798.078
EAS8	25.386
EAS40	126.931
LZSpeak (max)	2018-10-22 15:04:30

NOISE RECEPTOR SITE DATA SHEET LX+_00>

Receptor Site No:	Event No: AM	PM / Taken By: TRS	_
AM Date:	Begin Time:	End Time:	
PM Date: 10/22/	18 Begin Time: 3'15	5 End Time: 3:30	
Receptor Name:	rouse of Prayer		
		Jo. of Residences:Other: _	1
	and the second s	tobles swings	
Intersecting Roadway Nan		J	
micersecting Roadway Ivan	AM	PM	
Leq (dBA):		<u></u>	
Traffic Count on Existing I	Roadway:	east west	
	bound bound	bound bo	und
Autos:		54	
Medium Trucks:		4_	
leavy Trucks:			
uses:			
Iotorcycles:			
sistance from Existing Roa	d: 75 Height Above o	or Below Existing Road:	
		eed of Vehicles: 50 mph	F
		Annual Control of the	
the road at a grade:	Percent Slope:	Which way is it inclining: west	_
ill this receptor need a dri	veway to the proposed road:	yes	_
eather: AM: Ten	np (F) RH	% Wind SpeedMPH	
		% Wind Speed\.9MPH	
		ad, etc.), foliage, terrain between ro	ad a
VI			
	ck on side road	3:24 pm	

File Name on Meter LxT_Data.002

File Name on PC SLM_0005625_LxT_Data_002.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

Jim Smith User Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

Start 2018-10-22 15:15:12 2018-10-22 15:30:16 Stop Duration 00:15:03.5 **Run Time** 00:15:03.5

Pause 0.00:00.0

Pre Calibration 2018-10-22 14:45:39

Post Calibration None

Calibration Deviation

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Detector Slow Preamp PRMLxT1 Off **Microphone Correction** Exponential Integration Method Low **OBA Range** 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting** Z Weighting **OBA Max Spectrum** Bin Max

146.4 Overload **Under Range Peak** 102.7 51.7

Noise Floor 38.5

Results

Under Range Limit

LASeq	64.6
LASE	94.2
EAS	290.557
EAS8	9.262
EAS40	46.309

2018-10-22 15:22:22 LZSpeak (max)

NOISE RECEPTOR SITE DATA SHEET LX _ 003

Job Name: USGO	Job Numbe	er: 18402	_ Calibration Chec	k: 113.90
Receptor Site No:	Event No: A	MPM_	✓ Taken By: _	JRS
AM Date:	_ Begin Time:		End Time:	
PM Date: 10/22/18	Begin Time:	3.48	End Time:	1:03
Receptor Name: Syni	th's resid	ence		
Purpose of Receptors: Ambien	nt Only (Y or N): _	No. of	Residences: 6-7	Other:
Site Description: 792	48 VSUC) from	t residence	
Intersecting Roadway Name: _	VS U	0		
	AM		<u>PM</u>	
Leq (dBA):			64.1	
Traffic Count on Existing Road	lway:		->	-
	bound	bound	east bound_	west bound
Autos:			38	58
Medium Trucks:	_			2_
Heavy Trucks:	_		_3	7
Buses:				
Motorcycles:				
Distance from Existing Road: _	95 Height	Above or Belo	ow Existing Road:	5 ft
Existing Speed Limit:5	5 mph Ave	erage Speed of	Vehicles: 5	DO mph
Is the road at a grade:NO				
Will this receptor need a drivewa	ay to the proposed	road:	es	
Weather: AM: Temp (F	r) R	н%	Wind Speed	МРН
PM: Temp (F	r) <u>15</u> ri	H 34 %	Wind Speed 4. U	МРН
NOTES: Non-traffic noise (airpl receptor AM:	anes, dogs, cars or	n side road, etc	.), foliage, terrain l	oetween road and
PM:				
Both:				

File Name on Meter LxT_Data.003

File Name on PC SLM_0005625_LxT_Data_003.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-22
 15:48:30

 Stop
 2018-10-22
 16:03:34

 Duration
 00:15:04.1

 Run Time
 00:00:00.0

 Pause
 00:00:00.0

Pre Calibration 2018-10-22 14:45:39

Post Calibration None

Calibration Deviation ---

Overall Settings

A Weighting **RMS Weight Peak Weight** Z Weighting Detector Slow PRMLxT1 Preamp Off **Microphone Correction** Exponential Integration Method **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting** Z Weighting Bin Max **OBA Max Spectrum** Overload 146.4

Under Range Peak 102.7
Under Range Limit 51.7
Noise Floor 38.5

Results

64.1
93.7
260.130
8.286
41.432
2018-10-22 15:49:36

NOISE RECEPTOR SITE DATA SHEET

Lxt_004

Job Name:	USL	0	Job N	umber: 18	5402-0	Calibration Cl	neck:\	13.90
Receptor S	ite No: _	3	Event N	Jo: AM	_ PM/	_ Taken By:	JRS	3
AM Date:			Begin Tin	ne:		End Time: _		
PM Date:	olas	811	Begin Tim	ie: 4:1	4 1	End Time:	4:20	3
Receptor N	ame:	Pin-	e Lane	He si	dence	1011111111	- 14	
Purpose of	Receptors	: Ambien	t Only (Y or	N): <u>}</u>	_No. of Re	sidences:	4 Oth	er:
						ed eligi		
						PM		
Leq (dBA):			ZAITA			52.		
Traffic Cour	nt on Exis	ting Road	way:			72	P	
		1000	_ bound	bound	i _	boun	d	bound
Autos:					_			
Medium Tru	cks:				_			_
Heavy Truck	is:				_			
Buses:			_		_			
Motorcycles:	14	-	-	_	-		-	
Distance from	n Existing	Road:	H	leight Abov	e or Below	Existing Roa	ıd:	
Existing Spee	d Limit:			_ Average S	Speed of Ve	ehicles:		
Is the road at	a grade: _		Percent Slo	pe:	Which v	way is it inclin	ning:	
Will this recep								
Weather:	AM:	Temp (F)	RH	% Wi	ind Speed	MP	Н
						ind Speed 2		
NOTES: Non receptor AM:	-traffic no	oise (airpl	anes, dogs, c	ars on side	road, etc.),			
and a								
PM:								

File Name on Meter LxT_Data.004

File Name on PC SLM_0005625_LxT_Data_004.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Job Description US 60 Ballard/McCracken_Friendship Road

Paducah

52 3

Note 1-24 US 60

Measurement

Description

Location

 Start
 2018-10-22 16:14:56

 Stop
 2018-10-22 16:29:59

 Duration
 00:15:02.5

 Run Time
 00:15:02.5

Pause 00:00:00.0

Pre Calibration 2018-10-22 14:45:39

Post Calibration None

Calibration Deviation

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Detector Slow Preamp PRMLxT1 Off Microphone Correction Exponential Integration Method **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting Z** Weighting

OBA Max Spectrum

Overload

Bin Max

146.4

7703.00

Under Range Peak
Under Range Limit
102.7
51.7

Noise Floor 38.5

Results

52.5
81.9
17.020
543.143

EAS40 2.716

LZSpeak (max) 2018-10-22 16:23:49

NOISE RECEPTOR SITE DATA SHEET LX+_005

Job Name: US GO	Job Number	18402	Calibration Che	ck: 113,90
Receptor Site No:	Event No: AN	PM_✓	Taken By:	TRS
AM Date:	Begin Time:		End Time:	
PM Date: 10/22/18	Begin Time:	4:39	End Time:	4:54
Receptor Name:Wes	+ KY Techn	ology Po	ark	
Purpose of Receptors: Ambi	ent Only (Y or N): _b	No. of R	esidences: 10)Other:
Site Description:	o was trav	f reside	mes	
Intersecting Roadway Name	:	540		
	AM		$\underline{\mathbf{PM}}$	
Leq (dBA):			12.5	+
Traffic Count on Existing Ro	adway:		→	-
	boundl	bound	east bound	west bound
Autos:			63	95
Medium Trucks:			3_	9
Heavy Trucks:			5	9
Buses:				1
Motorcycles:			-	
	100	11000 5 2010	E	[9 =
Distance from Existing Road:				
Existing Speed Limit:	35 mph Aver	rage Speed of V	/ehicles:	35 mph
s the road at a grade: NO	Percent Slope:	Which	way is it inclini	ng:
Will this receptor need a drive	way to the proposed r	oad: Ves	5	
Veather: AM: Temp	(F) RH	I% W	Vind Speed	MPH
PM: Temp	(F) <u>60,9</u> RH	1 44 % W	/ind Speed 2.	<u>Л</u> мрн
IOTES: Non-traffic noise (air eceptor M:	planes, dogs, cars on	side road, etc.)	, foliage, terrain	between road and
M: birds, 1	needeater			
oth:				

File Name on Meter LxT_Data.005

File Name on PC SLM_0005625_LxT_Data_005.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-22 16:39:37

 Stop
 2018-10-22 16:54:46

 Duration
 00:15:09.5

 Run Time
 00:15:09.5

 Pause
 00:00:00.0

Pre Calibration 2018-10-22 14:45:39

Post Calibration None

Calibration Deviation ---

Overall Settings

A Weighting **RMS Weight Peak Weight** Z Weighting Slow Detector PRMLxT1 Preamp Off **Microphone Correction** Integration Method Exponential Low **OBA Range** 1/1 and 1/3 **OBA Bandwidth Z** Weighting **OBA Freq. Weighting** Bin Max **OBA Max Spectrum** 146.4 Overload

Under Range Peak 102.7
Under Range Limit 51.7
Noise Floor 38.5

Results	
LASeq	62.4
LASE	92.0
EAS	175.179
EAS8	5.547
EAS40	27.736
LZSpeak (max)	2018-10-22 16:54:37

NOISE RECEPTOR SITE DATA SHEET LX+ _ OOL

Job Name:	1860	Job Nur	nber: 100	105- C	alibration Ch	eck: 113.90
Receptor Site No	4	Event No	: AM	PM /	Taken By:	JRS
AM Date:		Begin Time:	1	E	nd Time:	
PM Date: 101	22/18	Begin Time:	4:5	54 E	nd Time:	5:10
Receptor Name:	West 1	KY Te	chuolog	y Pa	rk	
Purpose of Recep						Other:
Site Description:						
Intersecting Road	way Name:	VS	60			
		AM			PM	
Leq (dBA):		1			60.	Ī
Traffic Count on E	Existing Roadw	vay:		_	→	
		bound	bound	20	St bound	west bound
Autos:			_		54	104
Medium Trucks:			_	-	5	_2_
Heavy Trucks:		-	_		2	_3_
Buses:	_	_	_			
Motorcycles:		-	_	4	_	
Distance from Exis	ting Road:\	00 Hei	ght Above	or Below I	Existing Road	1: 54
Existing Speed Lim						
Is the road at a grad						
Will this receptor ne					,	
Weather: AM	I: Temp (F)		RH	% Wir	id Speed	MPH
PM	: Temp (F)	62°	RH 40) % Win	d Speed 2	В мрн
NOTES: Non-traffi receptor AM:	c noise (airplai	nes, dogs, car	s on side ro	oad, etc.), f	oliage, terrais	n between road and
and laids	, solo	eter et	5.0	5 ,om		
PM: birds	weeder	2100 01				

File Name on Meter LxT Data.006

File Name on PC SLM_0005625_LxT_Data_006.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-22 16:54:54

 Stop
 2018-10-22 17:10:00

 Duration
 00:15:05.7

Run Time 00:15:05.7

Pause 00:00:00.0

Pre Calibration 2018-10-22 14:45:39

Post Calibration None

Calibration Deviation ---

Overall Settings

RMS Weight
Peak Weight
Detector
Slow
Preamp
PRMLxT1
Microphone Correction
Integration Method
OBA Range

A Weighting
Z Weighting
Slow
PRMLxT1
Exponential
Companies the second of the sec

OBA Bandwidth

OBA Freq. Weighting

Z Weighting

OBA Max Spectrum

Overload

Bin Max

146.4

A A

Under Range Peak
Under Range Limit
102.7
51.7

Noise Floor 38.5

Results

LASE 60.1 LASE 89.7 EAS 102.965

EAS8 3.274

EAS40 16.371 LZSpeak (max) 2018-10-22 17:04:35

NOISE RECEPTOR SITE DATA SHEET

Lxt_007

Job Name:	US	40	Job Nu	mber: 184	-60-	Calibration C	heck:\	13.99
Receptor Si	te No: _	5	Event No	o: AM	PM /	_ Taken By	:_JR	3
AM Date: _			Begin Time	к		End Time: _		
PM Date: \(\lambda	0/59	811-	Begin Time	: 5:19	1	End Time: _	5:31	+
Receptor Na	me:	Grace	Valley	Indep	enden	+ Bap	fist C	hurch
Purpose of F	Receptors	: Ambient	Only (Y or N	D: N	No. of Re	esidences:	5_Oth	er:\
Site Descrip								
Intersecting	Roadway	Name:	USL	0				
			AM			PM		
Leq (dBA):						73	\mathcal{B}_{\cdot}	
Traffic Coun	t on Exis	ting Roadv	vay:		0	<u>~</u> >	-	
			bound	bound	_(east bour	id west	bound
Autos:			Ver 10 (44	96	
Medium Truc	eks:				_	4	_3	
Heavy Trucks	s:		_			6	4	
Buses:						_	_	-
Motorcycles:	N. j.			_	_	_	9-	
Distance from	Guistina	Poods 1	251 40	ight Above	or Balow	Evicting Po	ad: □	A.
Existing Speed	d Limit:	22	mph	Average Sp	need of V	ehicles:	45 n	John
s the road at a	grade: _	NO	Percent Slop	e:	Which	way is it incli	ining:	
Vill this recep	otor need	a driveway	to the propo	sed road: _	Ye	S		
Veather:	AM:	Temp (F)		RH	% w	ind Speed _	MP	Н
	PM:	Temp (F)	58	кн <u>5</u> 1	_% W	ind Speed C), MP	н
OTES: Non- ceptor M:	traffic no	oise (airpla	nes, dogs, ca	rs on side ro	oad, etc.),	foliage, terra	in betwee	n road and
M:								
oth:								

File Name on Meter LxT_Data.007

File Name on PC SLM_0005625_LxT_Data_007.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

Start 2018-10-22 17:19:41 Stop 2018-10-22 17:34:45 00:15:04.6 Duration **Run Time** 00:15:04.6 0.00:00.0 Pause

Pre Calibration 2018-10-22 14:45:39

Post Calibration None

Calibration Deviation

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Slow Detector PRMLxT1 Preamp Off Microphone Correction Exponential Integration Method Low **OBA Range** 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting** Bin Max **OBA Max Spectrum**

146.4 Overload A

102.7 **Under Range Peak Under Range Limit** 51.7

38.5 **Noise Floor**

Results

LASeq	62.8
LASE	92.4
EAS	193.055
EAS8	6.146
E4646	20 722

30.732 EAS40

2018-10-22 17:31:44 LZSpeak (max)

NOISE RECEPTOR SITE DATA SHEET LX1_008

Job Name: _	USL	0	Job N	umber:_\8	-6040	_ Calibration	Check: _	113,99
Receptor Site	No:	5	Event N	o: AM	PM	/ Taken B	y: J	RS
AM Date:			Begin Tim	e:		End Time;		
PM Date: 10	122	118	Begin Time	e: 5.	34	End Time:	5,1	19
Receptor Nan	ne:(Evace 1	Valley -	Indepo	ndent	Baptis	st C	hurch
Purpose of Re	eceptors:	Ambient (Only (Y or I	N): N	_No. of	Residences: _	5 0	Other:
Site Description		10		The second second				
Intersecting R	oadway	Name:	V:	S 60				
			AM			P	M	
Leq (dBA):			1.62			60	.7	
Traffic Count	on Exist	ing Roadw	ay:			~>	4	-
			bound	boun	d	east bor	and we	st bound
Autos:			_			43	Li	1_
Medium Truck	s:					1	_3)
Heavy Trucks:						4	6	<u> </u>
Buses:							_	<u></u>
Motorcycles:							1	
Distance from I	Existing	Road: \	25′ н	eight Abov	e or Belo	ow Existing R	oad:	54
Existing Speed								
s the road at a			A 18 CO. O. C.					7
Will this recepto								
Veather:	AM:	Temp (F)		RH	%	Wind Speed _	N	Л РН
						Wind Speed _		
OTES: Non-tr eceptor M:	affic no	ise (airplar	ies, dogs, ca	ars on side	road, etc	.), foliage, ter	rain betw	een road and
M:								
oth:								

File Name on Meter LxT_Data.008

File Name on PC SLM_0005625_LxT_Data_008.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-22
 17:34:52

 Stop
 2018-10-22
 17:49:55

 Duration
 00:15:03.3

 Run Time
 00:15:03.3

 Pause
 00:00:00.0

Pre Calibration 2018-10-22 14:45:39

Post Calibration None

Calibration Deviation ---

Overall Settings

A Weighting **RMS Weight Peak Weight** Z Weighting Slow Detector PRMLxT1 Preamp Off Microphone Correction Exponential Integration Method Low **OBA Range** 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting** Bin Max **OBA Max Spectrum** 146.4 Overload

Under Range Peak
Under Range Limit
51.7
Noise Floor
38.5

Results

LASeq	62.7
LASE	92.2
EAS	186.481
EAS8	5.946
EAS40	29.728
LZSpeak (max)	2018-10-22 17:48:49

NOISE RECEPTOR SITE DATA SHEET LX+_009

Job Name: US U) Jo	ob Number: 18	402	Calibration Cl	heck;\	13,94
Receptor Site No:	5 Eve	ent No: AM_ V	PM_	Taken By:	JR	.5
AM Date: 10/23	18 Begin	Time: 7:0	5_	End Time: _	7:2	0
PM Date:		Time:				
Receptor Name:	race Valle	y Indep	sendent	t Baptis	st Cl	nurch
Purpose of Receptors	: Ambient Only (Y	(or N): N	_No. of R	esidences:	5 Oth	er:
Site Description:						
Intersecting Roadway	Name:	US 60				
	AM			<u>PM</u>		
Leq (dBA):	63.5	2			_	
Traffic Count on Exist	ing Roadway:	«				
	east bound	west bound	d .	boun	d	bound
Autos:	78_	52				-
Medium Trucks:	_2_	4_				_
Heavy Trucks:	3_	5_	0			
Buses:			_			
Motorcycles:	-	_	-			0.16
Distance from Existing	Road: 125	_ Height Abov	e or Belov	v Existing Roa	id: 5	tt
Existing Speed Limit:						
Is the road at a grade: _	Y.					
Will this receptor need	a driveway to the	proposed road:	75	25		_
Weather: AM:	Temp (F) 41	RH_9	1_% N	/ind Speed O	.5 MP	Н
PM:	Temp (F)	_ RH	% W	ind Speed	MP	Н
NOTES: Non-traffic no receptor						
PM:)				
Both:						

File Name on Meter LxT_Data.009

File Name on PC SLM_0005625_LxT_Data_009.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 07:05:21

 Stop
 2018-10-23 07:20:31

 Duration
 00:15:09.6

 Run Time
 00:00:00.0

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 07:03:21

Post Calibration None

Calibration Deviation ---

Overall Settings

A Weighting **RMS Weight Peak Weight Z** Weighting Slow Detector PRMLxT1 Preamp Off Microphone Correction Exponential Integration Method Low **OBA Range** 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting OBA Max Spectrum** Bin Max

Overload 146.5

A
Under Range Peak 102.7

Under Range Limit 51.7
Noise Floor 38.6

Results	
LASeq	63.5
LASE	93.1
EAS	224.333
EAS8	7.103
EAS40	35.514
LZSpeak (max)	2018-10-23 07:18:31

NOISE RECEPTOR SITE DATA SHEET LXL_010

Job Name: US U	Job Number: 18402 Calibration Check: 113,94
Receptor Site No:	5 Event No: AM V PM Taken By: JRS
AM Date: 10123	118 Begin Time: 7:20 End Time: 7:35
PM Date:	Begin Time: End Time:
Receptor Name:	ace Valley Independent Baptist Church
	mbient Only (Y or N): No. of Residences: 5 Other: 1
	front of church
Intersecting Roadway	ame: VS 40
	<u>AM</u>
Leq (dBA):	<u></u>
Traffic Count on Exist	g Roadway:
	east bound west bound bound bound
Autos:	104 48
Medium Trucks:	2 1
Heavy Trucks:	3 4
Buses:	
Motorcycles:	
Distance from Existing	oad: 125 Height Above or Below Existing Road: 5 升
Existing Speed Limit: _	55 mph Average Speed of Vehicles: 45-50
Is the road at a grade:	JO Percent Slope: Which way is it inclining:
	riveway to the proposed road:
	emp (F) 41 RH 99 % Wind Speed 0.0 MPH
PM:	emp (F)
	e (airplanes, dogs, cars on side road, etc.), foliage, terrain between road and
receptor AM: bivds	chirping
PM:	
5 101	

File Name on Meter LxT_Data.010

File Name on PC SLM_0005625_LxT_Data_010.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 07:20:40

 Stop
 2018-10-23 07:35:56

 Duration
 00:15:15.9

 Run Time
 00:00:00.0

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 07:03:18

Post Calibration None

Calibration Deviation ---

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Slow Detector PRMLxT1 Preamp Off Microphone Correction Exponential Integration Method Low **OBA Range** 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting** Z Weighting Bin Max **OBA Max Spectrum** Overload 146.5

Under Range Peak 102.7
Under Range Limit 51.7
Noise Floor 38.6

Results

LASeq	63.5
LASE	93.1
EAS	226.918
EAS8	7.135
EAS40	35.677
LZSpeak (max)	2018-10-23 07:28:30

NOISE RECEPTOR SITE DATA SHEET LX+ 011

Receptor Site No: _	4	Event No: A	AM_ V PM_	Taken By: _	JRS
AM Date: 1012	3/18	Begin Time: _	7:41	End Time:	7:57
PM Date:		Begin Time: _		End Time:	
Receptor Name:	West	KY Ted	mology 1	Park	
Purpose of Receptors			J.		
Site Description:					
Intersecting Roadway	y Name:	VS	560		
		AM		<u>PM</u>	
Leq (dBA):		61.5			
Traffic Count on Exis	sting Roady	vay: ←			
	east	bound west	bound	bound	bound
Autos:	90	37	2		
Medium Trucks:	_2	4			
Heavy Trucks:	_5	_ 5_	4		
Buses:	_1_				
Motorcycles:		الحقا			
Distance from Existing	g Road: _\	OO Heigh	nt Above or Bel	ow Existing Road	<u> 5 H</u>
Existing Speed Limit:	35	mph A	verage Speed of	Vehicles:	35 mph
s the road at a grade:	NO	Percent Slope:	Whic	h way is it inclini	ng:
Vill this receptor need		6			
Veather: AM:	Temp (F)	<u>40.a</u>	RH	Wind Speed O	<u>О</u> мрн
PM:	Temp (F)	F	RH%	Wind Speed	MPH
OTES: Non-traffic n	oise (airpla	nes, dogs, cars	on side road, etc	.), foliage, terrain	between road a
m: bivds	chiro	ne doas	s barkin	r in bad	cground
	-	11	1	1	STATE OF

File Name on Meter LxT_Data.011

File Name on PC SLM_0005625_LxT_Data_011.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 07:41:57

 Stop
 2018-10-23 07:57:01

 Duration
 00:15:03.5

 Run Time
 00:15:03.5

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 07:03:18

Post Calibration None

Calibration Deviation ---

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Detector Slow PRMLxT1 Preamp **Microphone Correction** Off Exponential Integration Method **OBA Range** Low **OBA Bandwidth** 1/1 and 1/3 **OBA Freq. Weighting** Z Weighting Bin Max **OBA Max Spectrum** Overload 146.5

A

Under Range Peak 102.7 Under Range Limit 51.7

Noise Floor 38.6

Results

LASeq	61.5
LASE	61.5 91.0
LASE EAS EAS8	141.104
EAS8	4.498

EAS40 22.489

LZSpeak (max) 2018-10-23 07:53:11

NOISE RECEPTOR SITE DATA SHEET LX1_012-

Receptor Site No: H Event No: AM PM Taken By: TRS AM Date: 10123118 Begin Time: 7:57 End Time: 8:12- PM Date: Begin Time: End Time: End Time: Other: Purpose of Receptors: Ambient Only (Y or N): No. of Residences: 10 Other: Site Description: Front row of residences: 10 Other: US CO	
PM Date: Begin Time: End Time: Receptor Name: West KY Technology Park. Purpose of Receptors: Ambient Only (Y or N):N No. of Residences: O Other: Site Description: Front your of residences	
Receptor Name: West KY Technology Park. Purpose of Receptors: Ambient Only (Y or N): N No. of Residences: 10 Other: Site Description: Front raw of residences	
Purpose of Receptors: Ambient Only (Y or N): No. of Residences: 10 Other: Site Description: Front row of residences	_
Site Description: Front row of residences	
Site Description: Front row of residences	
Intersecting Roadway Name: USGO	
CONTRACTOR OF THE PROPERTY OF	
<u>AM</u>	
Leq (dBA): (dBA):	
Traffic Count on Existing Roadway:	
east bound west bound bound bo	und
Autos: 13 42	
Medium Trucks: 4	
Heavy Trucks: 8	
Buses:	
Motorcycles:	
Distance from Existing Road: 100 Height Above or Below Existing Road: 5 £	_
Existing Speed Limit: 35 mpl Average Speed of Vehicles: 35 mpl	
Is the road at a grade: NO Percent Slope: Which way is it inclining:	
Will this receptor need a driveway to the proposed road:	
Weather: AM: Temp (F) 49° RH 84 % Wind Speed 1.0 MPH	
PM: Temp (F)	
NOTES: Non-traffic noise (airplanes, dogs, cars on side road, etc.), foliage, terrain between ro	id and
AM: birds	_
PM:	_
Both:	

File Name on Meter LxT_Data.012

File Name on PC SLM_0005625_LxT_Data_012.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 07:57:12

 Stop
 2018-10-23 08:12:16

 Duration
 00:15:04.1

 Run Time
 00:15:04.1

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 07:03:18

Post Calibration None

Calibration Deviation ---

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Slow Detector PRMLxT1 Preamp Off Microphone Correction Exponential Integration Method Low **OBA Range** 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting OBA Max Spectrum** Bin Max Overload 146.5

Under Range Peak 102.7
Under Range Limit 51.7

Noise Floor 38.6

Results

LASeq	61.8
LASE	91.4
EAS	153.687
FASS	4.896

EAS40 24.478

LZSpeak (max) 2018-10-23 08:01:11

NOISE RECEPTOR SITE DATA SHEET LX1_013

Job Nam	e: US	60	Job Nu	mber: 18 ^L	-604	Calibration Cl	heck: 113.94
Receptor	Site No: _	3	Event No	: AM_ \/	PM_	Taken By:	JRS
AM Date	: 1012	3118	Begin Time	8.10	3_	End Time: _	8.35
PM Date	;		Begin Time:			End Time: _	
Receptor	Name:	Pin	e Lane	reside	ence		
Purpose o	of Receptor	s: Ambient	Only (Y or N): <u> </u>	No. of R	Residences:L	+_Other:
Site Descr	ription:	resi	dence ,	near y	gov q	osed ali	gnment
			Gage				
Leq (dBA)),		<u>AM</u> 46.4			PM	
		sting Roady					_
LIVING CA				bound		boun	d bound
Autos:							
Medium Tr	rucks:						
Heavy True	cks:			_			
Buses:				_			
Motorcycle	es:			_	4-		
Distance fro	om Existin	g Road:	Hei	ght Above o	or Belov	w Existing Roa	ıd:
Existing Sp	eed Limit:			Average Spe	eed of	Vehicles:	
Is the road a	at a grade:		Percent Slope	a;	Which	way is it inclin	ning:
Will this rec	ceptor need	l a driveway	to the propo	sed road:		00	
Weather:	AM:	Temp (F)	46.8	RH_89	_% V	Vind Speed _	O,O MPH
	PM:	Temp (F)		RH	_% V	Vind Speed	MPH
NOTES: No receptor AM:		200 2 27.), foliage, terra	in between road and
Both:							
Here was a second							

File Name on Meter LxT_Data.013

File Name on PC SLM_0005625_LxT_Data_013.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 08:19:53

 Stop
 2018-10-23 08:35:13

 Duration
 00:15:20.1

 Run Time
 00:15:20.1

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 07:03:18
Post Calibration None
Calibration Deviation ---

Overall Settings

LZSpeak (max)

RMS Weight A Weighting **Peak Weight Z** Weighting Detector Slow PRMLxT1 Preamp Off **Microphone Correction** Integration Method Exponential **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting** Bin Max **OBA Max Spectrum** 146.5 Overload A

Under Range Peak 102.7
Under Range Limit 51.7
Noise Floor 38.6

Results	
LASeq	46.4
LASE	76.0
EAS	4.462
EAS8	139.669
EAS40	698.345

2018-10-23 08:19:58

NOISE RECEPTOR SITE DATA SHEET LX+_014

Job Name: <u>US</u>	60	Job Number:_\{	3402_Cali	bration Check:	113.94
Receptor Site No:	2	Event No: AM _~	PM7	Γaken By:	JRS
AM Date: 10/2	13/18 B	egin Time: 8'.	48 Enc	Time:9	.03
PM Date:	В	egin Time:	End	l Time:	
Receptor Name:	Smith'	s residence			
Purpose of Recepto	rs: Ambient Or	nly (Y or N): N	_No. of Reside	ences: 67	Other:
Site Description:	7948	US LO A	ont yard		
Intersecting Roadwa	ay Name:	USLO			
		AM		PM	
Leq (dBA):	١	8,2			
Traffic Count on Ex	isting Roadway	: _			
		ound west boun	ıd	bound	bound
Autos:		15			
Medium Trucks:	_3_				
Heavy Trucks:	_3_	14			
Buses:					
Motorcycles:			-		_
Distance from Existir	ng Road: 9	5 Height Abov	ve or Below Ex	isting Road:	54
Existing Speed Limit	55 m	Ph Average	Speed of Vehic	les:50) mph
s the road at a grade:	Pe	rcent Slope:	Which way	is it inclining:	
Will this receptor nee	d a driveway to	the proposed road:	YES		
Weather: AM:	Temp (F)	19,5° RH_8	Wind	Speed O.O	_МРН
PM:	Temp (F)	RH	% Wind	Speed	МРН
IOTES: Non-traffic	noise (airplanes	s, dogs, cars on side	road, etc.), foli	age, terrain bet	ween road and
eceptor M: bivds					
M:					
oth:					

File Name on Meter LxT Data.014

File Name on PC SLM_0005625_LxT_Data_014.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 08:48:54

 Stop
 2018-10-23 09:03:57

 Duration
 00:15:02.8

 Run Time
 00:15:02.8

Pause 00:00:00.0

Pre Calibration 2018-10-23 07:03:18

Post Calibration None

Calibration Deviation --

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Slow Detector PRMLxT1 Preamp Off **Microphone Correction** Integration Method Exponential **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting**

OBA Max Spectrum Bin Max

Overload 146.5

A

Under Range Peak 102.7
Under Range Limit 51.7

Noise Floor 38.6

Results

LASeq 65.8 LASE 95.3

EAS 380.697 EAS8 12.145

EAS8 12.145 EAS40 60.723

LZSpeak (max) 2018-10-23 08:56:23

NOISE RECEPTOR SITE DATA SHEET LX+_015

Job Name: US (<u>6</u> 0	Job Number	-20181	Calibration Ch	eck: 113.94
Receptor Site No: _	1	Event No: AN	1 V PM	Taken By:	JRS
AM Date: 10/2					
PM Date:		Begin Time:		End Time:	1 11
Receptor Name:	House	of Praye	ev	11/1	
Purpose of Receptor		~		Residences:	1_Other:
Site Description:	chu	ch and p	sionic t	aldes 51	wings
Intersecting Roadwa	y Name:	USGO		100	
		AM		PM	
Leq (dBA):		4.6			
Traffic Count on Exis	sting Roadw	ay:			
BEA-1484 A COVER AND COVER		bound west 1	bound	bound	dbound
Autos:		25			
Medium Trucks:	_3_	_5_			
Heavy Trucks:	_5_	_13_			
Buses:					
Motorcycles:					
Distance from Existin	g Road:	15 Height	Above or Belo	w Existing Roa	d:
Existing Speed Limit:	55	mph Aver	age Speed of	Vehicles:5	Jam O
Is the road at a grade:					
Will this receptor need	l a driveway	to the proposed r	oad: Ye	25	
Weather: AM:	Temp (F)	51.3 RH	% 88 I	Wind Speed	. 3_мрн
PM:	Temp (F)	RH	[% '	Wind Speed	MPH
NOTES: Non-traffic n receptor AM: birds	e restorrights	es, dogs, cars on			n between road an
PM:					

File Name on Meter LxT_Data.015

File Name on PC SLM_0005625_LxT_Data_015.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 09:11:39

 Stop
 2018-10-23 09:26:47

 Duration
 00:15:07.8

Run Time 00:15:07.8

Pause 00:00:00.0

Pre Calibration 2018-10-23 07:03:18

Post Calibration None

Calibration Deviation

Overall Settings

A Weighting **RMS Weight Peak Weight Z** Weighting Slow Detector PRMLxT1 Preamp Off **Microphone Correction** Integration Method Exponential Low **OBA Range** 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting** Bin Max

OBA Max Spectrum

Overload

Bin Max

146.5

A

Under Range Peak
Under Range Limit
102.7
51.7

Noise Floor 38.6

Results

LASeq	64.6
LASE	94.2
EAS	291.395
EAS8	9.245

EAS40 46.223

LZSpeak (max) 2018-10-23 09:26:00

NOISE RECEPTOR SITE DATA SHEET LX+_O/U

Job Name: US (,0	Job Num	ber: 18402	_ Calibration Che	eck: 113,94
Receptor Site No: _	1	Event No:	ampm_	Taken By:	JRS
AM Date: 1012	8118	Begin Time:	9:26	End Time:	9:42
PM Date:		Begin Time:		End Time:	
Receptor Name:	House	of Prai	yer		
Purpose of Receptor	s: Ambient	Only (Y or N)	No. of	Residences: 💾	Other:
Site Description:	churc	In and	picnic tab	oles I swir	روح
Intersecting Roadway					
		AM		$\underline{\mathbf{PM}}$	
Leq (dBA):		64.9			
Traffic Count on Exis	sting Roady	vay: 🔷			
	east	bound wes	\pm bound	bound	bound
Autos:	42	14			
Medium Trucks:	2	_3			
Heavy Trucks:	14	_4			
Buses:					
Motorcycles:		=			
Distance from Existing	g Road:	75 Heig	ht Above or Bel	ow Existing Road	1:
Existing Speed Limit:					24
s the road at a grade:					
Will this receptor need	The National Control				
				Wind Speed 1.	3_мрн
PM:	Temp (F)		RH%	Wind Speed	MPH
NOTES: Non-traffic neceptor M: bivds	100000000000000000000000000000000000000	1007 10707 1171	on side road, etc		between road and
M:					
oth:					

File Name on Meter LxT_Data.016

File Name on PC SLM_0005625_LxT_Data_016.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 09:26:55

 Stop
 2018-10-23 09:42:12

 Duration
 00:15:16.8

 Run Time
 00:15:16.8

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 07:03:18

Post Calibration None

Calibration Deviation

Overall Settings

RMS Weight A Weighting Z Weighting **Peak Weight** Detector Slow PRMLxT1 Preamp Off **Microphone Correction** Exponential Integration Method **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting** Z Weighting Bin Max **OBA Max Spectrum** Overload 146.5

Under Range Peak 102.7
Under Range Limit 51.7
Noise Floor 38.6

Results

LASeq	64.9
LASE	94.5
EAS	313.030
EAS8	9.833
EAS40	49.167
LZSpeak (max)	2018-10-23 09:29:17

NOISE RECEPTOR SITE DATA SHEET

Job Name:	USC	00	Job 1	Number:_\\	8403-	_ Calibrati	on Check	114.09
Receptor S	ite No: _	5	_ Event	No: AM_	_ PM_	Take	n By:	TRS
AM Date:	10/2	3/18	Begin Tir	me: _ \ \ :	15	_ End Tin	ne:	:31
PM Date:		1////	Begin Tir	me:		End Tin	ne:	
			Valley	INDE	pende	nt B	aptist	Church
							The second second	Other:
Site Descrip	otion:	from	A 6	f chur	rch			
Intersecting	Roadwa	y Name:		1540				
			AM				<u>PM</u>	
Leq (dBA):		1.012	Cel.L			_		
Traffic Cour	nt on Exi	sting Roadwa	777	-				
			1 4 4 4 4 4 4	vest bou	nd		bound _	bound
Autos:		48		37_			_	
Medium Tru	cks:	_2_		2_			_	
Heavy Truck	is:	_3_	_	6			_	
Buses:		_		-			_	
Motorcycles:		_		_			_	_
Distance from	n Existin	g Road:\	25	Height Abo	ve or Bel	ow Existin	g Road: _	54
Existing Spee	ed Limit:	_ 55 m	-ph	Average	Speed of	Vehicles:	45	mph
Is the road at	a grade:	NO_F	ercent SI	ope:	Whic	h way is it	inclining	
Will this rece	ptor need	a driveway	to the pro	posed road	:Y	es		
Weather:	AM:	Temp (F)	17.8	RH_	+3 %	Wind Spee	a 2.5	<u>М</u> РН
	PM:	Temp (F)		RH_	%	Wind Spee	ed	_МРН
NOTES: Non ecceptor AM:		oise (airplan	es, dogs,	cars on side	e road, etc	.), foliage,	terrain be	etween road an
PM:								
Both:								
CULT COMMENT								

File Name on Meter LxT_Data.017

File Name on PC SLM_0005625_LxT_Data_017.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 11:15:03

 Stop
 2018-10-23 11:31:19

 Duration
 00:16:16.3

Run Time 00:16:16.3

Pause 00:00:00.0

Pre Calibration 2018-10-23 11:13:33

Post Calibration None

Calibration Deviation ---

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Detector Slow Preamp PRMLxT1 Microphone Correction Off Integration Method Exponential **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting** Z Weighting **OBA Max Spectrum** Bin Max

Overload 146.5

Under Range Peak 102.7
Under Range Limit 51.7
Noise Floor 38.6

Results

LASeq	61.1
LASE	90.9
EAS	138.269
EAS8	4.079

EAS40 20.394

LZSpeak (max) 2018-10-23 11:17:37

NOISE RECEPTOR SITE DATA SHEET LXL_018

Job Name: <u>US</u>	60	Job Number:_	18405	Calibration Check:	114.02
Receptor Site No:	5	_ Event No: AM_	✓_PM	Taken By:	TRS_
AM Date: 1012	3/18 1	Begin Time: \\'	:31	End Time:\\	:48
PM Date:	F	Begin Time:		End Time:	
Receptor Name:	Grace Vo	alley Inde	ependent	- Baptist	Church
Purpose of Recepto	rs: Ambient O	1 nly (Y or N):	No. of Re	esidences: 5	Other:
Site Description:		2 2			
Intersecting Roadwa	ay Name:	USL	0		
		AM		PM	
Leq (dBA):		9.00			
Traffic Count on Ex	isting Roadwa	y: _			
	east t	ound west bo	ound _	bound	bound
Autos:	39	50			
Medium Trucks:	_5_	_3_			
Heavy Trucks:	_5_	_5_	_		
Buses:			5-		
Motorcycles:			\ <u>-</u>		
Distance from Existin	ng Road: 12	5 Height Al	bove or Below	Existing Road: _	54
Existing Speed Limit	55 m	Average	ge Speed of V	ehicles: 45	5 mpl
s the road at a grade:	NO PE	ercent Slope:	Which v	way is it inclining:	
Will this receptor nee	d a driveway te	o the proposed roa	ad:	(5	
Veather: AM:	Temp (F)	11.4° RH	39 % W	ind Speed 2.3	_МРН
PM:	Temp (F) _	RH_	% W	ind Speed	_МРН
IOTES: Non-traffic eceptor M:	noise (airplane		de road, etc.),	foliage, terrain be	tween road and
M:					
oth:					

File Name on Meter LxT_Data.018

File Name on PC SLM_0005625_LxT_Data_018.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith Location Paducah

Job Description US 60 Ballard/McCracken Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 11:31:27

 Stop
 2018-10-23 11:48:50

 Duration
 00:17:23.7

 Run Time
 00:017:23.7

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 11:13:30

Post Calibration None

Calibration Deviation ---

Overall Settings

A Weighting **RMS Weight Peak Weight Z** Weighting Detector Slow Preamp PRMLxT1 Off Microphone Correction Exponential Integration Method **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting** Z Weighting Bin Max **OBA Max Spectrum** Overload 146.5

Under Range Peak 102.7
Under Range Limit 51.7

Noise Floor 38.6

Results

LASeq	60.9
LASE	91.0
EAS	141.165
EAS8	3.895
EAS40	19.477

LZSpeak (max) 2018-10-23 11:39:06

NOISE RECEPTOR SITE DATA SHEET LXL_019

Job Name: USU	۵۰	_ Job Number: 18402	Calibration Check	c: 114.03
Receptor Site No:	4	Event No: AM V PM	Taken By:	JRS
		egin Time: 11:54		
PM Date:	Ве	egin Time:	End Time:	
Receptor Name:	west KI	Y Technology Y	Park	
		ly (Y or N): N No. o		Other:
		row of residence		
Intersecting Roadway				
	A	<u>IM</u>	$\underline{\mathbf{PM}}$	
Leq (dBA):	Lo	0.0		
Traffic Count on Exis	sting Roadway	<u> </u>		
	east bo	ound west bound	bound	bound
Autos:	48	46		
Medium Trucks:	_3_	_ Cr		
Heavy Trucks:	_6_	_5_		
Buses:				
Motorcycles:	2			
Distance from Existing	g Road: <u>10</u>	Height Above or Be	low Existing Road: _	5 +
Existing Speed Limit:	35 mg	Average Speed	of Vehicles:3 ^E	i mph
s the road at a grade:	NO Per	cent Slope: Whi	ich way is it inclining	3;
Vill this receptor need	a driveway to	the proposed road:	res	
Veather: AM:	Temp (F)	8.4° RH 37 %	Wind Speed 1.4	_МРН
PM:	Temp (F)	RH%	Wind Speed	_МРН
centor		dogs, cars on side road, e		etween road and
oth:				
V-711				

File Name on Meter LxT Data.019

File Name on PC SLM_0005625_LxT_Data_019.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 11:54:23

 Stop
 2018-10-23 12:09:28

 Duration
 00:15:04.7

 Run Time
 00:15:04.7

Pause 00:00:00.0

Pre Calibration 2018-10-23 11:13:30 Post Calibration None

Calibration Deviation ---

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Detector Slow PRMLxT1 Preamp Off Microphone Correction Integration Method Exponential **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting** Bin Max **OBA Max Spectrum**

Overload 146.5

Under Range Peak
Under Range Limit
51.7
Noise Floor
38.6

Results

LASeq	60.0
LASE	89.5
EAS	99.521
EAS8	3.168
EAS40	15.841
LZSpeak (max)	2018-10-23 11:59:14

Job Name:US	,60	Job Number:_	18405	_ Calibration Chec	k: <u>114.00</u>
Receptor Site No:	4	Event No: AM_	PM	✓ Taken By: _	JRS
AM Date:		Begin Time:		End Time:	
PM Date: 10 2	3/18	Begin Time: 12	109	End Time: \	1:24
Receptor Name:	West	KY Techn	alogy F	Park	
Purpose of Receptor	rs: Ambient (Only (Y or N):	1_No. of	Residences: \	Other:
Site Description:	front	to war t	residence	0	
Intersecting Roadwa	ıy Name:	USGO)		
		AM		PM	
Leq (dBA):		12.8		100	
Traffic Count on Exi	isting Roadw	ray:			
	east	bound west bo	und	bound _	bound
Autos:	45	45			1000
Medium Trucks:	2 .	_5_			
Heavy Trucks:	6				
Buses:					
Motorcycles:		,			- E 12
Distance from Existin	ig Road: _\ \	Height Al	ove or Belo	w Existing Road:	5 ft
Existing Speed Limit:	35	mph Averag	ge Speed of	Vehicles: 35	dan E
Is the road at a grade:					
Will this receptor need			and the	THE RESERVE THE PROPERTY OF THE PARTY OF THE	
Weather: AM:	Temp (F)			Wind Speed	МРН
PM:	Temp (F)	71.5 RH_	35 % 1	Wind Speed \	_МРН
NOTES: Non-traffic r receptor AM:	noise (airplan	nes, dogs, cars on si	de road, etc.), foliage, terrain b	petween road and
PM: dog ba	kings	birds			
Both:	رن				

File Name on Meter LxT_Data.020

File Name on PC SLM_0005625_LxT_Data_020.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 12:09:40

 Stop
 2018-10-23 12:24:43

 Duration
 00:15:03.2

 Run Time
 00:15:03.2

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 11:13:30

Post Calibration None

Calibration Deviation ---

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Detector Slow PRMLxT1 Preamp Microphone Correction Off Exponential Integration Method **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting** Z Weighting **OBA Max Spectrum** Bin Max Overload 146.5 A

Under Range Peak
Under Range Limit
51.7
Noise Floor
38.6

Results

LASeq	62.8
LASE	92.4
EAS	191.402
EAS8	6.103
EAS40	30.516
LZSpeak (max)	2018-10-23 12:21:45

NOISE RECEPTOR SITE DATA SHEET LXt_02\

Job Name: US UO	Job Number: \2	S402 Calibration C	heck: 114.02
Receptor Site No: 3	Event No: AM	PM Taken By:	JRS
AM Date:	Begin Time:	End Time: _	
PM Date: 10/23/18			
Receptor Name: Pine			
Purpose of Receptors: Ambien			
Site Description: 451d	mu near pr	oposed alignm	pent
Intersecting Roadway Name: _	Coor F	200.0	
intersecting Koadway Name: _	AM	PIM	
T CATO A No	PAIVE	45	
Leq (dBA): Traffic Count on Existing Road	lway:		
	bound bour	nd bour	nd bound
Autos:			
Medium Trucks:			
Heavy Trucks:			
Buses:		_	
Motorcycles:	_	-	
	Height Abo	wa or Balow Evisting Re	nad:
Distance from Existing Road: _			
Existing Speed Limit:			
Is the road at a grade:	Percent Slope:	Which way is it incl	ining:
Will this receptor need a drivew	ay to the proposed road	l:	
Weather: AM: Temp (F) RH_	% Wind Speed	MPH
en Markatania		37_% Wind Speed_	7 мрн
Programme and the state of			
NOTES: Non-traffic noise (airpeceptor AM:			
DM: 1 cms manix	e in back ar	ound mall	plane overhea
	2)	
Both:			

Summary			
File Name on Meter			

LxT Data.021

File Name on PC SLM_0005625_LxT_Data_021.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

Pause

Start 2018-10-23 12:35:36 Stop 2018-10-23 12:50:40 Duration 00:15:03.5 **Run Time** 00:15:03.5 0.00:00.0

Pre Calibration 2018-10-23 11:13:30

Post Calibration None **Calibration Deviation**

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Detector Slow PRMLxT1 Preamp Off Microphone Correction Exponential Integration Method **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting OBA Max Spectrum** Bin Max 146.5 Overload A

Under Range Peak 102.7 **Under Range Limit** 51.7 **Noise Floor** 38.6

Results	
LASeq	45.6
LASE	75.2
EAS	3.683
EAS8	117.411
EAS40	587.054
740 00 days	2010 10 22 12 20 22

LZSpeak (max) 2018-10-23 12:39:33

NOISE RECEPTOR SITE DATA SHEET LX+_022

Job Name: US WO	Job Number: 1	6403- Calibration	n Check: 114.03
Receptor Site No:	Event No: AM	PM V Taken	By: JRS
AM Date:	Begin Time:	End Time	a:
PM Date: 10123/18	Begin Time: 12	.58 End Time	1:13
Receptor Name: Sm	th's residence		
Purpose of Receptors: Ambie	nt Only (Y or N): N	No. of Residences:	Other:
Site Description:	48 USLED 4	Front yard	
Intersecting Roadway Name:			
	AM		PM
Leq (dBA):		L	<u>√ 9-</u>
Traffic Count on Existing Roa	adway:	->	_
	bound bou	and <u>east</u> b	bound west bound
Autos:		18	_18_
Medium Trucks:		_3_	_3_
Heavy Trucks:		_3_	_4_
Buses:			
Motorcycles:		-	
Distance from Existing Road:	95 Height Ab	ove or Below Existing	Road: 5 ft
Existing Speed Limit:5	5 mph Averag	ge Speed of Vehicles:	50 mpt
Is the road at a grade: NO	Percent Slope:	Which way is it	inclining:
Will this receptor need a drive			
Weather: AM: Temp	(F) RH_	% Wind Spee	edMPH
PM: Temp	(F) <u>73.8</u> RH_	38_% Wind Spee	d_\._MPH
NOTES: Non-traffic noise (ain eceptor AM:		de road, etc.), foliage,	terrain between road and
PM: birds; woo	dpecker		
30th:			

File Name on Meter LxT_Data.022

File Name on PC SLM_0005625_LxT_Data_022.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 12:58:10

 Stop
 2018-10-23 13:13:53

 Duration
 00:15:42.7

 Run Time
 00:00:00.0

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 11:13:30 Post Calibration None

Calibration Deviation ---

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Detector Slow PRMLxT1 Preamp **Microphone Correction** Off Exponential Integration Method **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth** Z Weighting **OBA Freq. Weighting** Bin Max **OBA Max Spectrum** Overload 146.5

Under Range Peak 102.7
Under Range Limit 51.7
Noise Floor 38.6

Results

LASeq	61.2
LASE	91.0
EAS	139.537
EAS8	4.263
EAS40	21.315
LZSpeak (max)	2018-10-23 13:12:26

NOISE RECEPTOR SITE DATA SHEET LXL_023

		Calibration Check: 114.03
Receptor Site No:	Event No: AMPM	I ✓ Taken By: <u>JRS</u>
AM Date:	Begin Time:	End Time:
	8 Begin Time:1; 2.1	
Receptor Name:	touse of Prayer	
Purpose of Receptors: Am	nbient Only (Y or N): No. o	of Residences:Other:
Site Description:	hurch pionic tables	swings
	ne: US60	
	AM	<u>PM</u>
Leq (dBA):		64.0
Traffic Count on Existing	Roadway:	→ ←
	bound bound	east bound west bound
Autos:		27 30
Medium Trucks:		_55_
Heavy Trucks:		_610_
Buses:		
Motorcycles:		
	ad: 75 Height Above o	
	55 mph Average Speed	
s the road at a grade: Ve	S Percent Slope: W	hich way is it inclining: west
	iveway to the proposed road:	
	mp (F) RH	
PM: Te	mp (F) <u>69.4</u> RH <u>39.9</u>	Wind Speed 2.8 MPH
eceptor		etc.), foliage, terrain between road and
M: birds,	tractor on side voi	ad
Both:		

File Name on Meter LxT_Data.023

File Name on PC SLM_0005625_LxT_Data_023.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 13:21:17

 Stop
 2018-10-23 13:36:22

 Duration
 00:15:05.9

 Run Time
 00:15:05.9

Pause 00:00:00.0

Pre Calibration 2018-10-23 11:13:30

Post Calibration None

Calibration Deviation ---

Overall Settings

RMS Weight A Weighting **Peak Weight** Z Weighting Detector Slow PRMLxT1 Preamp **Microphone Correction** Off Exponential Integration Method **OBA Range** Low **OBA Bandwidth** 1/1 and 1/3 Z Weighting **OBA Freq. Weighting**

OBA Max Spectrum

Overload

Bin Max

146.5

A

Under Range Peak 102.7
Under Range Limit 51.7

Noise Floor 38.6

Results

LASeq	64.0
LASE	93.6
EAS	253.075
EAS8	8.046

EAS40 40.228

LZSpeak (max) 2018-10-23 13:23:46

NOISE RECEPTOR SITE DATA SHEET LX+_024

Job Name: US Le	O Job N	Jumber: 1840	2 Calibration Ch	eck: 114.02
Receptor Site No:	Event 1	No: AMPI	M / Taken By:	JRS
AM Date:	Begin Tin	ne:	End Time:	
PM Date: 10123	18 Begin Tin	ne: 1:36	End Time:	1:51
Receptor Name:	touse of	Prayer		
Purpose of Receptors:	Ambient Only (Y or	N): No.		
Site Description:	church pi	cnic table	es I swings	
Intersecting Roadway l	Name:	USLEC		
	AM		<u>PM</u>	
Leq (dBA):			64.	3
Traffic Count on Existi	ng Roadway:		->	←
	bound	bound	east bound	d west bound
Autos:			_38_	31
Medium Trucks:			_4_	_1_
Heavy Trucks:			_4_	_5_
Buses:				
Motorcycles:				
	1			
Distance from Existing				Delivery and the second
Existing Speed Limit: _	55 mpl	Average Spee	ed of Vehicles:	50 mph
s the road at a grade:				
Will this receptor need a				
Will this receptor need a	I driveway to the pre			NADII.
	Temp (F)		_% Wind Speed	
PM:	Temp (F) 74.8	RH <u>36</u>	_% Wind Speed _	<u> </u>
NOTES: Non-traffic no eceptor M:	ise (airplanes, dogs,	cars on side road	d, etc.), foliage, terra	in between road and
m: birds				
soth:				

Su	m	m	2	rv.
Ju			а	ΙV

File Name on Meter LxT_Data.024

File Name on PC SLM_0005625_LxT_Data_024.00.ldbin

Serial Number 0005625

Model SoundTrack LxT®

Firmware Version 2.302

User Jim Smith

Location Paducah

Job Description US 60 Ballard/McCracken_Friendship Road

Note 1-24 US 60

Measurement

Description

 Start
 2018-10-23 13:36:31

 Stop
 2018-10-23 13:51:35

 Duration
 00:15:03.5

 Run Time
 00:15:03.5

 Pause
 00:00:00.0

Pre Calibration 2018-10-23 11:13:30

Post Calibration None

Calibration Deviation --

Overall Settings

RMS Weight A Weighting **Peak Weight Z** Weighting Detector Slow Preamp PRMLxT1 Off **Microphone Correction** Exponential Integration Method **OBA Range** Low 1/1 and 1/3 **OBA Bandwidth OBA Freq. Weighting** Z Weighting Bin Max **OBA Max Spectrum**

Overload 146.5

Under Range Peak
Under Range Limit
102.7
51.7

Noise Floor 38.6

Results

LASeq	64.3
LASE	93.8
EAS	268.097
EAS8	8.546
EAS40	42.729
과 보이면 이번에 요면하다.	

LZSpeak (max) 2018-10-23 13:42:13

APPENDIX B TRAFFIC DATA

US 60 Ballard Count PROJECT:

MARS NUMBER: ITEM NUMBER:

Saturday, January 0, 1900 0 REQUEST DATE:

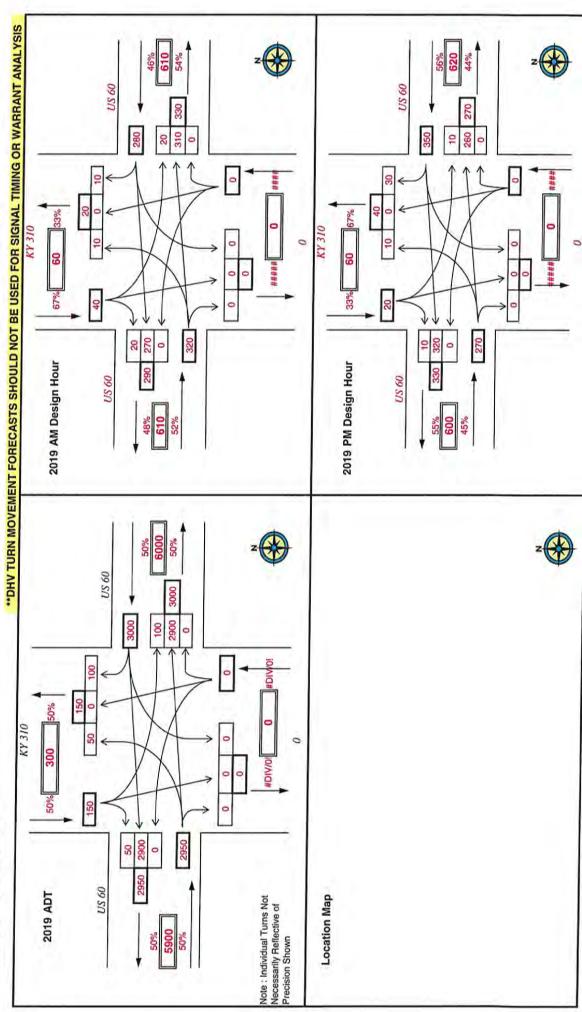
ANALYST: YEAR:

2019 A US 60 & KY 310 INTERSECTION:

ADT and Design Hour Volumes

TURN MOVEMENT (2019)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2019 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.



US 60 Ballard Count

ITEM NUMBER:

MARS NUMBER:

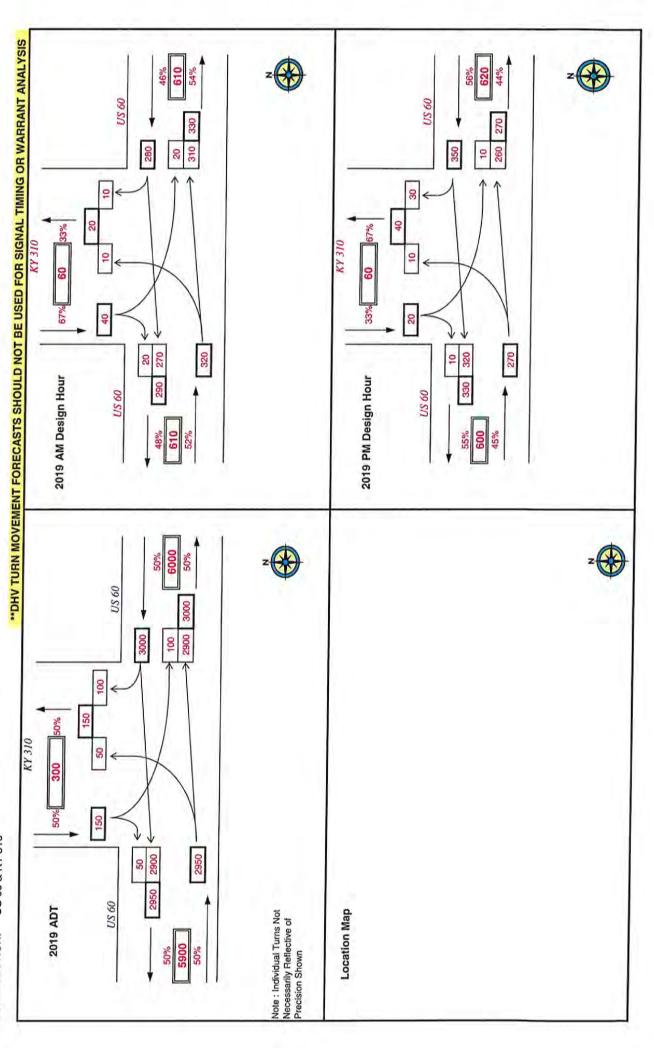
0 Saturday, January 0, 1900 REQUEST DATE: ANALYST:

2019 A US 60 & KY 310 INTERSECTION: YEAR:

ADT and Design Hour Volumes

TURN MOVEMENT (2019)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2019 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.



PROJECT: US 60 Ballard Count ITEM NUMBER: 0

MARS NUMBER: 0

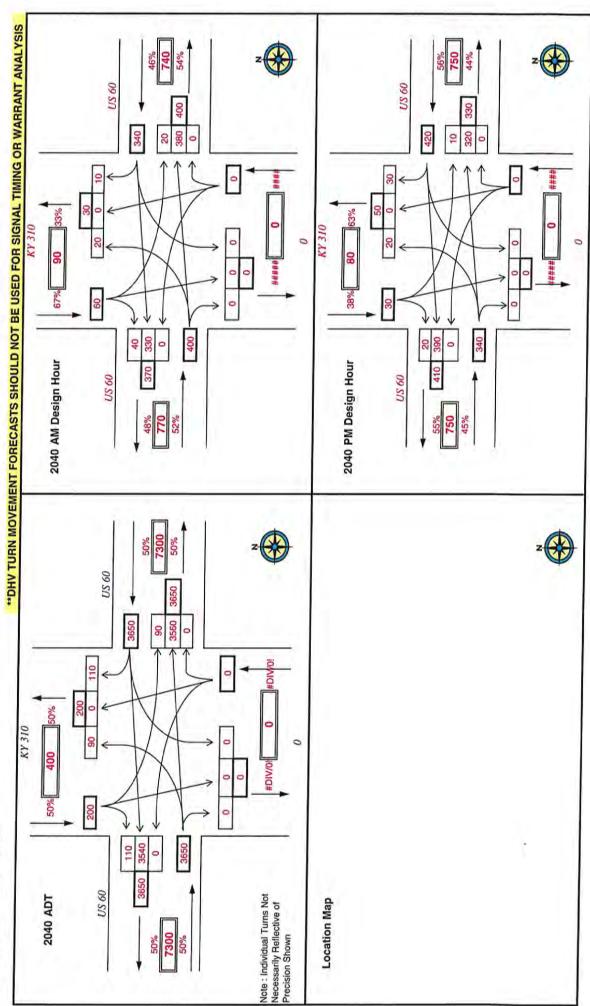
MEQUEST DATE: Saturday, January 0, 1900

ANALYST: 0 YEAR: 2040 ADT and D

YEAR: 2040 ADT and Design Hour Volumes INTERSECTION: US 60 & KY 310

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2040 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2040)



US 60 Ballard Count PROJECT:

MARS NUMBER: ITEM NUMBER:

Saturday, January 0, 1900 0 REQUEST DATE:

ANALYST: YEAR:

ADT and Design Hour Volumes US 60 & KY 310 INTERSECTION:

TURN MOVEMENT (2040)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2040 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

**DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS 750 54% US 60 US 60 340 380 420 320 20 10 30 20 KY 310 KY 310 09 340 400 390 9 330 20 2040 AM Design Hour 2040 PM Design Hour US 60 US 60 48% 20 55% 45% 20% US 60 3650 3560 8 110 200 KY 310 8 200 3650 3540 110 US 60 Note: Individual Turns Not Necessarily Reflective of Precision Shown 2040 ADT Location Map

20%

PROJECT:

ITEM NUMBER:

MARS NUMBER:

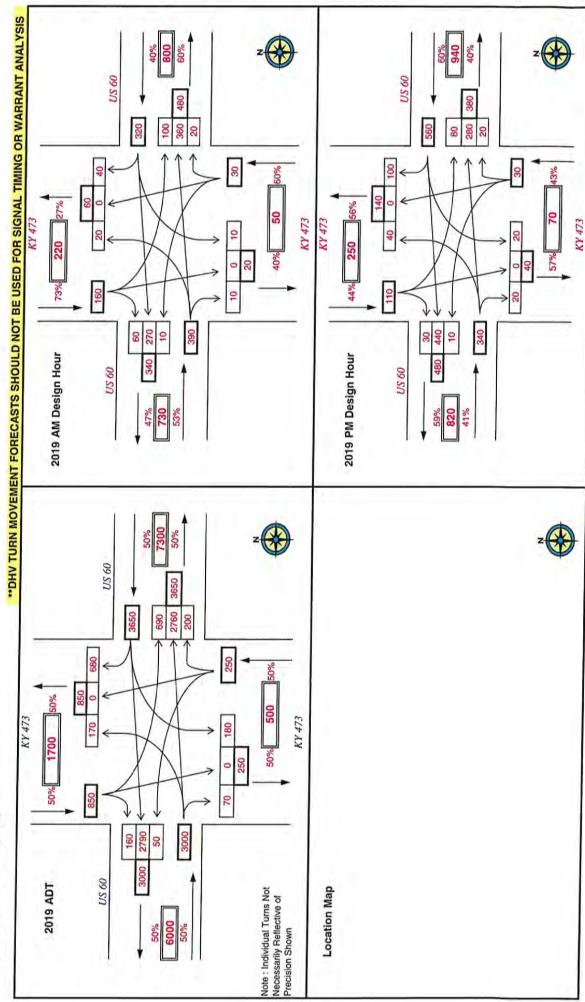
0 0 0 Saturday, January 0, 1900 REQUEST DATE: ANALYST:

ADT and Design Hour Volumes 2019 A US 60 & KY 473 YEAR:

INTERSECTION:

TURN MOVEMENT (2019)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2019 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.



PROJECT:

MARS NUMBER: ITEM NUMBER:

0 0 0 Saturday, January 0, 1900 REQUEST DATE:

ANALYST:

US 60 & KY 473 2019 INTERSECTION: YEAR:

ADT and Design Hour Volumes

TURN MOVEMENT (2019)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2019 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver,

**DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS 760 999 61% 45% 58% 39% 09 SA US 60 280 360 460 280 50 20 30 30 KY 473 20 20 370 270 440 300 9 9 2019 AM Design Hour 2019 PM Design Hour 450 US 60 US 60 650 57% 5930 20% US 60 2970 2760 500 KY 473 180 20 2790 2830 20 2840 US 60 2019 ADT Note: Individual Turns Not Location Map Necessarily Reflective of

Precision Shown

5670

KY 473

ITEM NUMBER:

000 MARS NUMBER:

Saturday, January 0, 1900 REQUEST DATE:

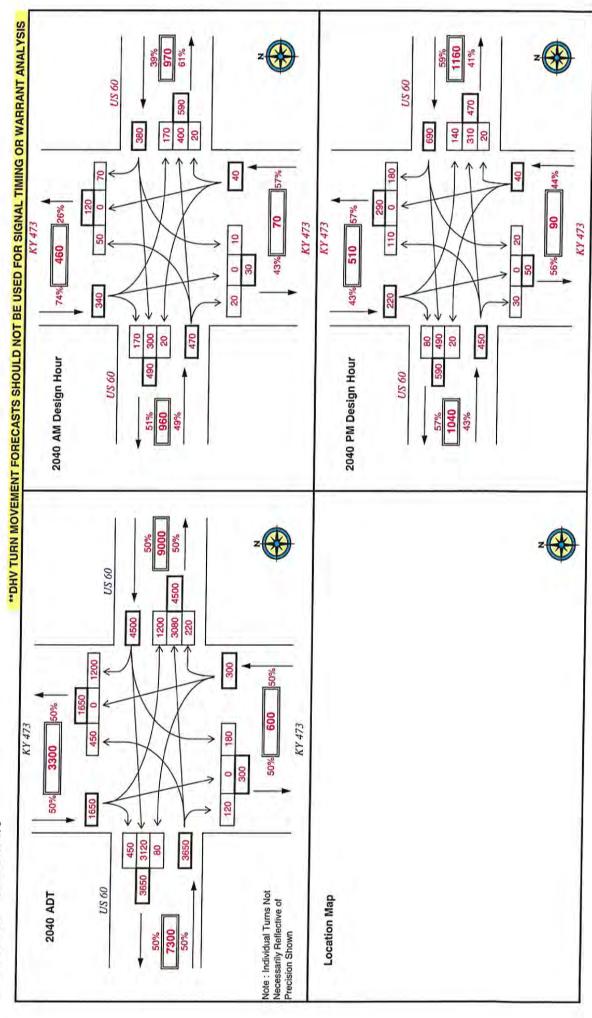
ANALYST:

ADT and Design Hour Volumes YEAR:

US 60 & KY 473 INTERSECTION:

TURN MOVEMENT (2040)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2040 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.



PROJECT:

MARS NUMBER: ITEM NUMBER:

REQUEST DATE:

0 0 0 : Saturday, January 0, 1900 0 2040 ANALYST: YEAR:

ADT and Design Hour Volumes US 60 & KY 473 INTERSECTION:

TURN MOVEMENT (2040)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2040 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

**DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS 730 58% 840 42% 39% US 60 US 60 510 310 310 400 50 40 KY 473 30 20 450 490 20 20 2040 AM Design Hour 2040 PM Design Hour 510 US 60 US 60 43% 740 %09 57% 40% 0099 20% 50% US 60 3300 3300 3080 220

KY 473

Note : Individual Turns Not Necessarily Reflective of

Precision Shown

Location Map

180

120

3120

3200

US 60

2040 ADT

8

3200

8

340

40

20

30

KY 473

APPENDIX C EXISTING NOISE ANALYSIS

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EVEL	
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ILTS: SOUND	

18407 - US 60 Ballard Co.

Ok4, Inc. JRS							28 August 2019 TNM 2.5	t 2019				
RESULTS: SOUND LEVELS PROJECT/CONTRACT:		18407	18407 - US 60 Ballard Co.	lard Co.			Calculate	Calculated with TNM 2.5	M 2.5			
BARRIER DESIGN: ATMOSPHERICS:		Exist	Existing Conditions INPUT HEIGHTS	Su .				Average a State h	Average pavement type shall be used unless a State highway agency substantiates the use	e shall be user y substantiate	d unless	
Receiver		98 08	68 deg F, 50% RH					of a diffe	of a different type with approval of FHWA.	approval of F	HWA.	
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h Calculated	Crit'n	Increase ov Calculated	Calculated Crit'n Sub'l Inc	Type	Calculated LAeq1h	Noise Reduction Calculated Goa	Goal	Calculated
			dBA	dBA	dBA	B	号		dBA	8	쁑	dB
Receiver1	1		1 0.0	0 63.5	Î	9 99	63.5 10	-	63.5	00		7 70
Receiver2	2	0.1	Î	0 64.9		9 99	64.9 10	- (64.9			7 -7.0
Receivers		8		1			63.1 10	-	63.1	0.0		7 -7.0
Heceiver4	4			ĺ	ñ	99	56.6 10	-	56.6	0.0		7 -7.0
Receivers		. C					64.6 10		64.6	0.0		7 -7.0
Receiver7	1 0								63.3	0.0		7 -7.0
Beceiver								-	64.4	0.0		7 -7.0
Receiver9	0 0		0.0					-	63.6			7 -7.0
Receiver10	D CF			1 65.1				1				7 -7.0
Receiver11	1.5					00 00	66.7 10					
Receiver12	12							ond LVI	68.4			
Receiver13	13	_	1 0.0						200.U	0.0		7 7.0
Receiver14	14		1 0.0						57.8			7.07
Receiver16	16		1 0.0	60.4		9 99		1	60.4			
Receiver17	17		1 0.0	56.6		99	56.6 10	-	56.6			
Heceiver19	19		1 0.0	0.59 65.0		9 99	65.0 10	-	65.0			
Receiver21	21		1 0.0	0 65.9		9 99	65.9	-	62.9			
Receiver22	22	61	1 0.0			99	53.9 10	1	53.9			
Hecelver23	23		1 0.0			9 99	67.5 10	Snd Lv	1			
Pooring of	24		1 0.0			9 99	68.0 10	SndLvI				
Deceived 2	52					66 4	40.4					
/Zianianau	27		1 0.0	0 64.6		9 99	64.6 10	-	64.6			

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29 1 0.0 66.2 66.9 10	Receiver28	28	1 0.0	64.3	99	64.3	10		643	00	7	10
30 1 0.0 662 662 10 602 0.0 7 32 1 0.0 664 66 10 663 0.0 7 34 1 0.0 664 66 664 10 664 0.0 7 35 1 0.0 664 66 664 10 664 0.0 7 36 1 0.0 664 66 664 10 644 0.0 7 38 1 0.0 664 66 662 10 644 0.0 7 38 1 0.0 664 66 662 662 662 66 662 66 662 66 662 66 662 66 662 0.0 7 7 40 1 0.0 664 66 662 10	Receiver29	29		62.5	99	62.5	2 0		2.50	0.0	- 1	7.0
1	Receiver30	30		602	9 9	000	2 9		02.5	0.0	,	-7.0
38 1 0.0 66.4 66.4 66.4 10 57.0 7 7 38 1 0.0 66.4 66.4 66.4 10 64.6 0.0 7 38 1 0.0 66.4 66.4 10 64.6 0.0 7 39 1 0.0 66.4 66.6 66.1 10 64.2 0.0 7 39 1 0.0 66.4 66.6 66.6 10 64.6 0.0 7 39 1 0.0 66.7 66 66.9 10 64.2 0.0 7 40 1 0.0 66.3 66 62.0 10 66.0 67.0 0.0 7 40 1 0.0 66.2 66 62.0 10 66.0 0.0 7 40 1 0.0 62.2 <td>Receiver31</td> <td>33</td> <td></td> <td>2.00</td> <td>8 8</td> <td>200.0</td> <td>0 0</td> <td></td> <td>2.09</td> <td>0.0</td> <td>7</td> <td>-7.0</td>	Receiver31	33		2.00	8 8	200.0	0 0		2.09	0.0	7	-7.0
33 1 0.04 60.4 60.4 60.4 60.4 60.7 0.0 7 34 1 0.0 65.4 60.7 60.7 10 60.7 60.7 0.0 7 35 1 0.0 64.3 66 64.3 10 66.6 0.0 7 36 1 0.0 64.2 66 64.3 10 66.6 0.0 7 38 1 0.0 65.2 66 64.2 10 66.0 0.0 7 39 1 0.0 65.2 66 62.9 10 66.0 7 7 40 1 0.0 65.2 66 62.9 10 66.0 7 7 7 40 1 0.0 45.2 66 62.9 10 66.0 7 7 7 7 7 7 7 7 7 7 7 7 7	Receiver32	30		0.4.0	00	04.0			64.6	0.0	7	-7.0
34 1 0.0 66.4 66.9 66.9 67.0 10	Receiver33	20 00		900,4	99	66.4	Y.,	2	66.4	0.0	7	-7.0
35 1 0.0 64.6 66.7 10	Bocoinor34	8 8		63.9	99	63.9	10		63.9	0.0	7	-7.0
35 1 0.0 64.6 66.6 64.6 10 64.6 0.0 7 36 1 0.0 64.2 66 64.2 10 64.2 0.0 7 38 1 0.0 62.9 66 63.1 10 64.2 0.0 7 38 1 0.0 62.9 66 62.9 10 62.9 0.0 7 40 1 0.0 62.9 66 62.9 10 62.9 0.0 7 42 1 0.0 62.9 66 62.9 10 45.9 0.0 7 44 1 0.0 42.9 66 42.9 10 45.9 0.0 7 44 1 0.0 42.9 66 42.9 10 42.9 0.0 7 45 1 0.0	neceive 34	34	Ĭ	2.09	99	2.09	01		60.7	0.0	7	-7.0
36 1 0.0 64.2 66.3 10 64.3 10 64.3 10 64.3 10 64.2 10 64.2 0.0 7 38 1 0.0 68.3 66 68.3 10 68.1 0.0 7 38 1 0.0 68.3 66 68.3 10 68.2 0.0 7 49 1 0.0 45.3 66 45.3 10 45.3 0.0 7 44 1 0.0 45.3 66 45.3 10 45.3 0.0 7 44 1 0.0 42.0 66 42.0 10 45.3 0.0 7 45 1 0.0 42.0 66 42.0 10 42.0 0.0 7 45 1 0.0 42.	necelverso	35		64.6	99	64.6	10		64.6	0.0	7	-7.0
37 1 0.0 64.2 66 64.2 10 64.2 0.0 7 39 1 0.0 62.3 66 62.9 10 62.9 0.0 7 40 1 0.0 45.3 66 62.9 10 62.9 0.0 7 40 1 0.0 45.3 66 45.3 10 62.9 0.0 7 43 1 0.0 45.3 66 45.3 10 45.3 0.0 7 44 1 0.0 42.0 66 42.0 10 42.0 0.0 7 45 1 0.0 42.0 66 42.0 10 42.0 0.0 7 46 1 0.0 42.2 66 42.0 10 42.0 0.0 7 45 1 0.0	Receiver36	36	1 0.0	64.3	99	64.3	10	1	64.3	0.0	7	-7.0
38 1 0.0 68.31 66 68.31 10 68.31 0.0 7 40 1 0.0 52.0 66 52.0 10 62.9 0.0 7 42 1 0.0 45.9 66 45.0 10 52.0 0.0 7 44 1 0.0 45.3 66 45.3 10 45.3 0.0 7 45 1 0.0 42.6 66 42.6 10 42.0 0.0 7 45 1 0.0 42.6 66 42.6 10 42.0 0.0 7 48 1 0.0 42.2 66 42.6 10 42.0 0.0 7 48 1 0.0 42.2 66 42.6 10 42.0 0.0 7 51 1 0.0	Heceiver37	37	1 0.0	64.2	99	64.2	10	1	64.2	0.0	7	.70
39 1 0.0 62.9 66 62.9 10 62.9 0.0 7 40 1 0.0 45.0 66 45.9 10 52.0 0.0 7 42 1 0.0 45.3 66 45.9 10 45.3 0.0 7 44 1 0.0 42.0 66 42.0 10 43.1 0.0 7 44 1 0.0 42.0 66 42.0 10 43.1 0.0 7 48 1 0.0 42.0 66 42.0 10 42.0 0.0 7 48 1 0.0 42.2 66 42.0 10 42.0 0.0 7 48 1 0.0 42.1 66 42.0 10 42.0 0.0 7 50 1 0.0	Heceiver38	38		63.1	99	63.1	10	,	63.1	0.0		27.0
40 1 0.0 \$2.0 66 \$2.0 10 \$2.0 0.0 7 44 1 0.0 45.3 66 45.3 10 45.9 0.0 7 44 1 0.0 45.3 66 45.3 10 45.9 0.0 7 45 1 0.0 42.1 66 42.1 10 45.9 0.0 7 48 1 0.0 42.2 66 42.2 10 42.2 0.0 7 48 1 0.0 42.2 66 42.2 10 42.2 0.0 7 50 1 0.0 40.1 66 40.1 10 42.2 0.0 7 50 1 0.0 40.1 66 40.1 10 42.1 0.0 7 51 1 0.0	Receiver39	39	1 0.0	62.9	99	62.9	10	1	629	00	- 1	2. 7.
42 1 0.0 45.3 66 46.9 10 45.3 0.0 7 44 1 0.0 45.3 66 45.3 10 45.3 0.0 7 45 1 0.0 42.1 66 42.6 10 42.6 0.0 7 48 1 0.0 42.2 66 42.6 10 42.6 0.0 7 49 1 0.0 42.2 66 42.6 10 42.6 0.0 7 49 1 0.0 41.3 66 42.6 10 42.6 0.0 7 50 1 0.0 40.1 66 40.8 66 40.8 10 40.1 0.0 7 52 1 0.0 40.2 66 62.0 10 40.1 40.1 0.0 0.0	Receiver40	40		52.0	99	52.0	10	1	52.0	00	7	7.0
43 1 0.0 45.3 66 45.3 10 45.3 0.0 7 44 1 0.0 42.1 66 42.1 10 45.3 0.0 7 45 1 0.0 42.0 66 42.0 10 42.6 0.0 7 46 1 0.0 42.2 66 42.2 10 42.2 0.0 7 49 1 0.0 42.2 66 42.2 10 42.2 0.0 7 50 1 0.0 42.2 66 40.8 10 42.2 0.0 7 50 1 0.0 40.1 66 40.1 10 42.2 0.0 7 51 1 0.0 42.0 66 40.1 10 42.2 0.0 7 52 1 0.0	Receiver42	45		45.9	99	45.9	10		45.9	0.0	- 1	7.0
44 1 0.0 43.1 66 42.1 10 43.1 0.0 7 45 1 0.0 42.6 66 42.6 10 42.6 0.0 7 48 1 0.0 42.2 66 42.2 10 42.6 0.0 7 49 1 0.0 41.3 66 41.3 10 42.0 0.0 7 50 1 0.0 41.3 66 41.3 10 42.0 0.0 7 51 1 0.0 41.3 66 40.1 10 42.0 0.0 7 52 1 0.0 40.1 66 62.0 10 40.1 0.0 7 52 1 0.0 62.0 66 62.0 10 40.1 0.0 7 52 1 0.0	Receiver43	43		45.3	99	45.3	10	1	45.3	0.0		2.7.0
46 1 0.0 42.6 66 42.6 10 42.6 0.0 7 47 1 0.0 42.0 66 42.0 10 42.0 0.0 7 48 1 0.0 41.3 66 42.2 10 42.2 0.0 7 50 1 0.0 40.3 66 40.3 10 42.2 0.0 7 51 1 0.0 40.3 66 40.3 10 40.3 0.0 7 52 1 0.0 40.1 66 40.1 10 40.3 0.0 7 54 1 0.0 62.1 66 62.0 10 40.1 0.0 7 55 1 0.0 62.1 66 62.0 10 62.0 0.0 7 58 1 0.0	Receiver44	44		43.1	99	43.1	10		43.1	0.0	- 1	1.0
47 1 0.0 42.0 66 42.0 10	Receiver45	45		42.6	99	42.6	101		42.6	0.0	- 1	0.7-
48 1 0.0 42.2 66 42.2 10 42.2 0.0 7 50 1 0.0 41.3 66 41.3 10 40.8 0.0 7 51 1 0.0 40.8 66 40.8 10 40.8 0.0 7 52 1 0.0 40.8 66 62.0 10 40.1 0.0 7 55 1 0.0 62.0 66 62.0 10 62.0 0.0 7 56 1 0.0 62.0 66 62.0 10 62.0 0.0 7 56 1 0.0 62.1 66 62.0 10 62.0 0.0 7 56 1 0.0 62.1 66 65.3 10 62.0 0.0 7 60 1 0.0	Receiver47	47		42.0	99	42.0	2 0		42.0	0.0	- 1	7.0
49 1 0.0 41.3 66 40.1 0 42.2 0.0 7 50 1 0.0 40.3 66 40.1 10 40.1 0.0 7 51 1 0.0 40.1 66 40.1 10 40.1 0.0 7 52 1 0.0 62.0 66 62.0 10 40.1 0.0 7 55 1 0.0 62.1 66 62.0 10 40.1 0.0 7 56 1 0.0 62.1 66 62.0 10 62.0 0.0 7 58 1 0.0 62.1 66 63.0 10 63.0 0.0 7 60 1 0.0 62.2 66 63.0 10 63.0 0.0 7 61 1 0.0 62.4	Receiver48	48		42.2	99	000	2 4		42.0	0.0	7	0.7-
50 1 0.0 40.8 66 40.8 10	Receiver49	49		413	3 8	14.3	2 5		42.2	0.0	,	-7.0
51 1 0.0 40.0 60.0 40.0 10	Receiver50	20		8.04	2 3	2007	0 0		6.14	0.0	1	-7.0
52 1 0.0 39.8 66 39.8 10 40.1 0.0 7 54 1 0.0 62.0 66 62.0 10 39.8 0.0 7 55 1 0.0 62.1 66 62.0 10 62.1 0.0 7 56 1 0.0 62.1 66 62.1 10 62.1 0.0 7 56 1 0.0 63.0 66 66.3 10 62.1 0.0 7 60 1 0.0 65.0 66 66.3 10 65.0 0.0 7 61 1 0.0 60.4 66 66.7 10 65.0 0.0 7 62 1 0.0 60.4 66 60.4 10 65.0 0.0 7 62 1 0.0	Receiver51	2 2		10,0	000	40.0	01 5		40.8	0.0	7	-7.0
54 1 0.0 59.0 66.0 66.1 10 39.8 0.0 7 55 1 0.0 62.1 66.9 66.9 66.9 10 62.0 0.0 7 56 1 0.0 66.9 66.9 66.9 10 62.1 0.0 7 56 1 0.0 65.0 66.9 66.9 10 63.0 0.0 7 60 1 0.0 65.3 66 65.3 10 63.0 0.0 7 61 1 0.0 65.2 66 65.7 10 66.7 0.0 7 62 1 0.0 66.4 66 66.4 10 66.7 0.0 7 62 1 0.0 66.4 66 66.4 10 66.7 0.0 7 63 1 <td>Receiver52</td> <td>50</td> <td></td> <td>10.</td> <td>00</td> <td>40.1</td> <td>- 01</td> <td></td> <td>40.1</td> <td>0.0</td> <td>7</td> <td>-7.0</td>	Receiver52	50		10.	00	40.1	- 01		40.1	0.0	7	-7.0
54 1 0.0 62.0 62.0 10	Beceiver54	70		39.8	90	39.8			39.8	0.0	7	-7.0
35 1 0.0 62.1 66.9 62.1 10 62.1 0.0 7 56 1 0.0 66.9 66.9 10 5nd Lvl 66.9 0.0 7 56 1 0.0 63.0 66 63.0 10 63.0 0.0 7 60 1 0.0 63.0 66 65.7 10 65.0 0.0 7 61 1 0.0 65.7 66 66.7 10 65.0 0.0 7 62 1 0.0 66.7 66 66.4 10 66.7 0.0 7 62 1 0.0 62.4 66 66.3 10 66.4 0.0 7 64 1 0.0 65.2 66 66.3 10 66.3 0.0 7 66 1 0.0 43.5 <td>Borowski</td> <td>4C 1</td> <td></td> <td>62.0</td> <td>99</td> <td>62.0</td> <td>- 01</td> <td></td> <td>62.0</td> <td>0.0</td> <td>7</td> <td>-7.0</td>	Borowski	4C 1		62.0	99	62.0	- 01		62.0	0.0	7	-7.0
56 1 0.0 66.9 66.9 66.9 10 Snd LvI 66.9 0.0 7 57 1 0.0 63.0 66 63.0 10 63.0 0.0 7 68 1 0.0 65.7 66 65.7 10 65.3 0.0 7 61 1 0.0 65.7 66 66.4 10 65.7 0.0 7 62 1 0.0 60.4 66 60.4 10 66.7 0.0 7 63 1 0.0 60.4 66 60.4 10 60.4 0.0 7 64 1 0.0 66.2 66 66.3 10 60.4 0.0 7 65 1 0.0 65.2 66 65.2 10 65.2 0.0 7 66 1 0.0	Dominario	25		62.1	99	62.1	10	1	62.1	0.0	7	-7.0
57 1 0.0 63.0 66 63.0 10 63.0 0 7 58 1 0.0 53.9 66 53.9 10 53.9 0.0 7 60 1 0.0 65.7 66 66.7 10 65.7 0.0 7 62 1 0.0 60.4 66 60.4 10 66.4 0.0 7 63 1 0.0 62.4 66 60.4 10 60.4 0.0 7 64 1 0.0 62.4 66 66.3 10 62.4 0.0 7 65 1 0.0 65.2 66 66.3 10 65.2 0.0 7 66 1 0.0 43.5 66 66.3 10 65.2 0.0 7 66 1 0.0 <	neceiveroo	99		6.99	99	6.99	27	[v]	6.99	0.0	7	-7.0
58 1 0.0 53.9 66 53.9 10 53.9 0.0 7 60 1 0.0 65.7 66 66.7 10 65.7 0.0 7 61 1 0.0 60.4 66 60.4 10 60.4 0.0 7 62 1 0.0 60.4 66 60.4 10 60.4 0.0 7 63 1 0.0 62.4 66 62.4 10 60.4 0.0 7 64 1 0.0 66.3 66 66.3 10 62.4 0.0 7 65 1 0.0 65.2 66 66.3 10 66.2 0.0 7 66 1 0.0 43.5 66 43.5 10 43.5 0.0 7 68 1 0.0	Receivers/	22		63.0	99	63.0	10		63.0	0.0	7	-7.0
60 1 0.0 65.7 66 65.7 10 65.7 0.0 7 61 1 0.0 60.4 66 60.4 10 60.4 0.0 7 62 1 0.0 60.4 66 60.4 10 60.4 0.0 7 63 1 0.0 62.4 66 60.4 10 60.4 0.0 7 64 1 0.0 62.4 66 66.3 10 62.4 0.0 7 65 1 0.0 65.2 66 66.3 10 62.4 0.0 7 66 1 0.0 65.2 66 65.2 10 66.2 0.0 7 66 1 0.0 43.5 66 43.5 10 43.5 0.0 7 68 1 0.0	Heceiver58	28		53.9	99	53.9	10	i	53.9	0.0	7	-7.0
61 1 0.0 60.4 66 60.4 10 60.4 0.0 7 62 1 0.0 62.4 66 60.4 10 60.4 0.0 7 63 1 0.0 62.4 66 62.4 10 62.4 0.0 7 64 1 0.0 65.2 66 66.3 10 62.4 0.0 7 65 1 0.0 65.2 66 65.2 10 65.2 0.0 7 66 1 0.0 43.5 66 43.5 10 43.5 0.0 7 67 1 0.0 43.1 66 43.1 10 43.1 0.0 7 68 1 0.0 42.7 66 42.7 10 42.0 0.0 7 7 1 0.0	Receiver60	09		65.7	99	65.7	10	1	65.7	0.0	7	-7.0
62 1 0.0 60.4 66 60.4 10 60.4 0.0 7 63 1 0.0 62.4 10 62.4 0.0 7 64 1 0.0 66.3 66 66.3 10 65.2 0.0 7 66 1 0.0 65.2 66 65.2 10 65.2 0.0 7 66 1 0.0 43.5 66 43.5 10 43.5 0.0 7 67 1 0.0 43.1 66 43.1 10 43.5 0.0 7 68 1 0.0 42.7 66 42.7 10 42.7 0.0 7 70 1 0.0 42.3 66 42.3 10 42.3 0.0 7 89 1 0.0 42.0 66	Receiver01	61		60.4	99	60.4	10	1	60.4	0.0	7	-7.0
63 1 0.0 62.4 66 62.4 10 62.4 0 7 64 1 0.0 66.3 66 66.3 10 66.3 0.0 7 65 1 0.0 65.2 66 65.2 10 65.2 0.0 7 66 1 0.0 43.5 66 43.5 10 43.5 0.0 7 68 1 0.0 42.7 66 42.7 10 42.7 0.0 7 69 1 0.0 42.3 66 42.3 10 42.3 0.0 7 70 1 0.0 42.3 66 42.0 10 42.0 0.0 7 64 1 0.0 42.0 66 42.0 10 42.0 0.0 7 7 1 0.0 <t< td=""><td>Heceiver62</td><td>62</td><td></td><td>60.4</td><td>99</td><td>60.4</td><td>- 01</td><td>,</td><td>60.4</td><td>0.0</td><td>7</td><td>-7.0</td></t<>	Heceiver62	62		60.4	99	60.4	- 01	,	60.4	0.0	7	-7.0
64 1 0.0 66.3 66 66.3 10 Snd LvI 66.3 0.0 7 65 1 0.0 65.2 66 65.2 10 65.2 0.0 7 66 1 0.0 43.5 66 43.5 10 43.5 0.0 7 68 1 0.0 42.7 66 42.7 10 42.7 0.0 7 69 1 0.0 42.3 66 42.3 10 42.7 0.0 7 70 1 0.0 42.3 66 42.3 10 42.3 0.0 7 71 1 0.0 41.5 10 41.5 0.0 7	Receiverb3	83		62.4	99	62.4	10	1	62.4	0.0	7	-7.0
65 1 0.0 65.2 66 65.2 10 65.2 0.0 7 66 1 0.0 43.5 66 43.5 10 43.5 0.0 7 68 1 0.0 42.7 66 42.7 10 42.7 0.0 7 69 1 0.0 42.3 66 42.3 10 42.3 0.0 7 70 1 0.0 42.0 66 42.0 10 42.3 0.0 7 71 1 0.0 41.5 10 41.5 0.0 7	Receiver64	64	9	66.3	99	66.3	13	[N	66.3	0.0	7	-7.0
66 1 0.0 43.5 66 43.5 10 43.5 0.0 7 67 1 0.0 42.7 66 42.7 10 43.1 0.0 7 69 1 0.0 42.3 66 42.3 10 42.3 0.0 7 70 1 0.0 42.0 66 42.0 10 42.3 0.0 7 71 1 0.0 41.5 66 41.5 10 42.5 0.0 7	Receiverbs	65		65.2	99	65.2	10	,	65.2	0.0	7	-7.0
67 1 0.0 43.1 10 43.1 0.0 7 68 1 0.0 42.7 66 42.7 10 42.7 0.0 7 70 1 0.0 42.0 66 42.3 10 42.3 0.0 7 71 1 0.0 41.5 66 41.5 10 41.5 0.0 7	Receiverob	99		43.5	99	43.5	10		43.5	0.0	7	-7.0
68 1 0.0 42.7 10 42.7 10 42.7 0.0 7 69 1 0.0 42.3 66 42.3 10 42.3 0.0 7 70 1 0.0 42.0 66 42.0 10 42.0 0.0 7 71 1 0.0 41.5 66 41.5 10 41.5 0.0 7	Heceiver67	29		43.1	99	43.1	10		43.1	0.0	7	-7.0
69 1 0.0 42.3 66 42.3 10 42.3 0.0 7 70 1 0.0 42.0 66 42.0 10 42.0 7 71 1 0.0 41.5 66 41.5 10 41.5 0.0 7	Receiver68	89	1 0.0	42.7	99	42.7	10	4	42.7	0.0	7	7.0
70 1 0.0 42.0 10 42.0 10 42.0 7 71 1 0.0 41.5 66 41.5 10 41.5 0.0 7	Receiverby	69		42.3	99	42.3	10	1	42.3	0.0	7	7.0
71 1 0.0 41.5 66 41.5 10 41.5 0.0 7	neceiver/0	20		42.0	99	42.0	10		45.0	0.0	1	.70
0.0	Receiver/1	11	3	41.5	99	41.5	10	7	41.5	0.0	7	7.0

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Receiver73 Receiver74	72	-	0.0	41.8	99	41.8 10	10	1	11.0	00		1
Receiver74	73	-	0.0	41.3	99	413	10		74.0	0.0	- 1	7.0
	74		00	40.0	99	0.00	2 9		6.14	0.0	,	0.7-
Receiver75	75	-	200	40.4	0 0	40.3	2 9)	40.9	0.0	7	-7.0
Receiver77	2 12		2 0	100	00 00	40.1	01	1	40.1	0.0	7	-2.0
Receiver78	70		0.0	7.60	8	39.7	10	1	39.7	0.0	7	-7.0
Beceiver70	0 %		0.0	38.9	99	38.9	10	1	38.9	0.0	7	-7.0
Doceivel/8	6/		0.0	38.7	99	38.7	10	1	38.7	0.0	7	-7.0
Receiverau	80		0.0	38.8	99	38.8	10	1	38.8	0.0	7	-7.0
Hecelver82	85		0.0	64.8	99	64.8	10	1	64.8	0.0	7	-7.0
Receiver83	83	-	0.0	62.9	99	62.9	10	ı	62:9	0.0	7	-7.0
Receiver84	84	-	0.0	63.4	99	63.4	10	ı	63.4	0.0	7	27.0
Receiver85	82	+	0.0	65.5	99	65.5	10	1	65.5	00	7	7.0
Receiver86	98	1	0.0	64.8	99	64.8	10	-	64.8	0.0	7	7.0
Receiver87	87	1	0.0	64.5	99	64.5	10	-	64.5	000	1	7.0
Receiver88	88	1	0.0	64.7	99	64.7	10		64.7	000		7.0
Receiver89	89	-	0.0	64.7	99	64.7	10	i	64.7	000	1	7.0
Receiver91	91	-	0.0	62.9	99	62.9	10	1	62 0	000	. 1	2.7.0
Receiver92	92	-	0.0	64.1	99	64.1	10	***	64.1	0.0	1	7.0
Receiver93	83	1	0.0	64.6	99	64.6	10	-	278	0.00	- 1	2.7
Receiver95	36	-	0.0	63.0	99	63.0	10	1	63.0	0.0	, 1	7.0
Receiver96	96	-	0.0	9.99	99	999	10	Sndlvl	200	0.00	- 1	1.0
Receiver98	86	-	0.0	43.8	99	43.8	10		43.8	0.0	, ,	7.0
Receiver100	100	-	0.0	61.8	99	61.8	10	1	61.8	000	1	7.0
Receiver101	101	-	0.0	55.6	99	55.6	10	I	55.6	0.0	1	7.0
Receiver102	102	-	0.0	48.3	99	48.3	10	i	48.3	00	, ,	7.0
Receiver103	103	-	0.0	44.6	99	44.6	10	-	44.6	000	- 1	200
Receiver104	104	1	0.0	43.7	99	43.7	10	1	43.7	0.0	7	27.0
Receiver105	105	-	0.0	43.1	99	43.1	10	1	43.1	0.0	7	-7.0
Receiver106	106		0.0	43.3	99	43.3	10		43.3	0:0	7	-7.0
Receiver107	107		0.0	6.65	99	59.9	10	1	59.9	0.0	7	-7.0
neceiver 108	108		0.0	0.09	99	0.09	10	ı	0.09	0.0	7	-7.0
Descrivering	109		0.0	8.09	99	8.09	10	1	8.09	0.0	7	-7.0
Position 110	011		0.0	60.5	99	60.5	10	1	60.5	0.0	7	-7.0
Dooglood			0.0	64.5	99	64.5	10	1	64.5	0.0	7	-7.0
Descrived 12	112		0.0	29.7	99	29.7	10	1	29.7	0.0	7	-7.0
Doorwood 1	113		0.0	62.8	99	62.8	10	1	62.8	0.0	7	-7.0
Received 16	114		0.0	45.3	99	45.3	10	1	45.3	0.0	7	-7.0
Receiver 177	115		0.0	63.1	99	63.1	10	i	63.1	0.0	7	-7.0
Receiver 110	711		0.0	66.7	99	66.7	10	Snd Lvl	2.99	0.0	7	-7.0
I I I I I I I I I I I I I I I I I I I	BLL	-	0.0	41.6	99	41.6	10	ł	41.6	0.0	7	-7.0

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RESULTS: SOUND LEVELS							1840	7-115 60	18407 - 11S 60 Ballard Co.				
Receiver120	120	-	0.0		41.2	99	41.2	10	2000	44.0	0	Ţ	1
Receiver121	101	7	0			3 6		2		7.14	0.0	,	0./-
	171	- 1	0.0		40.3	99	40.3	10	1	40.3	0.0	7	-70
Receiver122	122	-	0.0		40.0	99	40.0	101	1	VOV	000		2.0
Receiver123	123	-	0.0		40.4	99	40.4	0,0		200	0.00	, ,	0.7-
Receiver124	124	-	00		74.0	99		2 9		40.4	0.0	,	0.7-
107		-	5		2	00	0.14	01	1	41.0	0.0	7	-7.0
Heceiver125	125	,-	0.0		42.8	99	42.8	10	1	A C V	00	r	1
Receiver 126	406	*	0		1	1	200	2		45.0	0.0	,	0./-
	071	-	0.0		46.2	99	46.2	10	1	46.2	0.0	7	-70
Dwelling Units	#	# DUS Noise	ise Rec	Reduction									2
		Min		Avg	Max	×							
		留		8	용								
All Selected		110	0.0		0.0	0.0							
All Impacted		6	0.0		0.0	0.0							
All that meet NR Goal		0	0.0		0.0	0.0							

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8 August 2 TNM 2.5 Calculated existing Crit'n Sub'l Inc	Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA. Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA. With Barrier With Barrier Calculated Calculated Goal Sub'l Inc Calculated Calculated Goal Calculated Calculated Goal Calculated Calculated	Calculated minus Goal dB
Existing Site 19:11 am INPUT HEIGHTS Existing Site 19:11 am INPUT HEIGHTS SPHERICS: 68 deg F, 50% RH Action of the control of the contro	Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA. With Barrier With Barrier With Barrier With Barrier Crit'n Impact Calculated Calculated Goal Sub'l Inc Galculated Calculated Goal Sub'l Inc Galculated Goal Sub'l Inc Galculated Goal Sub'l Inc Galculated Goal Galculated Goal Colourated Goal Galculated Goal	s Page
Feritating No. #DUs Existing No. #DUs Existing LAeq1h LAeq1h LAeq1h LAeq1h LAeq1h Calculated Crit'n Calculated Crit'n Sub'l Inc. ver1 1 0 67.2 66 67.2 10 ver2 2 1 0.0 65.6 66 65.5 10 ver3 3 1 0.0 62.5 66 62.5 10 ver4 4 1 0.0 62.5 66 62.5 10 ver5 5 1 0.0 62.5 66 62.5 10 ver5 65 65 65 65 65 65 10	With Barrier Crit'n Impact Calculated Noise Reduction Crit'n Impact LAeq1h Calculated Goal Sub'l Inc dB dB dB dB 7.2 10 Snd Lvl 65.6 0.0 7 2.5 10 65.6 0.0 7 2.5 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.5 10 62.5 0.0 7 2.6 10 62.5 0.0 7 2.6 10 62.5 0.0 7	s late
No. #DUs Existing No Barrier Increase over existing Type	With Barrier Crit'n Impact Calculated Noise Reduction Crit'n Impact LAeq1h Calculated Goal Sub'l Inc dB dB dB dB 7.2 10 Snd Lvl 65.2 0.0 7 5.6 10 65.6 0.0 7 2.5 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.9 10 7 62.5 0.0 7 2.9 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.6 10 62.5 0.0 7 2.9 10 62.5 0.0 7	s age
LAeq1h LAeq1h Increase over existing Type	Crit'n Impact Calculated Noise Reduction Crit'n Impact LAeq1h Calculated Goal Sub'l Inc dB dB dB dB 7.2 10 Snd Lvl 67.2 0.0 7 5.6 10 65.6 0.0 7 2.5 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.9 10 62.5 0.0 7 2.5 10 62.5 0.0 7 2.5 10 62.5 0.0 7 2.5 10 62.5 0.0 7 2.6 10 62.5 0.0 7	s alate
dBA dBA dBA dBA dBA dB dB	dB dBA dB T	4111
1 0 0.0 67.2 66 67.2 10 2 1 0.0 65.6 66 65.6 10 3 1 0.0 62.5 66 62.5 10 4 1 0.0 62.9 66 62.9 10 5 1 0.0 62.5 66 62.9 10	10 Snd LvI 67.2 0.0 10 65.6 0.0 10 62.5 0.0 10 62.9 0.0 10 62.5 0.0 10 62.5 0.0	-7.0
2 1 0.0 65.6 66 65.6 10 3 1 0.0 62.5 66 62.5 10 4 1 0.0 62.9 66 62.9 10 5 1 0.0 62.5 66 62.9 10	10 — 65.6 0.0 10 — 62.5 0.0 10 — 62.9 0.0 10 — 62.5 0.0 10 — 62.5 0.0 10 — 62.5 0.0	2.1
3 1 0.0 62.5 66 62.5 10 4 1 0.0 62.9 66 62.9 10 5 1 0.0 62.5 66 62.5 10	10 62.5 0.0 10 62.9 0.0 10 62.5 0.0 10 62.5 0.0	-7.0
4 1 0.0 62.9 66 62.9 10 5 1 0.0 62.5 66 62.5 10	10 62.9 0.0 10 62.5 0.0 10 62.5 0.0	-7.0
5 1 0.0 62.5 66 62.5 10	10 62.5 0.0	-7.0
	10 62.6 0.0	-7.0
6 1 0.0 62.6 66 62.6 10		-7.0
Heceiver7 7 1 0.0 61.9 66 61.9 10	10 61.9 0.0	7.0
House of Prayer 9 0 0.0 64.8 66 64.8 10	10 64.8 0.0	2.0
Dwelling Units # DUs Noise Reduction		2
Min Avg Max		
8P 8P 8P		
All Selected 6 0.0 0.0 0.0		
All Impacted 0 0.0 0.0 0.0		
All that meet NR Goal 0.0 0.0 0.0 0.0		

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					•	18402 US 60 Ballard Co	Ballard C	0				
JARS JAS RESULTS: SOUND LEVELS PROJECT/CONTRACT: RUN: BARRIER DESIGN: ATMOSPHERICS: Receiver	18402 Existin INPUT 68 dec	18402 US 60 Ballard Co Existing Site 1 9:26 am INPUT HEIGHTS 68 deg F, 50% RH	allard Co 9:26 am TS SH			8 August 2019 TNM 2.5 Calculated wit Ave a St	8 August 2019 TNM 2.5 Calculated with TNM 2.5 Average pavel a State highw	12.5 lavement type ghway agency ent type with	orson the control of entered and see the control of a different type with approval of FHWA.	d unless s the use		
Name No.	#DUS	Existing	No Barrier					With Barrier				
		LAeq1h	LAeq1h Calculated	Critin	Increase over existing Calculated Crit'n Sub'l Inc	crit'n Sub'l Inc	Type	Calculated LAeq1h	Noise Reduction	Goal	Calculated minus Goal	
		dBA	dBA	dBA	ВB	ВB		dBA	dB	dB	g B	T
Heceiver1		0.0	66.3	99 8	5 66.3	3 10	Snd Lvl	699	0.0		7 -7	27.0
		1 0.0	0 64.9	99 6	5 64.9	10	-	64.9				2 7
Receiver3 3	8	1 0.0	62.2	99 7		10	1	62.2				2 0
Heceiver4		1 0.0	62.4	99 1	5 62.4	10	1	62.4				7.0
Receiver5		1 0.0	0 62.5	99 9	5 62.5	5 10	-	62.5				27.0
	. 9	1 0.0	62.8	99 8	5 62.8	3 10	1	62.8				7.0
Receiver7 7		1 0.0	61.5	99 9	5 61.5	5 10	1	61.5				7.0
House of Prayer 9	lly	0.0	0 64.4	99 1			1	64.4	ĺ			7.0
Dwelling Units	# DNs	Noise	Reduction									2
		Min	Avg	Max								
		B	dВ	ВB								_
All Selected		0.0	0.0	0.0	116							
All Impacted	Ü	0.0	0.0		16							
All that meet NR Goal	9	0.0	0.0		10							-

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18402 US 60 Ballard Co

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Qk4							8 August 2019	2019					
JRS							TNM 2.5						
RESULTS: SOUND LEVELS PROJECT/CONTRACT: RUN:	μ ш	18402 US 60 E Existing Site 1	18402 US 60 Ballard Co Existing Site 11:21 pm	Ballard Co 1 1:21 pm			Calculated	Calculated with TNM 2.5	2.5				
BARRIER DESIGN:	-	NPUT	INPUT HEIGHTS					Average p	avement type	Average pavement type shall be used unless	d unless		-
ATMOSPHERICS:	9	8 deg	68 deg F, 50% RH					a State high	phway agency	a State highway agency substantiates the use	s the use		_
Receiver								8	aur type with	of a direction type with approval of FRWA.	WA.		П
Name	No.	#DNs	Existing	No Barrier					With Barrier				Т
			LAeq1h	LAeq1h		Increase over existing	existing .	Туре	Calculated	Noise Reduction	tion		Т
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated	Т
							Sub'l Inc					minus	
			dBA	dBA	dBA	용	용		dBA	ВB	ф	dB dB	Т
Receiver1	-	0	0.0	6.99	99 6	6.99	10	Sndlvl	0 99	00			
Receiver2	2	-	0.0	65.4	4 66				65.4			0.7-	5 0
Receiver3	3	-	0.0		3 66				62.3				0
Receiver4	4	-	0.0	62.7	99 2				62.7) 0
Receiver5	2	-	0.0	62.4	4 66	62.4	10	1	62.4				
Heceiver6	9	-	0.0	62.5	99 9	62.5	10	I	62.5				0
Heceiver/	7	-	0.0	61.7	99 /	61.7	10	1	61.7				0
House of Prayer	6	0	0.0	64.6	99 9	64.6	01 10	ı	64.6				
Dwelling Units	#	# DNs	Noise Re	Reduction									1
			Min	Avg	Max								
			dВ	ф	쁑								
All Selected		9	0.0	0.0	0.0								
All Impacted		0	0.0	0.0									
All that meet NR Goal		0	0.0	0.0	0.0								

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RESULTS: SOUND LEVELS							18402 US 60 Ballard Co	0 Ballard	S			
Ok4							8 August 2019	2019				
JRS							TNM 2.5					
RESULTS: SOUND LEVELS							Calculated with TNM 2.5	d with TN	M 2.5			
PROJECT/CONTRACT:		18402	18402 US 60 Ball	Ballard Co								
RUN:		Existir		36 pm								
BARRIER DESIGN:		INPU	INPUT HEIGHTS					Average	Average pavement type shall be used unless	e shall be use	d unless	
ATMOSPHERICS:		68 de	68 deg F, 50% RH	x				a State I	a State highway agency substantiates the use of a different type with approval of EHWA	y substantiate	es the us	o)
Receiver									and add to	To man idea		- 11
Name	No.	#DUS	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing	r existing	Type	Calculated	Noise Reduction	tion	
				Calculated	Critin	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calcuminu
			dBA	dBA	dBA	dB	B		dBA	gp GB	B B	
Receiver1		7	0.0 0.0		64.9	66 64.9	10		64.9	00		1
Receiver2		2	1 0.0		63.3	66 63.3	3 10	-	63.3			. 1
Heceiver3		က	0.0		60.2	66 60.2	2 10	1	60.2			-
Heceiver4		4	1 0.0		9.09	9.09 60.6	9 10	i	9.09			1
Receiver5		2	1 0.0		60,4	66 60.4	4 10	1	60.4			. 1
Receiver6		9	1 0.0	1	9.09	99 99	9 10	-	9.09			-
Heceiver7		7	1 0.0		59.6	66 59.6	9 10	-	59.6			-
House of Prayer		6	0.0		62.6	66 62.6	01 10	1	62.6			. 1
Dwelling Units		# DUS	# DUs Noise Reduction	eduction								-
			Min	Avg	Max							
			留	æ	g							
All Selected			0.0		0.0	0.0						
All Impacted			0.0		0.0	0.0						
All that meet NR Goal			0.0		0.0	0.0						

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18402 US 60 Ballard Co

Qk4							8 August 2019	9119				
JRS							TNM 2.5					
RESULTS: SOUND LEVELS PROJECT/CONTRACT: RUN:		18402 US 60 E Existing Site 1	18402 US 60 Ballard Co Existing Site 1 3:00 pm	sallard Co 3:00 pm			Calculated	Calculated with TNM 2.5	2.5			
BARRIER DESIGN:		INPUT	INPUT HEIGHTS					Average p	avement type	Average pavement type shall be used unless	l unless	
ATMOSPHERICS:		68 deg	68 deg F, 50% RH	_				a State hig	hway agency	a State highway agency substantiates the use	s the use	
Receiver								5	in type with	approvar or Fr	IWA.	
Name	No.	#DNs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing	existing	Туре	Calculated	Noise Reduction	ion	
				Calculated	Crit'n	Calculated		Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
			dBA	dBA	dBA	dВ	용		dBA	ф	8	B B
Receiver1	1	0	0.0	68.6	99 9	68.6	10	Snd LvI	68.6	0.0		7 -7 0
Receiver2	2		0.0	67.1	1 66	67.1	10		67.1	0.0		
Heceiver3	ဂ	-			1 66	64.1	10	ı	64.1	0.0		
Heceiver4	4	-		64.4	4 66	64.4	10	ı	64.4	0.0		
Receiver5	2		0.0	64.3	3 66	64.3	10	1	64.3	0.0		
Heceivero	9					64.5	10	1	64.5	0.0		7 -7.0
Heceiver/	7	-	0.0	63.4	4 66	63.4	10	1	63.4	0.0		7 -7.0
House of Prayer	6	0	0.0	66.4	4 66	66.4	10	Snd Lvl	66.4	0.0		
Dwelling Units		# DNs	Noise	Reduction								
			Min	Avg	Max							
			ВB	фB	용							
All Selected		9	0.0	0.0	0.0							
All Impacted		1	0.0	0.0		10						
All that meet NR Goal		0	0.0	0.0		10						

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18402 US 60 Ballard Co

Ok4 JRS							8 August 2019	2019					
RESULTS: SOUND LEVELS							Calculate	Calculated with TNM 2.5	2.5				
PROJECT/CONTRACT:	- '	18402 US 60	IS 60 Balla	Ballard Co									
BARRIER DESIGN:	ш —	Existing Site INPUT HEIGH	existing Site 1 3:1 INPUT HEIGHTS	1 3:15 pm HTS				Average p	avement type	Average pavement type shall be used unless	d unless		
ATMOSPHERICS:	•	38 deg	68 deg F, 50% RH	_				a State high	hway agency	a State highway agency substantiates the use	s the use		
Receiver								9	ant type with	or a different type with approval of FRWA.	IWA.		П
Name	Wo.	#DUs	Existing	No Barrier					With Barrier				7
			LAeq1h	LAeq1h		Increase over existing	r existing	Type	Calculated	Noise Reduction	tion		Τ-
				Calculated	Crit'n	Calculated	Crit'n	Impact	I Aed th	Calculated	lead	Potolicion	Т
							Sub'l Inc		i i		900	minus	
			dBA	dBA	dBA	gB	B		ABA	g	9	Goal	Т
Receiver1	-	0	0.0	66.1		199		Snd	100		9	9	110
Receiver2	2	1	0.0						00.1				0. 0
Receiver3	က	-	0.0						04.0	0.0			0. 0
Receiver4	4	-	0.0						61.0			7 70	0. 0
Receiver5	2	-	0.0	61.9	99 6			1	61.9				0 0
Receiver6	9	1	0.0	62.3	3 66	5 62.3	3 10	I	62.3				0
Heceiver7	7	-	0.0	6.09	99 6	9 60.9	9 10	ı	6.09			7 -7.0	0
House of Prayer	6	0	0.0	0.490	99 0	64.0	0 10	ı	64.0				0
Dwelling Units	-	# DNs	Noise Reduction	duction									1
			Min	Avg	Max								
			명	ЯВ	쁑								_
All Selected	_	9	0.0	0.0	0.0								
All Impacted		0	0.0	0.0		10							
All that meet NR Goal		0				10							
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THM 2.5 THM	RESULTS: SOUND LEVELS								18	402 - US6	18402 - US60 Ballard Co.	Co.				
TAMA 2.5 TAMA 2.5 TAMA 2.5 TAMA 2.5 TAMA 2.5	Ok4															
18402 - US60 Balland Co. Existing Site 2 - 8-43 am E	JRS									8 August INM 2.5	2019					_
Existing Site 2	RESULTS: SOUND LEVELS								Ü	Salculated	with TN	12.5				
No. #DUS Existing No. *DUS	PROJECT/CONTRACT: RUN: BARRIER DESIGN:		18402 Existir		allard C 8:43 ar	o =					Average	and the second	1			
et Mo. #DUs Existing No. #DUs Annual Expression of Figure 1 Annual Expression of Figure 2 Annual Expression of Figure 3 Annual Expression of	ATMOSPHERICS:		68 de	a F, 50% F	#						a State h	ghway agen	y substantiat	es the us	o.	-
No. #Dus Existing No. Existing Inclusived LAeqrih LAe	Receiver										0 4 0	ent type with	approval of P	HWA.		- 11
Calculated Crift Calculated Crift Impact Calculated Crift Impact Calculated Crift Calculated Crift Calculated Crift Impact Calculated Crift Calculated Crift Impact Calculated Crift Calculated Crift Impact Calculated Calculated	Name	No.	#DUs	Existing	1	arrier						With Barrie				-
1 0 0 0 0 0 0 0 0 0		_		LAeq1h	107			Increase	over e	xisting	Type	Calculated		tion		1
11 0 0.0 0					Calc		Crit'n	Calculate		Srit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus	1
11 0 0.0 66.3 66 66.3 10 Snd Lvi 66.3 0.0 7 12 1 0.0 56.5 66 56.5 10 56.5 0.0 7 13 1 0.0 61.1 66 61.1 10 61.1 0.0 7 14 1 0.0 61.2 66 61.3 10 61.1 0.0 7 15 1 0.0 61.2 66 61.3 10 61.3 0.0 7 16 1 0.0 61.0 66.0 61.0 66.0 61.0 10 61.0 0.0 7 18 1 0.0 63.0 66 63.0 10 63.0 0.0 7 18 1 0.0 60.8 66 60.8 10 60.8 0.0 7 20 1 0.0 60.8 66 60.8 10 60.8 0.0 7 21 1 0.0 59.3 66 59.3 10 59.3 0.0 7 4 Dos Noise Reduction				dBA	dBA		JBA	명	ъ	8		dBA	dB	dB	dB dB	-
12 1 0.0 56.5 66 56.5 10 56.5 0.0 7 13 1 0.0 61.1 66 61.1 10 61.1 0.0 7 14 1 0.0 61.3 66 60.5 10 61.3 0.0 7 15 1 0.0 61.0 66 63.0 10 61.3 0.0 7 16 1 0.0 61.0 66 63.0 10 61.3 0.0 7 18 1 0.0 60.8 66 63.0 10 63.0 0.0 7 19 1 0.0 60.8 66 60.8 10 60.8 0.0 7 20 1 0.0 60.8 66 60.8 10 60.8 0.0 7 21 1 0.0 59.3 66 59.3 10 59.3 0.0 7 4 DUS Noise Reduction Avg Max	Site 2 - The Smiths	+			0.0	66.3	99	0	66.3	10	1	99				TIZ
13	Receiver12	12		1 0	0.0	56.5	99	(0)	56.5	10		2 22				212
14 1 0.0 60.5 66 60.5 10 60.5 0.0 7 15 1 0.0 61.3 66 61.3 10 61.3 0.0 7 16 1 0.0 61.0 66 65.0 10 61.3 0.0 7 17 1 0.0 60.8 66 63.0 10 63.0 0.0 7 20 1 0.0 60.8 66 60.8 10 63.0 0.0 7 21 1 0.0 59.3 66 59.3 10 60.8 0.0 7 # DUS Noise Reduction Avg Max 21 3 0.0 0.0 0.0 0.0 3 0.0 0.0 0.0 0.0 4 0 0.0 0.0 0.0 5 0 0.0 0.0 0.0 6 0.0 0.0 0.0 7 0 0.0 0.0 8 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 0.0 9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 9 0.0 0.	Receiver13	13		1 0	0.0	61.1	99	(0	61.1	10	-	3 29				110
15	Receiver14	14		1 0	0.0	60.5	99	(0)	60.5	10	-	9				516
16 1 0.0 61.0 66 61.0 61.0 61.0 61.0 61.0 61.0 7 1 1 0.0 49.4 66 63.0 10 63.0 0 7 20 1 0.0 60.8 66 60.8 10 60.8 0 7 # DUS Noise Reduction Avg Max # DIS 4B 4B 4B 4B Avg	Receiver15	15		1	0.0	61.3	99	9	61.3	10						516
17 1 0.0 63.0 66 63.0 10 63.0 0.0 7 20 1 0.0 60.8 66 60.8 10 49.4 0.0 7 20 1 0.0 60.8 66 60.8 10 49.4 0.0 7 # DUS Noise Reduction Min Avg Max 59.3 0.0 7 8 4B	Receiver16	16			0.0	61.0	99	0	61.0	10						516
18 1 0.0 49.4 66 49.4 10	Receiver17	17			0.0	63.0	99	(0)	63.0	10		63				516
20	Receiver18	18		1 0	0.0	49.4	99	(0)	49.4	10		49				516
21 1 0.0 59.3 66 59.3 10 59.3 0.0 7	Receiver20	20			0.0	8.09	99	10	8.09	10		909				512
# DUs Noise Reduction Min Avg Max dB dB dB dB dB dB dB d	Receiver21	21		1	0.0	59.3	99	(0)	59.3	10		59				116
Min Avg Max Max	Dwelling Units		# DUs	1	Reductiv	no										S 11
dB dB<				Min	Avg		Max	1								
9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0				g B	쁑		gp gp									
0.0 0.0 0.0 0.0	All Selected				0.0	0.0	0.0	110								_
0.0 0.0 0.0	All Impacted				0.0	0.0	0.0	10								_
	All that meet NR Goal				00	0.0	0.0	10								-

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Ok4 JRS							28 August 2019	2019				
							INM 2.5					
RESULTS: SOUND LEVELS							Calculated with TNM 2.5	with TNA	12.5			
PROJECT/CONTRACT: RUN:		18402 Existir	18402 - US60 Ballard Co. Existing Site 2 - 12:58 pm	lard Co.								
BARRIER DESIGN:		INPU	INPUT HEIGHTS					Average	Average pavement type shall be used unless	shall be use	ed unles	CD
ATMOSPHERICS:		68 de	68 deg F, 50% RH	_				a State hi	a State highway agency substantiates the use of a different type with approval of EUWA	y substantiate	es the us	in
Receiver									and about	approvar or r	TWA.	
Name	No.	#DUS	7.1	No Barrier					With Barrier			
			LAeq1h	LAeq1h	1 7	Increase over existing	r existing	Type	Calculated	Noise Reduction	tion	
				Calculated		Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	
i i			dBA	dBA	dBA	фB	eg B		dBA	dB	g B	
Site 2 - The Smiths			0 0.0	0 64.1		66 64.1	1 10	ı	64.1	0.0		11
Receiver12			1 0.0		54.0	66 54.0	01 10	1	54.0			
Heceiver13		13	1 0.0		58.8	66 58.8	3 10	1	58.8			
Heceiver14		14	1 0.0		58.3	66 58.3	3 10	1	58.3			
Heceiver15	9	15	1 0.0	0 59.1		66 59.1	1 10	1	59.1			
Heceiver16	-	16	1 0.0		58.2 6	66 58.2	10	1	58.2			
Receiver17		17	1 0.0		9 0.09	99 90.0	01 10	1	0.09			
Heceiver18		18	1 0.0		46.4	66 46.4	10	1	46.4			
Receiver20		20	1 0.0		58.5	66 58.5	5 10		58.5			
Heceiver21	.,	21	1 0.0		56.9	699 28.9	9 10	į	56.9			
Dwelling Units		# DUS	Noise R	Noise Reduction								
			Min	Avg	Max							
			gp B	쁑	qp	İ						
All Selected			0.0		0.0	0.0						
All Impacted						0.0						
All that meet NR Goal			00 0			00						

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Ok4 JRS								28 August 2019 TNM 2.5	st 2019				
RESULTS: SOUND LEVELS								Calculate	Calculated with TNM 2.5	12.5			
PHOJECT/CONTRACT: RUN: BARRIER DESIGN:		18402 Existi INPU	18402 - US60 Ballard Co. Existing Site 2 - 3:48 pm INPUT HEIGHTS	Sallard Co. - 3:48 pm TS					Average	Average pavement type shall be used unless	shall be use	d unless	
ATMOSPHERICS:		68 de	68 deg F, 50% I	표					a State h	a State highway agency substantiates the use of a different type with approved of ELWA	substantiate	es the us	o
Receiver										and show min	approvar or r	- WA	
Name	No.	#DUS	-	No Barrier	rier					With Barrier			
	_		LAeq1h	-			Increase over existing	er existing	Type	Calculated	Noise Reduction	tion	
				Calculated		Crit'n	Calculated	Crit'n Sub'i Inc	Impact	LAeq1h	Calculated Goal	Goal	Calculated minus
			dBA	dBA	Ø	dBA	dB	용		dBA	dB dB	eg eg	eg eg
Site 2 - The Smiths	11	-	0	0.0	66.2	99	66.2		10 Snd Lvl	66.2	0.0		7
Receiver12	•	12	1	0.0	55.8	99	55.8			55.8			7
Receiver13	13	3	1	0.0	8.09	99	8.09		10	8.09			
Receiver14	1	14	1	0.0	60.2	99			10	60.2			
Receiver15	15	2	1	0.0	61.1	99	61.1		10	61.1			
Receiver16	-	16	1	0.0	60.2	99			10	60.2			
Receiver17	17	7	1	0.0	62.1	99	62.1		10	62.1			
Receiver18	18	8	1	0.0	48.1	99	48.1		10	48.1	00		
Receiver20	20	0	1	0.0	60.5	99				60.5			
Receiver21	21	+	3	0.0	58.9	99				58.9			
Dwelling Units		# DUS	Noise	Reduction									
			Min	Avg	2	Max							
			8	쁑	0	B							
All Selected			6	0.0	0.0	0.0	11						
All Impacted			0	0.0	0.0	0.0							
All that meet NR Goal													

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TMM 2.5	Oka														
Calculated with TNM 2.5 Parental to the shall be used unless a State highway agency substantiates the used unless a State highway agency authorised of Fill and the unless and a state of a different type with approval of FHWA. Existing No Barrier Avequate Avequ	- Curt								28 Augu	st 2019					
Part	CHO								TNM 2.5						
9 F. 50% RH LAeqth LAeqth ABA ABA ABA ABA ABA ABA ABA A	RESULTS: SOUND LEVELS								Calculat	ed with TN	M 2.5				
Existing No Barrier Family No Barrier Existing No Barrier Family All the case Calculated	PROJECT/CONTRACT: RUN: BARRIER DESIGN:		18402 Existir INPUT	- US60 Ba ig Site 4 - THEIGHTS	llard Co 7:41 am					Average	pavement typ	e shall be u	sed unless	Ø	
Calculated Cal	ATMOSPHERICS:		68 de		I					a State h	ighway agenc	y substant	iates the us	se	
Existing Increase over existing Type Calculated Cultin Calculated Calculated Cultin Calculated Calculated Cultin Calculated Calculated Cultin Calculated Calculated Calculated Cultin Calculated	Receiver									0 0 0	i ein type with	approvai	T HWA.		
Calculated Critical Calculated Critical Indicated Indicated Critical Indicated Critical Indicated Indicated Indic	Name	No.	#DUs	Existing	-	rier					With Barrier				
Calculated Crit'n Calculated Crit'n Impact Calculated Ca				LAeq1h		្ន		Increase over	er existing	Туре	Calculated		fuction		
0BA dBA dBA dBA dBA dBA dBA dBB Column					Calcul	pe	it'n	Calculated	Crit'n Sub'l Inc		LAeq1h	Calculate		Calcul	ated
0.0 56.3 66 56.3 10 56.3 0.0 7 1 0.0 57.0 66 57.0 10 57.0 0.0 7 1 0.0 57.3 66 57.9 10 57.0 0.0 7 1 0.0 57.3 66 57.9 10 57.3 0.0 7 1 0.0 67.3 66 62.9 10 57.3 0.0 7 1 0.0 61.8 60.7 10 67.3 0.0 7 1 0.0 61.8 62.9 10 67.3 0.0 7 1 0.0 61.4 10 61.8 0.0 7 1 0.0 61.3 66 61.3 10 61.8 0.0 7 1 0.0 61.3 6 61.3 <td></td> <td></td> <td></td> <td>dBA</td> <td>dBA</td> <td>ab de</td> <td>3A</td> <td>号</td> <td>명</td> <td></td> <td>dBA</td> <td>8 B</td> <td>В</td> <td>8</td> <td></td>				dBA	dBA	ab de	3A	号	명		dBA	8 B	В	8	
0.0 57.0 66 57.0 10 57.0 0.0 7 1 1 1 1 1 1 1 1 1	Receiver1			0	0.	56.3	99			0	56.5			7	7.0
1 0.0 57.9 66 57.9 10 57.9 0.0 7 1 0.0 57.9 66 57.9 10 57.9 0.0 7 1 0.0 62.9 66 62.9 10 62.9 0.0 7 1 0.0 61.8 66 61.8 10 62.9 0.0 7 1 0.0 61.8 66 61.8 10 62.9 0.0 7 1 0.0 61.8 60.7 0.0 7 60.0 7 1 0.0 61.4 10 61.4 0.0 7 1 0.0 61.3 10 61.4 0.0 7 1 0.0 60.3 60.4 10 61.3 0.0 7 1 0.0 60.3 60.4 10 60.3	Receiver2	1,0			0.	57.0	99			- 0	57.0		0.0	7	7.0
0.0 67.9 66 57.9 10 57.9 0.0 7 1 0.0 62.9 66 62.9 10 62.9 0.0 7 1 0.0 61.8 66 62.9 10 61.8 0.0 7 1 0.0 61.8 66 61.8 10 61.8 0.0 7 1 0.0 61.4 66 61.4 10 61.4 0.0 7 1 0.0 61.3 66 61.4 10 61.4 0.0 7 1 0.0 60.4 10 61.4 0.0 7 1 0.0 60.2 61.3 10 61.3 0.0 7 1 0.0 60.2 60.3 10 60.3 0.0 7 1 0.0 60.2 60.2	Receivers				0.	6.73	99			0	57.8		0.0	7	-7.0
1 0.0 62.9 60.9 10 62.9 0.0 7 1 0.0 61.8 66 61.8 10 61.8 0.0 7 1 0.0 60.7 60.7 10 61.8 0.0 7 1 0.0 61.6 60.7 10 61.8 0.0 7 1 0.0 61.4 66 61.4 10 61.4 0.0 7 1 0.0 61.4 10 61.4 0.0 7 1 0.0 61.3 10 61.4 0.0 7 1 0.0 60.3 60.4 10 61.4 0.0 7 1 0.0 60.3 60.4 10 60.4 0.0 7 1 0.0 60.2 60.3 10 60.3 0.0 7 <td>Heceiver4</td> <td></td> <td></td> <td></td> <td>0.</td> <td>6.75</td> <td>99</td> <td></td> <td></td> <td>- 0</td> <td>57.5</td> <td></td> <td>0.0</td> <td>7</td> <td>7.0</td>	Heceiver4				0.	6.75	99			- 0	57.5		0.0	7	7.0
0.0 61.8 66.1 61.8 10 61.8 0.0 7 1 0.0 60.7 66 60.7 10 61.8 0.0 7 1 0.0 61.6 66 61.6 10 61.6 0.0 7 1 0.0 61.4 66 61.4 10 61.4 0.0 7 1 0.0 61.4 66 61.4 10 61.4 0.0 7 1 0.0 61.3 66 60.4 10 61.4 0.0 7 1 0.0 60.3 10 60.4 0.0 7 1 0.0 60.2 60.3 10 60.3 0.0 7 1 0.0 62.3 10 62.3 0.0 7 1 0.0 62.3 66 62.3 10 <td>Heceiver5</td> <td></td> <td></td> <td></td> <td>0.</td> <td>65.9</td> <td>99</td> <td></td> <td>Û</td> <td>0</td> <td>62.9</td> <td></td> <td>0.0</td> <td>7</td> <td>7.0</td>	Heceiver5				0.	65.9	99		Û	0	62.9		0.0	7	7.0
1 0.0 60.7 66 60.7 10 60.7 0.0 7 10 60.8 10 10 10 10 10 10 10 1	Heceiverb				0.	61.8	99		ĺ.	0	61.8		0.0	7	7.0
1 0.0	Heceiver			į	0.	2.09	99			0	60.7		0.0	7	7.0
1 0.0 59.4 66 59.4 10 59.4 0.0 7 1 0.0 61.4 66 61.4 10 61.4 0.0 7 1 0.0 61.3 66 61.3 10 61.4 0.0 7 1 0.0 60.3 66 60.3 10 60.3 0.0 7 1 0.0 60.2 60.3 10 60.3 0.0 7 1 0.0 62.3 10 60.2 0.0 7 1 0.0 62.3 10 62.3 0.0 7 1 0.0 62.3 10 62.3 0.0 7 1 0.0 62.3 10 62.3 0.0 7 2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Receivers				0.	9'19	99			0	61.6		0.0	7	.70
1 0.0 61.4 66 61.4 10 61.4 0.0 7 1 0.0 61.3 66 61.3 10 61.3 0.0 7 1 0.0 60.4 66 60.4 10 60.3 0.0 7 1 0.0 60.2 66 60.3 10 60.2 0.0 7 1 0.0 62.3 66 62.3 10 60.2 0.0 7 1 0.0 62.3 6 62.3 10 62.3 0.0 7 1 0.0 62.3 6 62.3 10 62.3 0.0 7 1 0.0 62.3 10 62.3 0.0 7 2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 </td <td>Heceivery</td> <td></td> <td></td> <td></td> <td>0.</td> <td>59.4</td> <td>99</td> <td></td> <td></td> <td>- 0</td> <td>59.4</td> <td></td> <td>0.0</td> <td>7</td> <td>7.0</td>	Heceivery				0.	59.4	99			- 0	59.4		0.0	7	7.0
0.0 61.3 66 61.3 10 61.3 0.0 7 0.0 60.4 66 60.4 10 60.4 0.0 7 0.0 60.3 66 60.2 10 60.2 0.0 7 0.0 62.3 66 62.3 10 62.3 0.0 7 0.0 62.3 66 62.3 10 62.3 0.0 7 0.0 62.3 66 62.3 10 62.3 0.0 7 1	Receiver10	Ŧ			0.	61.4	99			0	61.4		0.0	7	27.0
0.0 60.4 66 60.4 10 60.4 0.0 7 0.0 60.3 66 60.3 10 60.3 0.0 7 0.0 60.2 66 60.2 10 60.2 0.0 7 0.0 62.3 66 62.3 10 62.3 0.0 7 0.0 62.3 66 62.3 10 62.3 0.0 7 0.0 62.3 66 62.3 10 62.3 0.0 7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Heceiver11	-		-	0.	61.3	99			- 0	61.3		0.0	7	-7.0
0.0 60.3 66 60.3 10 60.3 0.0 7 0.0 60.2 66 60.2 10 60.2 0.0 7 0.0 62.3 66 62.3 10 60.2 0.0 7 0.0 61.1 66 61.1 10 61.1 0.0 7 1	Receivenz	7			0.	60.4	99			0	60.4		0.0	7	-7.0
1 0.0 60.2 66 60.2 10 60.2 0.0 7 1	Deceiver 13	*		7	0.	60.3	99			- 0	60.3		0.0	2	-7.0
0.0 62.3 66 62.3 10 62.3 0.0 7 0.0 61.1 66 61.1 10 61.1 0.0 7 1	neceiver14	-	-		0.	60.2	99			1 0	60.2		0.0	7	-7.0
0.0 61.1 66 61.1 10 61.1 0.0 7 0.0 62.3 66 62.3 10 61.1 0.0 7 Noise Reduction Max Avg Max Min Avg Max dB dB dB 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Heceiver15	*			0.	62.3	99			0	62.3		100	7	7.0
0.0 62.3 66 62.3 10 62.3 0.0 7 Noise Reduction Max dB dB dB dB	Receiver16	7			0.	61.1	99			0	61.1		0.0	7	.70
Noise Reduction Min Avg Max dB dB 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Site 4 - US 60 residences	¥			0.	62.3	99			1 0	623		0.0	, ,	7.0
Min Avg Max dB dB dB 0:0 0:0 0:0 0:0 0:0 0:0	Dwelling Units		# DUS	Noise	eduction									5	0.7-
dB dB dB dB 0.0 0.0 0.0 0.0 0.0 0.0 0.0				Min	Avg	M	ах								
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	All Options			g g		7									
0.0 0.0 0.0	All Selected		17		0	0.0	0.0								
0.0 0.0	All Impacted		Ų		0	0.0	0.0	13							
	All that meet NR Goal		0	0	0	0.0	0.0								

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RESULTS: SOUND LEVELS								18	18402 - US60 Ballard Co	0 Ballard	Co					
QK4									28 August 2019	2019						
JRS									TNM 2.5							
RESULTS: SOUND LEVELS								Ŏ	Calculated with TNM 2.5	with TN	M 2.5					
PROJECT/CONTRACT: RUN: BARRIER DESIGN:		18402 Existi	18402 - US60 Ballard Co Existing Site 4 - 7:57 am INPUT HEIGHTS	Ballard Co 4 - 7:57 am	am							į				
ATMOSPHERICS:		90 89	68 dea F. 50% RH	#						a State h	Average pavement type shall be used unless a State highway agency substantiates the use	e shall be y substar	used uni	e nse		-
Receiver										or a diffe	or a different type with approval of FHWA.	approval	of FHWA	اد		T
Name	No.	#DNs		-	No Barrier						With Barrier	1				
	_		LAeq1h	1	LAeq1h		Increase over existing	over e	xisting	Type	Calculated		Noise Reduction			
				Ö	Calculated	Crit'n	Calculated		Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	ed Goal		Calculated	T
			dBA	쁑	dBA	dBA	g	0	留		dBA	g _B	9		dB	
Receiver1		*	+	0.0	55.2	99	9	55.2	10		55.2		00	7	7.0	To
Receiver2		2	1	0.0	55.8	99	9	55.8	10	1	55.8		200	1	7.0	0 0
Receiver3		3	-	0.0	56.6	9	99	56.6	10	I	56.6	0 (0	000	- 1	7.0	0 0
Receiver4		4	+	0.0	56.6	9	99	56.6	10	1	56.6	100	0.0	-	7.0	0 0
Receiver5		5	+	0.0	61.2	99	9	61.2	10	1	61.2	N	0.0		-7.0	00
Receiverb		9	÷	0.0	60.2	99	9	60.2	10	1	60.2	2	0.0	7	-7.0	10
Receiver/		7		0.0	59.5	99	9	59.5	10	1	59.5	10	0.0	7	-7.0	10
Receivers		8	+	0.0	60.5	99	9	60.5	10	Ĭ	60.5	2	0.0	7	-7.0	0
Receivery		0	+	0.0	58.5	99	9	58.5	10		58.5	2	0.0	7	-7.0	0
neceiveriu	-	10		0.0	60.4	99	9	60.4	10		60.4	st	0.0	1	-7.0	10
Desired		=		0.0	60.4	99	0)	60.4	10	-	60.4	et	0.0	7	-7.0	0
Desired		12		0.0	59.5	99	9	59.5	10	-	59.5	10	0.0	7	-7.0	0
Dooring 13		13		0.0	59.4	99	9	59.4	10	1	59.4	et	0.0	7	-7.0	0
Dooring F		14	-	0.0	59.4	99	9	59.4	10	1	59.4	· et	0.0	7	-7.0	0
Deceiver 13		15	+	0.0	61.2	99	9	61.2	10	1	61.2	01	0.0	7	-7.0	10
necelver 10		16	-	0.0	60.2	99	9	60.2	10	ł	60.2	2	0.0	7	-7.0	To
Sile 4 - US bu residences		19		0.0	61.4	9	99	61.4	10	1	61.4	st	0.0	7	7.0	10
Dwelling Units		# DNs	s Noise Reduction	Redu	ction											1
			Min	A	D	Max	_									
			g	P	qB	qB										_
All Selected		_	17	0.0	0.0	0.0	110									_
All Impacted			0	0.0	0.0	0.0	10									_
All that meet NR Goal				0.0	0.0	0.0	10									_
C:\TNM25\18402_US60 Ballard\Existing Site 4 am 012	Sting Site 4	am 01	0													

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Paralle Para	RESULTS: SOUND LEVELS								18402 - US60 Ballard Co	60 Ballard	တ				
Calculated Calculated Calculated Calcula	QK4								20 August	2000					
Page	JRS								TNM 2.5	81.2019					
US60 Ballard Control F, 50% RH Existing No Barrier Increase over existing LAeq1h Calculated Crit n Calculated Crit n Calculated Crit n CBA dBA dB dB 0.0 56.5 66 56.5 10 0.0 58.1 66 58.2 10 0.0 58.2 66 62.0 10 0.0 60.7 66.5 66.7 10 0.0 60.7 66.5 66.5 66.7 10 0.0 60.7 66.7 66.7 10 0.0 60.7 66.7 66.7 10 0.0 60.1 66.6 60.2 10 0.0 60.1 66.6 60.2 10 0.0 60.2 66 60.2 10 0.0 61.4 66 62.2 10 0.0 62.5 66 62.	RESULTS: SOUND LEVELS								Calculate	ed with TN	M 2.5				
F,50% RH Existing No Barrier Increase over existing LAeq1h Increase over existing LAeq1h Increase over existing Calculated Crit'n Calculated Crit'n 0.0 56.5 66 56.5 10 0.0 58.2 66 56.5 10 0.0 58.2 66 58.2 10 0.0 63.0 66 62.0 10 0.0 60.7 66 60.7 10 0.0 60.7 66 60.7 10 0.0 60.1 66 60.7 10 0.0 60.1 66 60.2 10 0.0 60.1 66 60.2 10 0.0 60.1 66 60.2 10 0.0 60.2 66 60.2 10 0.0 60.1 66 62.2 10 0.0 60.2 66 62.2	PROJECT/CONTRACT: RUN: BARRIER DESIGN:		18402 Existin INPU	- US60 Ba ng Site 4 - r HEIGHTS	llard Co 11:54 an	į				Average	pavement type	shall be use	sselun p		
LAeqth L	ATMOSPHERICS:		68 de	g F, 50% B	I					a State P	ighway agenc	y substantiate	es the us	o o	
LAeq1h LAeq1h Increase over existing subjicted Type Calculated	Receiver									0 0	icin type with	approval of F	HWA.		
LAeq1h LAeq1h Increase over existing a limpact Type calculated crit* Calculated crit	Name	No.	#DNs	Existing	100	rrier					With Barrier				
Calculated Critical Calculated Critical Impact LAeq1h Calculated Calculated Sub1 Inc Sub1				LAeq1h	LAed			Increase ove	er existing	Type	Calculated	Noise Reduc	tion		
dBA dBA dB dB dB dB dBA dBA dBB					Calcu		rith	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal	ated
0.0 56.5 66 56.5 10 56.5 0.0 57.2 66 57.2 10 57.2 0.0 58.1 66 58.1 10 57.2 0.0 58.2 66 58.2 10 58.2 0.0 63.0 66.0 68.0 10 58.2 0.0 62.0 66 62.0 10 58.2 0.0 62.0 66 62.0 10 62.0 0.0 60.7 66 60.7 10 62.0 0.0 61.3 66 61.5 10 61.3 0.0 61.3 66 61.3 10 61.3 0.0 61.4 66 60.2 10 60.3 0.0 61.4 66 62.5 10 62.5 0.0	1			dBA	dBA	Р	BA	dB	В		dBA	qp	B	8	
0.0 57.2 66 57.2 10 57.2 0.0 58.1 66 58.1 10 58.1 0.0 58.2 66 58.2 10 58.2 0.0 63.0 66.0 62.0 10 63.0 0.0 62.0 66 62.0 10 62.0 0.0 60.7 66 60.7 10 60.7 0.0 61.5 66 61.5 10 61.5 0.0 61.3 66 61.3 10 61.3 0.0 61.3 66 61.3 10 61.3 0.0 60.4 60 60.4 10 60.3 0.0 60.2 66 60.2 10 60.3 0.0 60.2 66 60.2 10 60.2 0.0<	Receiver1		1		0.	56.5	9			- 0	56.5			7	.7.0
0.0 58.1 66 58.1 10 58.1 0.0 58.2 66 58.2 10 58.2 0.0 63.0 66 63.0 10 63.0 0.0 62.0 66 62.0 10 63.0 0.0 60.7 66 60.7 10 62.0 0.0 61.5 66 61.5 10 60.7 0.0 61.3 66 61.3 10 61.5 0.0 61.3 66 61.3 10 61.3 0.0 61.3 66 61.3 10 61.3 0.0 61.3 66 60.3 10 61.3 0.0 60.4 66 60.3 10 61.3 0.0 61.4 66 60.3 10 60.3 0.0 <td>Heceiver2</td> <td></td> <td>2</td> <td></td> <td>0.</td> <td>57.2</td> <td>19</td> <td></td> <td></td> <td>0</td> <td>57.2</td> <td></td> <td></td> <td>7</td> <td>-7.0</td>	Heceiver2		2		0.	57.2	19			0	57.2			7	-7.0
0.0 58.2 66 58.2 10 58.2 0.0 63.0 66 63.0 10 63.0 0.0 62.0 66 62.0 10 63.0 0.0 60.7 66.7 10 60.7 0.0 61.5 66 61.5 10 60.7 0.0 61.3 66 61.5 10 61.5 0.0 61.3 66 61.3 10 61.5 0.0 61.3 66 61.3 10 61.3 0.0 61.3 66 60.3 10 61.3 0.0 60.2 66 60.3 10 60.3 0.0 60.2 66 60.2 10 60.3 0.0 61.4 66 60.2 10 60.3 0.0 62.5	Receiver3		3		0.	58.1	9				58.1			7	-7.0
0.0 63.0 66 63.0 10 63.0 0.0 62.0 66 62.0 10 63.0 0.0 60.7 66 62.0 10 62.0 0.0 60.2 61.5 10 60.7 0.0 61.5 66 61.5 10 61.5 0.0 61.3 66 61.3 10 61.3 0.0 61.3 66 61.3 10 61.3 0.0 60.1 60.2 10 61.3 0.0 60.2 66 60.3 10 61.3 0.0 60.2 66 60.2 10 60.3 0.0 62.5 66 62.5 10 60.3 0.0 62.1 62.5 10 62.5 0.0 62.5 66 62.5	Heceiver4		4		0.	58.5	99			0	58.2			7	-7.0
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0.0 61.5 66 61.5 10 61.5 0.0 59.4 66 59.4 10 61.3 0.0 61.3 66 61.3 10 61.3 0.0 61.3 66 60.4 10 61.3 0.0 60.3 66 60.2 10 60.4 0.0 60.2 66 60.2 10 60.2 0.0 62.5 66 62.5 10 62.5 Noise Reduction 62.2 66 62.2 10 62.5 Min Avg Max 62.2 10 62.5 0.0 0.0 0.0 0.0 0.0 0.0 62.5 0.0 0.0 0.0 0.0 0.0 0.0 62.5 10 0.0 0.0 0.0 0.0	Heceiver7		7		0.	2.09	9		Û	1 0	60.7			7	-7.0
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0.0 61.3 66 61.3 10 61.3 61.3 61.3 61.3 61.3 61.3 61.3 61.3 61.4 61.4 60.4 60.4 60.4 60.4 60.4 60.4 60.4 60.4 60.4 60.4 60.4 60.4 60.4 60.4 60.2 60.3 60.2 60.2 60.3 60.2 60.	Heceiveriu		0	in the	0.	61.3	99			1	61.3			7	-7.0
0.0 60.4 66 60.4 10 60.4 0.0 60.3 66 60.3 10 60.3 0.0 60.2 66 60.2 10 60.3 0.0 62.5 66 62.5 10 62.5 Noise Reduction Avg Max 62.2 10 62.2 Min Avg Max 62.2 10 62.2 0.0 0.0 0.0 0.0 0.0 62.2 62.2 0.0 0.0 0.0 0.0 0.0 62.2 62.2 62.2 62.2 62.2 62.2 62.2 62.2 62.2 62.2 62.2 62.2 62.2 62.2 62.2	Heceiver11		-		0.	61.3	99				61.3			7	-7.0
0.0 60.3 66 60.3 10 60.3 0.0 60.2 66 60.2 10 60.2 0.0 62.5 66 62.5 10 62.5 0.0 61.4 66 61.4 10 62.5 Noise Reduction Min Avg Max dB dB 4B 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Heceiveriz		2		0.	60.4	99				60.4			7	-7.0
0.0 60.2 66.2 60.2 10 60.2 0.0 62.5 66 62.5 10 62.5 0.0 61.4 66 61.4 10 62.5 Noise Reduction Min Avg Max 62.2 10 62.2 dB dB dB 62.2 62.2 0.0 0.0 0.0 0.0 0.0 62.2	Receiver13		8		0.	60.3	99			- 0	60.3			7	-7.0
0.0 62.5 66 62.5 10 62.5 0.0 61.4 66 61.4 10 61.4 0.0 62.2 66 62.2 10 61.4 Noise Reduction Min Avg Max 4B	Heceiver14		4		0.	60.2	99				60.2			7	-7.0
0.0 61.4 66 61.4 10 61.4 0.0 62.2 66 62.2 10 62.2 Noise Reduction Min Avg Max dB dB dB 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Receiver15				0.	62.5	99			1	62.5			7	-70
0.0 62.2 66 62.2 10 62.2 Noise Reduction Min Avg Max Ag Ag dB dB dB Ag Ag Ag 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Heceiver16				0.	61.4	99			- 0	61.4			7	-7.0
Noise Reduction Min Avg Max dB dB dB 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Site 4 - US 60 residences				0.	62.2	99			- 0	62.2			7	-7.0
Min Avg Max dB dB 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Dwelling Units		# DNs	Nois	eduction										2
dB dB 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0				Min	Avg		Max								Ī
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0.0 0.0 0.0	All Selected		1		0	0.0	0.0	110							
0.0 0.0 0.0	All Impacted				0	0.0	0.0	Jo							
	All that meet NR Goal				0	0.0	0.0								
	C:\IINmzo\I840z_USOU Ballard\EXI	Isting Site 4	mid_01	6										28 A.	28 Aurust 2

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THACT: Existing Site 4 - 12:09 pm GN: Existing Site 4 - 12:09 pm INDUT HEIGHTS SIS 68 deg F, 50% RH ABA GBA GRID Grift I GRID GRID GRID GRID GRID GRID GRID GRID	k4													
TS: SOUND LEVELS	SE							Se Aug	0100 100					
Page								TNM 2.	102 kulg					
EXISTING Site 4 - 12.09 pm ENDIAL EXISTING Site 4 - 12.09 pm SPHERICS: 68 deg F, 50% RH err INPUT HEIGHTS Amount Height LAeqTh Increase over existing Calculated Criting Calculated Crit	ESULTS: SOUND LEVELS							Calcul	ated with TI	VM 2.5				
SPHERICS: 68 deg F, 50% RH eer No. #DUS Existing No Barrier Increase over existing lear LAeq1h LAeq1h LAeq1h Increase over existing lear Calculated Crith Calculated Crith Sub1 Inc. lear der Calculated Crith Calculated Crith Sub1 Inc. lear der Calculated Crith Calculated Crith Sub1 Inc. lear der GBA dBA dBA dBA dBA dB lear der GBA dBA dBA dBA dBA dBA dBA dBB	ROJECT/CONTRACT: UN: ARRIER DESIGN:	Existi INPU	ng Site 4 T HEIGHT	allard C - 12:09 S	o md				Average	e pavement type	e shall be used	d unless		
No. #DUS Existing No Barrier Increase over existing Increase	TMOSPHERICS:	68 de	9 F, 50%	Æ					a State	highway agenc	y substantiate	s the use	n	
Formation Formation Formation Calculated Critic Critical Impact With Bact Calculated Critical Impact Again Calculated Critical Impact Calculated	eceiver									and forman	de la constanta			I
Calculated Crit'n Impact Calculated Crit'n Calculated Crit'n Calculated Crit'n Calculated Crit'n Calculated Crit'n Impact Calculated Calculate		147	7.5	1	Barrier					With Barrier				
ABA GBA GR Galculated Crit'n Impact Calculated Crit'n Impact Calculated Crit'n Impact Calculated Crit'n Impact Calculated Calcu			LAeq11		q1h		Increase ov	ver existing	1	Calculated	Noise Reduction	tion		
1 dBA				Calt		Crit'n	Calculated	Crit'n Sub'l Ir	0		Calculated	Goal	Calculated minus	D
1 1 0.0 56.7 66 56.7 10 2 1 0.0 57.4 66 57.4 10 3 1 0.0 58.3 66 58.3 10 4 1 0.0 62.0 66 63.0 10 6 1 0.0 62.0 66 62.0 10 7 1 0.0 60.8 66 61.6 10 8 1 0.0 61.6 66 61.4 10 9 1 0.0 61.4 66 61.4 10 10 1 0.0 61.3 66 61.3 10 11 1 0.0 60.4 66 60.5 10 12 1 0.0 60.4 66 60.4 10 15			dBA	dBA		dBA	쁑	용		dBA	8B	dB	g g	
2 1 0.0 57.4 66 57.4 10 3 1 0.0 58.3 66 58.3 10 4 1 0.0 58.4 66 58.4 10 5 1 0.0 63.0 66 63.0 10 6 1 0.0 62.0 66 62.0 10 7 1 0.0 60.8 66 60.8 10 9 1 0.0 61.6 66 61.6 10 10 1 0.0 61.3 66 61.4 10 11 1 0.0 61.3 66 61.3 10 12 1 0.0 60.5 66 60.5 10 13 1 0.0 60.4 66 60.7 10 15 1 0.0 62.7 66 62.7 10 19 <td>leceiver1</td> <td></td> <td></td> <td>0.0</td> <td>56.7</td> <td>9</td> <td></td> <td>2.9</td> <td>10</td> <td>56.7</td> <td>0.0</td> <td></td> <td></td> <td>102</td>	leceiver1			0.0	56.7	9		2.9	10	56.7	0.0			102
3 1 0.0 58.3 66 58.3 10 4 1 0.0 58.4 66 58.4 10 5 1 0.0 63.0 66 62.0 10 6 1 0.0 62.0 66 62.0 10 7 1 0.0 61.6 66 61.6 10 9 1 0.0 61.4 66 61.4 10 10 1 0.0 61.3 6 61.4 10 11 1 0.0 61.3 66 61.3 10 12 1 0.0 61.3 66 60.5 10 13 1 0.0 60.5 66 60.5 10 14 1 0.0 60.4 66 60.4 10 15 1 0.0 62.7 66 62.7 10 19 <td>Receiver2</td> <td>2</td> <td></td> <td>0.0</td> <td>57.4</td> <td>9</td> <td></td> <td>7.4</td> <td>10</td> <td>57.4</td> <td></td> <td></td> <td>7</td> <td>7.0</td>	Receiver2	2		0.0	57.4	9		7.4	10	57.4			7	7.0
4 1 0.0 58.4 66 58.4 10 5 1 0.0 63.0 66 63.0 10 6 1 0.0 62.0 66 62.0 10 7 1 0.0 60.8 66 60.8 10 9 1 0.0 61.6 66 61.6 10 10 1 0.0 61.4 66 61.4 10 11 1 0.0 61.3 66 61.3 10 12 1 0.0 60.5 66 60.5 10 13 1 0.0 60.4 66 60.4 10 15 1 0.0 60.4 66 62.7 10 16 1 0.0 60.4 66 60.4 10 16 </td <td>Receiver3</td> <td>က</td> <td></td> <td>0.0</td> <td>58.3</td> <td>9</td> <td></td> <td>8.3</td> <td>10</td> <td>58.3</td> <td></td> <td></td> <td></td> <td>-7.0</td>	Receiver3	က		0.0	58.3	9		8.3	10	58.3				-7.0
5 1 0.0 63.0 66 63.0 10 6 1 0.0 62.0 66 62.0 10 7 1 0.0 60.8 66 62.0 10 8 1 0.0 61.6 66 61.6 10 9 1 0.0 61.4 66 61.4 10 10 1 0.0 61.3 66 61.4 10 12 1 0.0 61.3 66 61.3 10 13 1 0.0 60.5 66 60.5 10 14 1 0.0 60.4 66 62.7 10 15 1 0.0 60.4 66 62.7 10 16 1 0.0 62.3 66 62.7 10 4 <td>(eceiver4</td> <td>4</td> <td></td> <td>0.0</td> <td>58.4</td> <td>9</td> <td></td> <td>8.4</td> <td>ĥ</td> <td>58.4</td> <td></td> <td></td> <td></td> <td>-7.0</td>	(eceiver4	4		0.0	58.4	9		8.4	ĥ	58.4				-7.0
6 1 0.0 62.0 66 62.0 10 7 1 0.0 60.8 66 60.8 10 8 1 0.0 61.6 66 61.6 10 9 1 0.0 61.4 66 61.4 10 10 1 0.0 61.3 66 61.3 10 12 1 0.0 60.5 66 60.5 10 13 1 0.0 60.4 66 60.4 10 15 1 0.0 60.4 66 60.7 10 16 1 0.0 60.4 66 60.7 10 15 1 0.0 62.7 66 62.7 10 19 1 0.0 62.3 66 62.3 10	Receivers	2		0.0	63.0	9		3.0	10	63.0				-7.0
7 1 0.0 60.8 66 60.8 10 8 1 0.0 61.6 66 61.6 10 9 1 0.0 61.4 66 61.4 10 10 1 0.0 61.3 66 61.3 10 12 1 0.0 60.5 66 60.5 10 13 1 0.0 60.4 66 60.5 10 14 1 0.0 60.4 66 62.7 10 15 1 0.0 62.7 66 62.7 10 16 1 0.0 62.7 66 62.7 10 4 1 0.0 62.3 66 62.7 10 19 1 0.0 62.3 66 62.7 10 4 </td <td>Receivero</td> <td>9</td> <td></td> <td>0.0</td> <td>62.0</td> <td></td> <td></td> <td>2.0</td> <td>10</td> <td>62.0</td> <td>0.0</td> <td></td> <td></td> <td>-7.0</td>	Receivero	9		0.0	62.0			2.0	10	62.0	0.0			-7.0
8 1 0.0 61.6 66 61.6 10 9 1 0.0 59.6 66 59.6 10 10 1 0.0 61.4 66 61.4 10 12 1 0.0 61.3 66 61.3 10 13 1 0.0 60.5 66 60.5 10 14 1 0.0 60.4 66 60.4 10 15 1 0.0 62.7 66 62.7 10 16 1 0.0 61.7 66 62.7 10 4 1 0.0 62.3 66 62.7 10	/ecelver/	7		0.0	8.09	9		9.0	10	8.09	0.0			-7.0
9 1 0.0 59.6 66 59.6 10 10 1 0.0 61.4 66 61.4 10 11 1 0.0 61.3 66 61.3 10 12 1 0.0 60.5 66 60.5 10 13 1 0.0 60.4 66 60.4 10 14 1 0.0 62.7 66 62.7 10 16 1 0.0 61.7 66 61.7 10 4 1 0.0 62.3 66 62.7 10 19 1 0.0 62.3 66 62.7 10	receivera	80		0.0	61.6			1.6	10	61.6	0.0			-7.0
10 1 0.0 61.4 66 61.4 10 11 1 0.0 61.3 66 61.3 10 12 1 0.0 60.5 66 60.5 10 13 1 0.0 60.4 66 60.4 10 14 1 0.0 62.7 66 62.7 10 15 1 0.0 61.7 66 62.7 10 4 1 0.0 62.3 66 62.7 10 4 1 0.0 62.3 66 62.3 10	(ecelvery	o !		0.0	59.6	9		9.6	10	59.6	0.0		7	-7.0
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13 1 0.0 60.4 66 60.4 10 14 1 0.0 60.4 66 60.4 10 15 1 0.0 62.7 66 62.7 10 16 1 0.0 61.7 66 62.3 10 4 10 0.0 62.3 66 62.3 10	Joseph 12	12		0.0	60.5			0.5	10	60.5	0.0			-7.0
14 1 0.0 60.4 66 60.4 10 15 1 0.0 62.7 66 62.7 10 16 1 0.0 61.7 66 61.7 10 4 1 0.0 62.3 66 62.3 10	Joseph 13	13		0.0	60.4	9		0.4	10	60.4	0.0			-7.0
15 1 0.0 62.7 66 62.7 10 16 1 0.0 61.7 66 62.3 10 19 1 0.0 62.3 66 62.3 10 10 10 10 10 10 1	Socional	14		0.0	60.4	9		4.0	10	60.4	0.0			-7.0
16 1 0.0 61.7 66 61.7 10 19 1 0.0 62.3 66 62.3 10	ecelvel 13	15		0.0	62.7	9		2.7	10	62.7	0.0		7	-7.0
# Date Maine Bodings 66 62.3 10	deceiver 16	16		0.0	61.7	9		1.7	10	61.7	0.0			-7.0
4	ille 4 - US ou residences	19		0.0	62.3	9		2.3	10	62.3	0.0			-7.0
sno #	Dwelling Units	# DUs		Reduct	on									
Avg			Min	Avg		Max								
ab ab ab		-	쁑	g		8								
All Selected 0.0 0.0 0.0 0.0	III Selected	2		0.0	0.0	0.	0							
0.0 0.0 0.0	Il Impacted			0.0	0.0	0	0							
0.0 0.0	Ill that meet NR Goal			0.0	0.0	0.	0							
C:\INWi25\I8402_US60 Ballard\Existing_Site 4 mid_020	II NMZ5/1840Z_US60 Ballard/Existing_Site	4 mid 02	0											

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Ok4 JRS								28 August 2019	st 2019					
RESULTS: SOUND LEVELS								Calculat	Calculated with TNM 2.5	M 2.5				
PROJECT/CONTRACT: RUN: BARRIER DESIGN:		18402 Existin INPUT	18402 - US60 Ballard Co Existing Site 4 - 4:39 pm INPUT HEIGHTS	Ballard Co 4 - 4:39 pm ITS					Average	Average pavement type shall be used unless	e shall be u	səlun pəsr	y)	
ATMOSPHERICS:		68 de	68 deg F, 50% RH	E					a State I	a State highway agency substantiates the use of a different type with approval of EHWA	y substant	iates the u	Se	
Receiver										and for the same	manufah.			
Name	No.	#DNs	Existing		No Barrier					With Barrier	3			
			LAeq1h	LAeq1h	Ų.		Increase over existing	er existing	Туре	Calculated	Noise Reduction	duction		
				Calci	Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calcula minus Goal	Calculated minus Goal
			dBA	dBA	О	dBA	母	母		dBA	쁑	8	용	
Receiver1	-		1 0.	0.0	57.8	99		57.8	10	57.8	89	0.0	7	-7.0
Heceiver2	2			0.0	58.4	99		58.4	10	58.4		0.0	7	-7.0
necelver3	m			0.0	2.69	99		59.2	10	59.2		0.0	7	-7.0
Receiver4	4	-	1 0	0.0	59.3	99		59.3	10	59.3		0.0	7	-7.0
necelvera	2			0.0	63.9	99		63.9	10	63.9		0.0	7	-7.0
neceivero	9		Ī	0.0	62.9	99		62.9	10	62.9		0.0	7	-7.0
Desired.	7			0.0	61.8	99		61.8	10	61.8		0.0	7	-7.0
Receivers	80			0.0	62.7	99			10	62.7		0.0	7	-7.0
Boomond	5		0.	0.0	2.09	99		Ì	10	60.7		0.0	7	-7.0
Possition 14	10			0.0	62.5	99			01	62.5		0.0	7	-7.0
Doolload	11			0.0	62.5	99			10	62.5		0.0	7	-7.0
Possing 12	12			0.0	61.6	99			10	61.6		0.0	7	-7.0
Booming 1	13			0.0	61.6	99			10	61.6		0.0	7	-7.0
Dooring 1	14			0.0	61.6	99		01	10	61.6		0.0	7	-7.0
neceivel 13	15		1 0	0.0	64.0	99		64.0	01	64.0		0.0	7	-7.0
necelver16	16			0.0	65.9	99		62.9	10	62.9		0.0	7	-7.0
one 4 - US ou residences	19		1 0	0.0	63.6	99		63.6	10	63.6		0.0	7	-7.0
Dwelling Units		# DNs	Nois	e Reduction	L.									
			Min	Avg		Max								
All Selected		17		00	00									
All Impacted				0.0	0.0	0.0								
All that meet NR Goal		,		00	0	0								

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Qk4								A 00	0,00					
JRS								28 August 2019	1 2019					
								TNM 2.5						
RESULTS: SOUND LEVELS								Calculate	Calculated with TNM 2.5	M 2.5				
PROJECT/CONTRACT: RUN: BARRIER DESIGN:		18402 - US60 Existing Site		Ballard Co 4 - 4:54 pm										
ATMOSPHEBICS:									Average a State h	Average pavement type shall be used unless a State highway agency substantiates the use	pe shall be u cy substant	ised unles	s es	
		pe de	os deg F, 50% HH	E					of a diffe	of a different type with approval of FHWA.	h approval o	FHWA.		
Receiver	Ö	#DUS	Fxicting	No Barrior	ro						H H			
			Bully	7	<u> </u>					With Barrier	-			Ī
			LAeq1h	-			Increase over existing	r existing	Type	Calculated	Noise Reduction	duction		
				Calculated	7		Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal	ated
			dBA	dBA	dBA		母	dB		dBA	æ	ВB	号	
Receiver1	_	1	0.0	0	54.8	99	54.8	8 10	-	54.8		00	1	7.0
Receiver2	2	1	0.0	0.	55.4	99	55.4		I	55.4		00	, ,	7.0
Receiver3		1	0.0	0	56.2	99	56.2		-	562		00	7	2.0
Receiver4	4		0.0	0.	56.3	99	56.3		1	56.3		200	- 1	1.0
Receiver5	5	-	0.0	0	61.1	99	61.1	Û	1	1.19		200		1.0
Receiver6	9		0.0	0	60.1	99	60.1		1	109		0.0	, ,	7.0
Receiver7	7	_	0.0	0	59.1	99	59.1		1	1.05		000	- 1	7.0
Receiver8	8		0.0	0	60.1	99	60.1		1	60.1		0.0	, ,	7.0
Receiver9	6	_	0.0	0	58.0	99	58.0		-	58.0		0.0	, ,	7.0
Receiver10	10	1	0.0	0	59.9	99	59.9		1	0.00		0.0	, ,	7.0
Receiver11	-	•	0.0	0	59.9	99	59.9		1	59.9		00	, ,	7.0
Receiver12	12	1	0.0	0	29.0	99	59.0	lî,	1	59.0		0.0	7	7.0
Receiver13	13	1	0.0	0	29.0	99	59.0	0 10	1	59.0		0.0		-7.0
Heceiver14	14	1	0.0	0.	29.0	99	29.0	0 10	1	59.0		0.0	7	.7.0
Heceiver15	15	1	0.0	0	61.1	99	61.1	1 10	1	61.1		0.0		7.0
Heceiver16	16	-	0.0	0	6.65	99	59.9	9 10	1	59.9		0.0	7	7.0
Site 4 - US 60 residences	19	-	0.0	0	61.0	99	61.0	0 10	1	61.0		0.0	7	7.0
Dwelling Units		# DNs	1	Noise Reduction								2		2
			Min	Avg	Max	X								
			g B	gp B	母									
All Selected		17	0.0	0	0.0	0.0								
All Impacted		0	0.0	0	0.0	0.0								
All that meet NR Goal 0		0	0.0	0	0.0	0.0								

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RESULTS: SOUND LEVELS								1840	12 US60	18402 US60 Ballard Co	0				
770															
T CV								28	28 August 2019	2019					
243								F	TNM 2.5						
								ద	Iculated	Calculated with TNM 2.5	A 2.5				
PROJECT/CONTRACT:		1040	11000												
BIN:		1040	1640z US60 Ballard Co	lard Co											
BARRIER DESIGN:		INPL	Existing Site 5 7:05 am INPUT HEIGHTS	7:05 am S						Average	Average pavement type shall be used unless	pe shall be	used unic	SSS	
ATMOSPHERICS:		68 d	68 deg F, 50% RH	Ŧ						a State h	a State highway agency substantiates the use	cy substan	tiates the	nse	
Receiver											mu odki me	ii appiovai	D L L		
Name	No.	#DNs	100	No Barrier	rier						With Barrier	-			
			LAeq1h	200	-		Increase	Increase over existing		Type	Calculated	Noise Reduction	duction		
				Calculated		Crit'n	Calculated	a .	0	Impact	LAeq1h	7.0	ed Goal		Calculated
			dBA	dBA	dBA	Y.	界	명			dBA	B	8	9 8	GOSI
Receiver1	-		1	0.0	60.2	9	99	60.2	10	ı	602	2	0.0	7	7.0
Receiver2	2		1	0.0	53.5	9	99	53.5	10	-	53.5	i rc	00	,	7.0
Receiver3	3		1	0.0	57.2	9	99	57.2	10	1	57.2	.2	0.0	, ,	-70
Heceiver4	4		1	0.0	87.2	9	99	57.8	10	1	57.8	80	0.0	. 1	.70
Receiver5	5		1	0.0	59.3	9	99	59.3	10	i	59.3	6	0.0	, 1	-7.0
Receiver6	9	15	1	0.0	63.4	9	99	63.4	10	1	63.4	4	00	1	7.0
Receiver7	7		1 0	0.0	60.4	9	99	60.4	10	1	60.4	4	0.0	1	-7.0
Heceiver8	8		1	0.0	45.5	9	99	45.5	10		45.5	.5	0.0	7	.70
Receiver9	6		1 0	0.0	44.1	9	99	44.1	10	1	44.1	-	0.0	7	-7.0
Heceiver10	10		-	0.0	42.9	9	99	42.9	10	1	42.9	6	0.0	7	-7.0
Heceiver11	7		1	0.0	40.9	9	99	40.9	10	ł	40.9	6.	0.0	7	-7.0
Heceiver12	12		-	0.0	40.1	9	99	40.1	10	j	40.1	77.	0.0	7	-7.0
neceiveria	13		-	0.0	39.4	9	99	39.4	10	1	39.4	4.	0.0	7	-7.0
Heceiver14	14		1	0.0	38.7	9	99	38.7	10	1	38.7	7.	0.0	7	-7.0
Heceiver15	15		-	0.0	43.2	9	99	43.2	10	-	43.2	2	0.0	7	-7.0
Receiver16	16		1	0.0	45.0	9	99	45.0	10	1	42.0	0	0.0	7	27.0
Heceiver1 /	17			0.0	39.6	9	99	39.6	10	Ð	39.6	9.	0.0	7	-7.0
receiver18	18		-	0.0	38.9	9	99	38.9	10	1	38.9	6	0.0	7	-7.0
Heceiverzu	20		-	0.0	64.5	9	99	64.5	10	1	64.5	25,	0.0	7	-7.0
Pecelverz I	23			0.0	61.5	9	99	61.5	10	ł	61.5	rú	0.0	7	-7.0
diade valley independent Church	23		0	0.0	61.8	9	99	61.8	10	1	61.8	80	0.0	7	-7.0
Dwelling Units		# DNs	Noise	Reduction											
			Min	Avg	Ž	Max									Ī
THE PROPERTY OF THE PARTY OF TH	1														

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18402 US60 Ballard Co	ф	0.0	0.0 0.0	C
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	dВ	0.0	0.0	00
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RESULIS: SOUND LEVELS		All Selected	All Impacted	All that meet NR Goal

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Properties Pro	RESULTS: SOUND LEVELS								18402 US	18402 US60 Ballard Co	co				
This Sound belief Participate Particip	Qk4									0,000					
Table Counting C	JRS								TNM 2.5	1ST 2019					
Particular Par									Calculat	ed with Th	M 2.5				
Part	RESULTS: SOUND LEVELS														
No. Fixisting Site 5720 and Part Height Site 5720 and Part Height Site 5 Part Heigh	PROJECT/CONTRACT:		18402	US60 Ball	ard Co										
No. Four-line No. Four	RUN: BARRIER DESIGN:		Existin	g Site 5 7	:20 am										
No.			NEO	HEIGHIN						Average	pavement typ	e shall be u	selun pesr	SS	
No. Existing No.	ATMOSPHERICS:		99 dec	1 F, 50% R	=					a State	highway agend	y substant	lates the	ase	-
No. FDUS EXisting No Barrier Increase over existing Type Calculated Critin Critin Calculated Critin Calculated Critin Calculat	Receiver										cicin type win	approvar	I LUWA.		
Calculated Cal	Name	No.	#DNs	Existing		ier					With Barrie	2			
Calculated Crif* Calculated Crif* Calculated Crif* Calculated Crif* Calculated Crif* Calculated Crif* Calculated Calcula				LAeq1h	-			Increase ov	er existing	Type	Calculated		duction		
1 1 0.0 60.3 66 60.3 10 60.3 0.0 7 2 1 0.0 60.3 66 60.3 10 60.3 0.0 7 3 1 0.0 53.4 66 53.5 10 57.4 0.0 7 4 1 0.0 59.7 66 59.8 10 56.1 0.0 7 5 1 0.0 60.8 66 60.8 10 60.8 0.0 7 6 1 0.0 60.8 66 60.8 10 60.8 0.0 7 7 1 0.0 44.0 66 66.8 10 45.5 0.0 7 10 1 0.0 44.0 66 44.5 10 42.8 0.0 7 11 1 0.0 40.2 66 43.8 10 42.8 0.0 7 12 1 0.0 40.2 66 43.8 10 42.8 0.0 7 13 1 0.0 40.2 66 43.8 10 43.1 0.0 7 14 1 0.0 42.0 66 43.8 10 43.1 0.0 7 15 1 0.0 42.0 66 43.8 10 43.1 0.0 7 16 1 0.0 42.0 66 43.8 10 43.1 0.0 7 17 1 0.0 42.0 66 43.8 10 43.1 0.0 7 18 1 0.0 42.0 66 43.8 10 43.1 0.0 7 19 1 0.0 42.0 66 43.8 10 43.1 0.0 7 10 1 0.0 61.8 66 62.8 10 64.8 0.0 7 20 21 1 0.0 61.8 66 62.0 10 64.8 0.0 7 21 1 0.0 61.8 66 62.0 10 64.8 0.0 7 22 23 0 0.0 61.8 66 62.0 10 62.0 0.0 7 23 0 0.0 61.8 66 62.0 10 62.0 0.0 7 4 DUS NOISE FAULKITON					Calcula		,	Calculated	Crit'n Sub'l In	F - 74	LAeq1h	Calculate	d Goal	Calc	Calculated
1 1 0.0 60.3 66 60.3 10 60.3 0.0 7 2 1 0.0 53.5 66 53.5 10 53.5 0.0 7 3 1 0.0 57.4 66 57.4 10 581.5 0.0 7 4 1 0.0 58.1 66 58.1 10 581.1 0.0 7 5 1 0.0 60.8 66 63.8 10 69.8 0.0 7 6 1 0.0 60.8 66 60.8 10 60.8 0.0 7 7 1 0.0 45.5 66 44.5 10 44.0 0.0 7 1 1 0.0 42.8 66 44.5 10 44.0 0.0 7 1 1 0.0 42.8 66 42.8 10 44.0 0.0 7 1 1 0.0 42.8 66 42.8 10 44.0 0.0 7 1 1 0.0 43.1 66 42.8 10 44.0 0.0 7 1 1 0.0 38.8 66 38.8 10 42.0 0.0 7 1 1 0.0 42.0 66 42.0 10 42.0 0.0 7 1 1 0.0 38.8 66 38.8 10 42.0 0.0 7 1 1 0.0 42.0 66 42.0 10 42.0 0.0 7 1 1 0.0 42.0 66 42.0 10 42.0 0.0 7 1 1 0.0 42.0 66 42.0 10 42.0 0.0 7 1 1 0.0 64.8 66 38.8 10 42.0 0.0 7 1 1 0.0 64.8 66 64.8 10 64.8 0.0 7 2 1 0.0 64.8 66 64.8 10 64.8 0.0 7 2 1 0.0 64.8 66 64.8 10 62.0 0.0 7 2 1 0.0 64.8 66 64.8 10 62.0 0.0 7 3 4 0.0 64.8 66 64.8 0.0 62.0 0.0 7 4 1 0.0 64.8 66 64.8 0.0 62.0 0.0 7 5 0 0 0 64.8 66 64.8 0 0 62.0 0.0 7 5 0 0 0 64.8 66 64.8 0 0 62.0 0.0 7 5 0 0 0 64.8 66 64.8 0 0 62.0 0 0 7 6 0 0 0 64.8 0 0 0 64.8 0 0 0 0 0 0 0 6 0 0 0 64.8 0 0 0 0 0 0 0 0 0				dBA	dBA	dBA		母	qB		dBA	8	æ	20a	
2 1 0.0 53.5 66 53.5 10 55.5 0.0 3 1 0.0 57.4 66 57.4 10 55.5 0.0 6 1 0.0 58.1 66 58.1 10 56.7 0.0 6 1 0.0 58.7 66 58.7 10 58.1 0.0 7 1 0.0 60.8 66 60.8 10 60.8 0.0 8 1 0.0 44.0 66 60.8 10 60.8 0.0 9 1 0.0 44.0 66 42.8 10 45.5 0.0 10 1 0.0 44.0 66 42.8 10 45.5 0.0 10 1 0.0 42.8 66 42.8 10 42.8 0.0	Receiver1			1 0.	0	60.3	99			10	1			3	7.0
3 1 0.0 57.4 66 58.1 10	Receiver2	Ċá			0	53.5	99			10	23		0.0		7.0
4 1 0.0 58.1 66 58.1 10 58.1 0.0 6 1 0.0 59.7 66 59.7 10 69.7 0.0 7 1 0.0 63.8 66 63.8 10 63.7 0.0 8 1 0.0 45.5 66 60.8 10 63.8 0.0 9 1 0.0 45.5 66 45.5 10 45.0 0.0 10 1 0.0 44.0 66 44.0 10 45.5 0.0 11 1 0.0 42.8 66 42.8 10 42.0 0.0 12 1 0.0 40.2 66 40.2 10 40.9 0.0 13 1 0.0 42.0 66 42.0 10 40.2 0.0 <t< td=""><td>Receiver3</td><td>60</td><td></td><td></td><td>0</td><td>57.4</td><td>99</td><td></td><td></td><td>10</td><td>57.</td><td></td><td>0.0</td><td>7</td><td>.70</td></t<>	Receiver3	60			0	57.4	99			10	57.		0.0	7	.70
5 1 0.0 59.7 66 59.7 10 59.7 0.0 6 1 0.0 63.8 66 63.8 10 63.8 0.0 7 1 0.0 60.8 66 60.8 10 63.8 0.0 9 1 0.0 45.5 66 60.8 10 60.8 0.0 10 1 0.0 44.0 66 45.5 10 44.0 0.0 11 1 0.0 42.8 66 42.8 10 44.0 0.0 12 1 0.0 40.2 66 40.2 10 40.9 0.0 13 1 0.0 40.2 66 40.2 10 40.9 0.0 14 1 0.0 42.0 66 42.0 10 40.2 0.0	Receiver4	4	92	0	0	58.1	99			10	58.		00	. 1	7.0
6 1 0.0 63.8 66 63.8 10 63.8 0.0 7 1 0.0 60.8 66 60.8 10 60.8 0.0 8 1 0.0 45.5 66 45.5 10 60.8 0.0 10 1 0.0 44.0 66 44.0 10 44.0 0.0 11 1 0.0 42.8 66 40.9 10 44.0 0.0 12 1 0.0 42.8 66 40.9 10 44.0 0.0 13 1 0.0 40.2 66 40.9 10 40.9 0.0 14 1 0.0 40.2 66 40.2 10 40.9 0.0 14 1 0.0 42.0 66 42.0 10 42.0 0.0	Receiver5	п)		0	0	26.7	99			10	59.		0.0		-7.0
7 1 0.0 60.8 66 60.8 10 60.8 0.0 8 1 0.0 45.5 66 45.5 10 60.8 0.0 9 1 0.0 44.0 66 44.0 10 44.0 0.0 10 1 0.0 42.8 66 42.8 10 44.0 0.0 11 1 0.0 42.8 66 40.9 10 44.0 0.0 12 1 0.0 40.2 66 40.2 10 42.8 0.0 13 1 0.0 40.2 66 40.2 10 40.9 0.0 14 1 0.0 43.1 66 39.4 10 42.0 0.0 15 1 0.0 43.1 66 42.0 10 42.0 0.0	Receiver6	w	15	1 0	0.	63.8	99			10	63.		0.0	7	7.0
8 1 0.0 45.5 66 45.5 10 45.5 0.0 10 1 0.0 44.0 66 44.0 10 44.0 0.0 11 1 0.0 42.8 66 42.8 10 44.0 0.0 12 1 0.0 40.9 66 40.2 10 40.9 0.0 13 1 0.0 40.2 66 40.2 10 40.9 0.0 14 1 0.0 40.2 66 40.2 10 40.9 0.0 14 1 0.0 40.2 66 38.8 10 40.2 0.0 15 1 0.0 43.1 66 43.1 10 42.0 0.0 16 1 0.0 42.0 66 42.0 10 42.0 0.0	Receiver7	7		1	0	8.09	99			01	.09		0.0	. 1	.70
9 1 0.0 44.0 66 44.0 10 44.0 0.0 10 1 0.0 42.8 66 42.8 10 42.8 0.0 12 1 0.0 40.9 66 40.9 10 40.9 0.0 13 1 0.0 40.2 66 40.2 10 40.9 0.0 14 1 0.0 40.2 66 40.2 10 40.2 0.0 15 1 0.0 43.4 66 38.8 10 40.2 0.0 16 1 0.0 43.1 66 43.1 10 42.0 0.0 17 1 0.0 42.0 66 42.0 10 42.0 0.0 20 1 0.0 43.9 66 43.1 10 42.0 0.0	Receiver8	æ	1.5	1 0.	0	45.5	99			01	45.		0.0	7	-7.0
10 1 0.0 42.8 66 42.8 10 42.8 0.0 0.0 11 1 0.0 40.9 66 40.9 10 40.9 0.0 0.0 13 0.0 40.2 66 40.2 10 40.9 0.0 0.0 13 0.0 39.4 0.0 39.4 0.0 0.0 14 0.0 39.4 66 39.4 10 39.4 0.0 0.0 14 0.0 43.1 66 43.1 10 43.1 0.0 0.0 14 0.0 39.6 66 42.0 10 43.1 0.0 0.0 14 0.0 39.6 66 42.0 10 43.1 0.0 0.0 0.0 14 0.0 0.	Receiver9	3)			0.	44.0	99			10	44		0.0	7	-7.0
11 1 0.0 40.9 66 40.9 10 40.9 0.0 12 1 0.0 40.2 66 40.2 10 40.2 0.0 13 1 0.0 39.4 66 39.4 10 40.2 0.0 14 1 0.0 38.8 66 38.8 10 40.2 0.0 15 1 0.0 43.1 66 43.1 10 43.1 0.0 16 1 0.0 42.0 66 42.0 10 42.0 0.0 17 1 0.0 42.0 66 39.6 10 42.0 0.0 20 1 0.0 64.8 66 64.8 10 64.8 0.0 21 1 0.0 62.0 66 62.0 10 62.0 0.0	Heceiver10	2	2	0	0.	42.8	99			- 01	42.		0.0	1	-7.0
12 1 0.0 40.2 66 40.2 10 40.2 0.0 13 1 0.0 39.4 66 39.4 10 39.4 0.0 14 1 0.0 38.8 66 38.8 10 39.4 0.0 15 1 0.0 43.1 66 43.1 10 43.1 0.0 16 1 0.0 42.0 66 42.0 10 42.0 0.0 17 1 0.0 42.0 66 39.6 10 42.0 0.0 20 1 0.0 64.8 66 64.8 10 42.0 0.0 21 1 0.0 64.8 66 64.8 10 64.8 0.0 23 0 0.0 62.0 62.0 10 62.0 0.0 <th< td=""><td>Receiver11</td><td>F</td><td></td><td>0</td><td>0</td><td>40.9</td><td>99</td><td></td><td></td><td>10</td><td>40.</td><td></td><td>0.0</td><td>7</td><td>-7.0</td></th<>	Receiver11	F		0	0	40.9	99			10	40.		0.0	7	-7.0
13 1 0.0 39.4 66 39.4 10 39.4 0.0 14 1 0.0 38.8 66 38.8 10 38.8 0.0 15 1 0.0 43.1 66 43.1 10 43.1 0.0 16 1 0.0 42.0 66 42.0 10 43.1 0.0 17 1 0.0 39.6 66 39.6 10 42.0 0.0 20 1 0.0 64.8 66 64.8 10 64.8 0.0 21 1 0.0 64.8 66 64.8 10 64.8 0.0 23 0 0.0 62.0 66 62.0 10 62.0 0.0 4DIS Noise Reduction Min Avg Max Avg Avg Avg Avg <td>Heceiver12</td> <td>12</td> <td></td> <td>Ĭ</td> <td>0.</td> <td>40.2</td> <td>99</td> <td></td> <td></td> <td>10</td> <td>40.</td> <td></td> <td>0.0</td> <td>7</td> <td>-7.0</td>	Heceiver12	12		Ĭ	0.	40.2	99			10	40.		0.0	7	-7.0
14 1 0.0 38.8 66 38.8 10 38.8 0.0 15 1 0.0 43.1 66 43.1 10 43.1 0.0 16 1 0.0 42.0 66 42.0 10 43.1 0.0 18 1 0.0 38.9 66 38.9 10 42.0 0.0 20 1 0.0 64.8 66 64.8 10 64.8 0.0 21 1 0.0 61.8 66 64.8 10 64.8 0.0 23 0 0.0 62.0 66 62.0 10 62.0 0.0 #DIS Noise Reduction Min Avg Max Avg A	Receiver13	13			0	39.4	99			10	39.		0.0	7	-7.0
15 1 0.0 43.1 66 43.1 10 43.1 0.0 16 1 0.0 42.0 66 42.0 10 42.0 0.0 17 1 0.0 38.9 66 38.9 10 39.6 0.0 20 1 0.0 64.8 66 64.8 10 64.8 0.0 21 1 0.0 61.8 66 61.8 10 64.8 0.0 23 0 0.0 62.0 66 62.0 10 62.0 0.0 # DUs Noise Reduction Min Avg Max Avg Avg Avg Avg	Receiver14	14		Ī	0.	38.8	99			10	38.		0.0	7	-7.0
16 1 0.0 42.0 66 42.0 10 42.0 0.0 17 1 0.0 39.6 66 39.6 10 39.6 0.0 20 1 0.0 64.8 66 64.8 10 64.8 0.0 21 1 0.0 61.8 66 61.8 10 64.8 0.0 23 0 0.0 62.0 66 62.0 10 62.0 0.0 # DUS Noise Reduction Min Avg Max Avg A	Heceiver15	42	1	ĺ	0.	43.1	99		Î	10	43.		0.0	7	-7.0
17 1 0.0 39.6 66 39.6 10 39.6 0.0 18 1 0.0 38.9 66 38.9 10 38.9 0.0 20 1 0.0 64.8 66 64.8 10 64.8 0.0 21 1 0.0 61.8 66 61.8 10 64.8 0.0 23 0 0.0 62.0 66 62.0 10 62.0 0.0 # DUS Noise Reduction Min Avg Max Avg A	Heceiver16	91			0.	45.0	99			10	45.		0.0	7	-7.0
18 1 0.0 38.9 66 38.9 10 38.9 0.0 20 1 0.0 64.8 66 64.8 10 64.8 0.0 21 1 0.0 61.8 66 61.8 10 64.8 0.0 23 0 0.0 62.0 66 62.0 10 62.0 0.0 # Dus Noise Reduction Min Avg Max	Receiver1/	17		0	0	39.6	99			01	39.		0.0	7	-7.0
20 1 0.0 64.8 66 64.8 10 64.8 0.0 21 1 0.0 61.8 66 61.8 10 61.8 0.0 23 0 0.0 62.0 66 62.0 10 62.0 0.0 # DUs Noise Reduction Min Avg Max Avg Nax	Heceiver18	34			0	38.9	99			10	38.		0.0	7	-7.0
21 1 0.0 61.8 66 61.8 10 61.8 0.0	Heceiver20	20	+	1	0	64.8	99		Ĭ,	10	64.		0.0	7	-7.0
# DUS Noise Reduction Min Avg Max 62.0 62.0 10 62.0 0.0	Graco Vallov Indonesia - 101	21	+	1	0	61.8	99			01	.61.		0.0	7	-7.0
# DUS Noise Reduction Min Avg Max	Grace valley independent Church	23		Ī	0	62.0	99				62.		0.0	7	27.0
Avg	Dwelling Units		# DNs	Noise R	eduction									7	
				Min	Avg	Ma	,								

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RESULTS: SOUND LEVELS					18402 US60 Ballard Co
		g B	용	ВВ	
All Selected	20	0.0	0.0	00	₩.
All Impacted	0	0.0	0.0		
All that meet NR Goal	0	0.0	0.0		

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RESULTS: SOUND LEVELS								18402 US60 Ballard Co) Ballard	0				
730														
CKA								28 August 2019	t 2019					
CHO								TNM 2.5						
DECILITY COUNTY TAYLOR								Calculate	Calculated with TNM 2.5	M 2.5				
PROJECT/CONTRACT:	•	1 600	18400 Licen Ballach											
RUN:	ш	kisting	Existing Site 5 11:15 am	:15 am										
BARRIER DESIGN:	=	PUT	INPUT HEIGHTS						Average	Average pavement type shall be used unless	e shall be	sed unles	SS	
ATMOSPHERICS:	9	8 deg	68 deg F, 50% RH	_					a State h	a State highway agency substantiates the use	sy substant	iates the u	nse	
Receiver									5	nein type with	approvar	JI FILWA.		
Name	No.	#DUs	Existing	No Barrier	1					With Barrier				
			LAeq1h	LAeq1h			Increase over existing	er existing	Type	Calculated	Noise Reduction	duction	-	
			Ш	Calculated	d Crith		Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	d Goal	Calculated	lated
		M	dBA	dBA	dBA	1	쁑	89		dBA	dB	Æ	Goal GB	Ì
Receiver1	-	1	0.0		59.5	99	59.5	5 10	-	59.5	I.C.	0.0	2 /	7.0
Receiver2	2	1	0.0		53.1	99	53.1	10 10		53.1	1	000	- 1	7.0
Receiver3	3	-	0.0		56.6	99	56.6		1	56.6	. 9	0.0		27.0
Receiver4	4	7	0.0		57.2	99	57.2	2 10	1	57.2	2	0.0	. 1	.70
Receiver5	2	-	0.0		58.5	99	58.5	5 10		58.5	22	0.0		-7.0
Receiver6	9	1	0.0		62.7	99	62.7	7 10	1	62.7	7	0.0	7	.70
Receiver7	7	-	0.0		59.7	99	59.7	7 10		59.7	1	0.0	1	-7.0
Heceiver8	89	_	0.0		45.3	99	45.3	3 10		45.3	3	0.0	7	-7.0
Receiver9	6	-	0.0		43.8	99	43.8	10	-	43.8	89	0.0	7	-7.0
Receiver10	10	_	0.0		42.6	99	42.6	01 9	-	42.6	9	0.0	7	-7.0
Heceiver11	=	-	0.0		40.5	99	40.5	.5 10	1	40.5	22	0.0	7	-7.0
Receiver12	12	-	0.0		39.8	99	39.8	9 10	-	39.8	8	0.0	7	-7.0
Receiver13	13	-	0.0		39.0	99	39.0	0 10	1	39.0	0	0.0	7	-7.0
Receiver14	14		0.0		38.3	99	38.3	3 10	1	38.3	3	0.0	7	-7.0
Receiverts	12		0.0		45.9	99	42.9	01 10	- 0	42.9	6	0.0	7	-7.0
Receiver16	16	-	0.0		41.6	99	41.6	01 9	-	41.6	9	0.0	7	-7.0
Heceiver1 /	17		0.0		39.2	99	39.2	2 10	1	39.2		0.0	7	-7.0
Heceiver18	48	-	0.0		38.5	99	38.5	5 10	1	38.5		0.0	7	-7.0
Heceiver20	20	•	0.0		63.6	99	63.6	01 10	1	63.6		0.0	7	-7.0
Grace Valley Indeed 1	24	-			8.09	99	8.09	10	1	8.09		0.0	7	-7.0
Glace valley independent Church	23	0	0.0		61.1	99	61.1	1 10	1	61.1		0.0	7	-7.0
Dwelling Units	*	# DUs	a	Reduction										2
			MIN	Avg	Max									

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RESULTS: SOUND LEVELS						18402 US60 Ballard Co
	0	뭐	ф	쁑		
All Selected	20	0.0		0.0	00	
All Impacted	0	0			3	
	0	0.0		0.0	0.0	
All that meet NR Goal	0	0.0		0.0	0.0	

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RESULTS: SOUND LEVELS									18402 US60 Ballard Co	0 Ballard	8				
OK4									28 August 2019	t 2019					
JRS									TNM 2.5						
									Calculate	Calculated with TNM 2 5	MOS				
RESULTS: SOUND LEVELS											2.7				
PROJECT/CONTRACT:		18402	18402 US60 Ballard Co	allard Co											
RUN: BARRIER DESIGN:		Existi	Existing Site 5 11:31 am	11:31 ar	-										
										Average	Average pavement type shall be used unless	se shall be	nsed un	ess	
ATMOSPHERICS:		68 de	68 deg F, 50% RH	HH						of a diffe	a state highway agency substantiates the use of a different type with approval of FHWA	cy substar	of FHWA	e nse	
Receiver												na o idda			
Name	No.	#DUs	Existin	-	No Barrier						With Barrier				
	_		LAeq1	_	11h		JI.	Increase over existing	rexisting	Type	Calculated		Noise Reduction		
				Calc	Calculated	Crit'n	Ca	Calculated	Crit'n Sub'l Inc	100	LAeq1h	Calculated	ed Goal		Calculated
			dBA	dBA		dBA	B	0.00	eg eg		dBA	eg eg	89		GB
Receiver1			1	0.0	60.2		99	60.2	Î	10	60.2	2	0.0	7	27.0
Receiver2	2		-	0.0	53.7		99	53.7		10	53.7	7	00	7	7.0
Receiver3	3		+	0.0	57.2		99	57.2		10	57.2	2	0.0	1	-7.0
Heceiver4	4		1	0.0	57.9		99	57.9		10	57.9	0	0.0	7	7.0
Receiver5	2		1	0.0	59.3		99	59.3		10	59.3	0	0.0	1	-7.0
Receiver6	9		1	0.0	63.5		99	63.5		10	63.5	22	0.0	1	-7.0
Receiver7	7		-	0.0	9.09		99	9.09		10	60.6	9	0.0	7	-7.0
Heceiver8	80		_	0.0	45.9		99	45.9	10	0	45.9	6	0.0	7	27.0
Receiver9	6		1	0.0	44.5		99	44.5		10	44.5	20	0.0	1	7.0
Receiver10	10		1	0.0	43.3		99	43.3		10	43.3	m	0.0	1	-70
Receiver11	F		-	0.0	41.2		99	41.2		10	41.2	2	0.0	. 1	.70
Heceiver12	12		1	0.0	40.5		99	40.5		10	40.5	2	0.0	7	-7.0
Receiver13	13		-	0.0	39.7		99	39.7		10	39.7	7	0.0	7	-7.0
Heceiver14	14		-	0.0	39.0		99	39.0		10	39.0	0	0.0	7	-7.0
Receiver15	15		1	0.0	43.6		99	43.6		10	43.6	9	00	. 1	7.0
Receiver16	16		-	0.0	42.3		99	42.3	3 10	- 0	42.3	60	0.0	1	7.0
Heceiver17	17		-	0.0	39.9		99	39.9	10	1 0	39.9	6	0.0	7	27.0
Heceiver18	18		1	0.0	39.2		99	39.2	2 10	- 0	39.2	2	0.0	7	-70
Heceiver20	20		-	0.0	64.3		99	64.3	3 10	- 0	64.3	3	0:0	7	-7.0
Heceiver21	21		-	0.0	61.5		99	61.5	5 10	0	61.5	2	0.0	1	.70
Grace Valley Independent Church	23		0	0.0	61.8		99	61.8	9 10	0	61.8	8	0.0	1	27.0
Dwelling Units		# DNs	Noise	Reduction	u.		-								2
			Min	Avg		Max									
O. Transport of the same of th				1			1								

5 mid_018
Site 5
0 Ballard\Existing
2_US60
C:\TNM25\18402

RESULTS: SOUND LEVELS					18402 US60 Ballard Co
		dB	쁑	贸	
All Selected	20	0.0	0.0	0.0	
All Impacted	0	0.0	0.0	0.0	
All that meet NR Goal	0	0.0	0.0	0.0	

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Crit'n GBA GBA GBBA GBB GB	dBA dBA 61.3 54.5 58.6 60.0 64.4 61.3	Increase over Calculated 61.3	28 August 2019 TNM 2.5 Calculated with TNM 2.5 Calculated with TNM 2.5 Average paver a State highw of a different t of a different t of a different t with the calculation of a different to a different	with TN Average a State h of a diffe Impact	M 2.5 pavement typ ighway agenc erent type with With Barrier Calculated LAeq1h	e shall be user y substantiate approval of F Noise Reduc Calculated	unless the use WA.	Calculated
Factor 18402 US60 Ballard Co	arrier 11h ulated Crit'n 61.3 61.3 58.0 60.0 64.4 61.3		Calculated Calculated Calculated Calculated Critin Sub'l Inc 10	a State h of a diffe	M 2.5 pavement typinghway agenterent type with With Barrie Calculated LAeq1h	be shall be used to substantiates to substantiates to approval of FHN Noise Reduction Calculated G	unless the use WA.	Calculated
18402 US60 Ballard Co	derrier ulated Crit'n ulated Crit'n dBA 61.3 54.5 58.0 60.0 64.4 61.3		Calculatec Calculatec existing Crit'n Sub'l Inc dB	Average a State h of a diffe	M 2.5 pavement typighway agenterent type with With Barrie Calculated LAeq1h	be shall be used to substantiates to substantiates to approval of FH. Noise Reduction Calculated Calculated	unless the use WA.	Calculated
18402 US60 Ballard Co	arrier 11h ulated Crit'n 61.3 64.5 58.0 58.0 60.0 64.4 61.3		existing Crit'n Sub'l Inc dB	Average a State h of a diffe Impact	M 2.5 pavement typinghway agenerent type with With Barrie	be shall be used to substantiates to approval of FHN Noise Reduction Calculated Galonian	unless the use WA.	Calculated
18402 US60 Ballard Co	arrier 11h ulated Crit'n 61.3 64.5 58.0 58.0 60.0 64.4		existing Crit'n Sub'l Inc dB 10		pavement typighway agen ighway agen arent type with With Barrie Calculated LAeq1h	be shall be used to substantiates to approval of FHN Noise Reduction Calculated G	unless The use WA.	Calculated
SPHERICS:	arrier 11h ulated Crit'n 61.3 61.3 58.0 58.0 60.0 64.4 61.3		existing Crit'n Sub'l Inc dB		pavement typ nighway agen arent type with With Barrie Calculated LAeq1h	be shall be used to substantiates to approval of FHN Noise Reduction Calculated G	unless WA.	Calculated
Existing Site 5 5:19 pm	arrier 41h ulated Crit'n 61.3 54.5 58.0 58.0 60.0 64.4		existing Crit'n Sub'l Inc dB 10		ighway agen ighway agen arent type witt With Barrie Calculated LAeq1h	cy substantiates n approval of FHN Noise Reductic	unless the use WA.	Calculated
SPHERICS: 68 deg F, 50% BH	tarrier 11h ulated Crit'n dBA 61.3 58.0 58.0 60.0 64.4		existing Crit'n Sub'l Inc dB 10		pavement typinighway agenorement type with srent type with With Barrie Calculated LAeq1h	cy substantiates h approval of FHN Noise Reductic	the use WA.	Calculated
Ferror No. #DUS Existing in District LAeq1h LAeq1h LAeq1h Calculated Crit'n ferd dBA dBA dBA ferd dBA dBA dBA dBA ferd dBA dBA dBA dBA dBA ferd deror dBA	farrier 11h ulated Critin dBA 61.3 54.5 58.0 58.0 60.0 64.4		existing Crit'n Sub'l Inc dB 10		with Barrie Calculated LAeq1h	cy substantiates h approval of FHI no Noise Reductic	wA.	Calculated
Per No. #DUS Existing in the partier No. Barrier LAeq1h LAeq1h LAeq1h Calculated Crit*n rer1 1 1 0.0 61.3 66 rer2 2 1 0.0 61.3 66 rer4 4 1 0.0 58.6 66 rer4 4 1 0.0 58.6 66 rer5 5 1 0.0 61.3 66 rer6 6 1 0.0 64.4 66 rer7 7 1 0.0 44.0 66 rer9 9 1 0.0 44.0 66 rer10 10 1 0.0 44.0 66 rer11 11 1 0.0 44.0 66 rer12 12 1 0.0 44.0 66 rer13 13 1 0.0 40.5 66 <t< td=""><td>darrier 11h dated Crit'n dBA 61.3 54.5 58.6 60.0 64.4 61.3</td><td></td><td>existing Crit'n Sub'l Inc dB 10</td><td></td><td>With Barrie Calculated LAeq1h</td><td>Noise Reductio</td><td>on S</td><td>Calculated</td></t<>	darrier 11h dated Crit'n dBA 61.3 54.5 58.6 60.0 64.4 61.3		existing Crit'n Sub'l Inc dB 10		With Barrie Calculated LAeq1h	Noise Reductio	on S	Calculated
No. #DUs Existing No Barrier LAeq1h LAeq	farrier 11h ulated Critin dBA 61.3 54.5 58.0 58.0 60.0 64.4		existing Crit'n Sub'l Inc dB 10		With Barrie Calculated LAeq1h	Noise Reduc Calculated	5	Calculated
Calculated Critin Calc	41h ulated Critin dBA 61.3 54.5 58.0 58.0 60.0 64.4 61.3		Crit'n Sub'l Inc dB		Calculated LAeq1h	Noise Reduction	uo	Calculated
Calculated Criting Calcula	61.3 68A 61.3 54.5 58.0 60.0 64.4 61.3	Calculated dB 61.3	Crit'n Sub'l In dB		LAeq1h	Calculated		Calculated
1 1 0.0 61.3 66 2 1 0.0 54.5 66 3 1 0.0 58.0 66 4 1 0.0 58.6 66 5 1 0.0 60.0 66 6 1 0.0 64.4 66 7 1 0.0 64.4 66 8 1 0.0 45.2 66 9 1 0.0 45.2 66 11 1 0.0 44.0 66 12 1 0.0 44.0 66 13 1 0.0 40.5 66 14 1 0.0 40.5 66 15 1 0.0 40.5 66 16 1 0.0 40.5 66 17 1 0.0 40.5 66 18 1 0.0 40.5 66 19 1 0.0 40.5 66 10 1 1 0.0 60.0 11 1 1 0.0 60.0 12 1 0.0 60.0 13 1 0.0 60.0 14 1 0.0 60.0 15 1 0.0 60.0 16 17 0.0 60.0 17 18 0.0 60.0 18 0.0 0.0 60.0 19 0.0 0.0 60.0 10 0.0 0.0 60.0 10 0.0 0.0 60.0 11 0.0 0.0 0.0 12 0.0 0.0 0.0 13 0.0 0.0 0.0 14 0.0 0.0 0.0 15 0.0 0.0 0.0 16 0.0 0.0 0.0 17 0.0 0.0 0.0 18 0.0 0.0 0.0 19 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 11 0.0 0.0 0.0 12 0.0 0.0 0.0 13 0.0 0.0 0.0 14 0.0 0.0 0.0 15 0.0 0.0 0.0 16 0.0 0.0 0.0 17 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 19 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 11 0.0 0.0 0.0 12 0.0 0.0 0.0 13 0.0 0.0 0.0 14 0.0 0.0 0.0 15 0.0 0.0 0.0 16 0.0 0.0 0.0 17 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 18 0.0 0.0 0.0 19 0.0 0.0 0.0 19 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 11 0.0 0.0 0.0 12 0.0 0.0 0.0 13 0.0 0	61.3 54.5 58.0 58.0 60.0 64.4 61.3	B	8				coal	minus
1				1	dBA	E	æ	Goal
2 1 0.0 54.5 3 1 0.0 58.0 5 1 0.0 60.0 6 1 0.0 64.4 7 1 0.0 64.4 8 1 0.0 46.6 9 1 0.0 45.2 11 1 0.0 44.0 12 1 0.0 44.0 13 1 0.0 44.0					613	00	1	20
3 1 0.0 58.0 4 1 0.0 58.6 5 1 0.0 60.0 6 1 0.0 64.4 7 1 0.0 46.6 9 1 0.0 45.2 10 1 0.0 44.0 12 1 0.0 41.3 14 1 0.0 40.5				1	545		- 1	7.0
4 1 0.0 58.6 5 1 0.0 60.0 6 1 0.0 64.4 7 1 0.0 61.3 8 1 0.0 46.6 9 1 0.0 45.2 10 1 0.0 44.0 12 1 0.0 41.3 13 1 0.0 40.5		66 58.0	ĺ	1	58.0		7	-7.0
6 1 0.0 60.0 6 1 0.0 64.4 7 1 0.0 61.3 8 1 0.0 46.6 9 1 0.0 45.2 10 1 1 0.0 42.0 12 1 0.0 41.3 13 1 0.0 40.5		66 58.6	10	1	58,6		7	-7.0
6 1 0.0 64.4 7 1 0.0 61.3 8 1 0.0 46.6 9 1 0.0 45.2 10 1 0.0 44.0 11 1 0.0 42.0 12 1 0.0 41.3 14 1 0.0 40.5		0.09 60.0	10	1	0.09		7	-7.0
7 1 0.0 61.3 8 1 0.0 46.6 9 1 0.0 45.2 10 1 0.0 44.0 11 1 0.0 42.0 12 1 0.0 41.3 13 1 0.0 40.5		66 64.4	10	1	64.4		7	-7.0
8 1 0.0 46.6 9 1 0.0 45.2 10 1 0.0 44.0 11 1 0.0 42.0 13 1 0.0 40.5 14 1 0.0 30.0		66 61.3	10	1	61.3		7	-7.0
9 1 0.0 45.2 10 1 0.0 44.0 11 1 0.0 42.0 12 1 0.0 41.3 13 1 0.0 40.5 14 1 0.0 30.0		99 46.6	10	1	46.6		7	-7.0
10 1 0.0 44.0 11 1 0.0 42.0 13 1 0.0 40.5 14 1 0.0 30.0		66 45.2	10	1	45.2		7	-7.0
11 1 0.0 42.0 12 1 0.0 41.3 13 1 0.0 40.5		66 44.0	10	1	44.0	0.0	7	-7.0
12 1 0.0 41.3 13 1 0.0 40.5 14 1 0.0 30.0		66 42.0	10	1	45.0	0.0	7	-7.0
13 1 0.0 40.5		66 41.3	10	1	41.3		7	-7.0
14 1 00		66 40.5	10	1	40.5		7	-7.0
חייים		666 39.9	10	ĺ	39.9		7	-7.0
15 1		66 44.3	10	1	44.3		7	-7.0
16 1		66 43.1	10	****	43.1		7	-7.0
		66 40.7	10	l	40.7		7	-7.0
		66 40.0	10	1	40.0		7	-7.0
20 1 0.0		66 65.2	10	I	65.2		7	-7.0
21 1 0.0 62.5		66 62.5	10	1	62.5		7	7.0
Grade Valley Irridependent Church 23 0 0.0 62.8 66		56 62.8	10	1	62.8		7	7.0
Dwelling Units # DUS Noise Reduction	ion						8	0,1
Min Ava Max								

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RESULTS: SOUND LEVELS					18402 US60 Ballard Co
	dВ	_	용	B	
All Selected	20	0.0	0.0	0.0	
III Impacted	C	0.0	0.0	0.0	
All that meet NR Goal	0	0.0	0.0	0.0	

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RESULTS: SOUND LEVELS								18402 US60 Ballard Co	0 Ballard	8				
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- CASE								28 August 2019	t 2019					
JRS								TNM 2.5						
								Calculate	Calculated with TNM 2.5	M 2.5				
RESULTS: SOUND LEVELS														
PROJECT/CONTRACT:	23	18402	18402 US60 Ballard Co	ard Co										
RUN: BARRIER DESIGN:		Existir	Existing Site 5 5:34 pm INPLIT HEIGHTS	:34 pm										
									Average	Average pavement type shall be used unless	e shall be u	sed unles	S	
ATMOSPHERICS:		68 de	68 deg F, 50% RH	H					a State I	a State highway agency substantiates the use of a different type with appropriate of ELIWA	cy substantia	ates the u	Se	
Receiver										and adds more	appioval	LUMA.		
Name	No.	#DUs	Existing	No Barrier	er					With Barrier				
			LAeq1h	LAeq1h		H	Increase over existing	er existing	Type	Calculated	Noise Reduction	uction		
				Calculated	ed Crit'n	<u>_</u> c	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated Goal	Goal	Calculated	lated
			dBA	dBA	dBA	Ü	B	B		dBA	æ	Æ	Goal	
Receivert	+		0	0.0	60.5	99	60.5	.5 10		60.5		00	3	100
Receiver2	2		0	0.0	53.8	99				53.8		200	, ,	1.0
Receiver3	3		1 0	0.0	57.2	99				57.2		0.0		-7.0
Receiver4	4		1 0	0.0	57.8	99	57.8	.8 10	1	57.8		0.0	. 1	-7.0
Receiver5	5		1 0	0.0	59.2	99	59.2	.2 10	-	59.2		0.0	7	27.0
Receiver6	9		1 0	0.0	63.4	99	63.4	10	1	63.4		0.0		-7.0
Receiver7	7		1 0	0.0	60.3	99		.3 10		60.3		0.0	1	-7.0
Heceiver8	8		1	0.0	46.0	99	46.0	01 0.	1	46.0		0.0	7	-7.0
Receiver9	o		1 0	0.0	44.5	99	3 44.5	.5		44.5		0.0	7	-7.0
Heceiver10	10			0.0	43.3	99	43.3	.3 10	0	43.3		0.0	7	-7.0
Heceiver11	=		1	0.0	41.2	99	41.2	.2 10	1	41.2		0.0	7	-7.0
Heceiver12	12		1 0	0.0	40.4	99	40.4	4.		40.4		0.0	7	-7.0
Heceiver13	13		1 0	0.0	39.7	99	39.7	7. 10	1	39.7		0.0	7	-7.0
Heceiver14	14		1 0	0.0	39.0	99	39.0	0. 10	-	39.0		0.0	7	-7.0
Heceiver15	15		1 0	0.0	43.6	99	43.6	01 9.		43.6		0.0	7	-7.0
Heceiver16	16		1 0	0.0	45.3	99	42.3	.3 10	-	42.3		0.0	7	-7.0
Heceiver1 /	17		1 0	0.0	39.9	99	39.9	9 10	1	39.9		0.0	7	-7.0
Heceiver18	18			0.0	39.2	99	39.2	.2 10	1	39.2		0.0	7	-7.0
Heceiver20	20		f	0.0	64.4	99	64.4	.4 10	1	64.4		0.0	7	-7.0
Heceiver21	21			0.0	9.19	99	61.6	.6 10	1	61.6		0.0	7	-7.0
Grace valley independent Church	23	_	0	0.0	62.0	99	62.0	0. 10	1	62.0		0.0	7	-7.0
Dwelling Units		# DNs	Noise	Reduction										2
			Min	Avg	Max	×								

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					18402 US60 Ballard Co
		界	号	89	
Selected	20	0.0	00	00	
Same and Asset			5	2.0	
Impacted	0	0.0	0.0	00	
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APPENDIX D 2040 NO-BUILD ANALYSIS

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Ok4, Inc. JRS RESILTS: SOUND LEVELS													
JRS JRS RESULTS SOUND LEVELS													
JRS RESULTS SOUND LEVELS							2	28 August 2019	2019				
RESULTS: SOUND LEVELS							-	TNM 2.5					
RESULTS: SOUND I EVELS							J	Calculated with TNM 2 5	with TNA	125			
יייינים ביייים מסטום דרגדרם										212			
PROJECT/CONTRACT:		1840	18407 - US 60 Ballard Co.	llard Co.									
RUN: BARRIER DESIGN:		2040 INP	2040 No Build INPUT HEIGHTS					Ý	Average	Average pavement type shall be used unless	shall he use	od inless	
ATMOSPHERICS:		68 9	68 deg F, 50% RH						a State hi	a State highway agency substantiates the use	y substantiat	es the us	ø
Receiver										or a direction type with approval of FRWA.	approval of r	HWA.	
Name	No.	#DNs		No Barrier						With Barrier			
		_	LAeq1h	LAeq1h		lnc	Increase over existing		Type	Calculated	Noise Reduction	ction	
				Calculated	Crit'n	Ca	Calculated C	0	Impact	LAeq1h	Calculated Goal	Goal	Calculated minus
	-		dBA	dBA	dBA	8		æ		ABA	9	9	Goal
Receiver1		-	1 0.0	0 64.5	ıc	99	64.5	0,			3		g
Receiver2		2	1 0.0		8	99	8 49	2 5		0.4.0			
Receiver3	1	0	1 0.0		-	99	64.1	0 0	1	64.1	0.0		7 7.0
Receiver4	4	4	1 0.0	0 57.6	2	99	57.6	10	-	57.6			
Receiver5		2	1 0.0	ij	2	99	929	10	1	65.6			
Heceiver6		9	1 0.0	0 64.3	8	99	64.3	10	1	64.3			7 -70
Heceiver7		7			m	99	65.3	10	1	65.3			
Hecelvera		80			9	99	64.6	10	-	64.6	0.0	0	
Receivery	72	6			0	99	0.99	10	Snd Lvl	0.99	0.0	0	
December 10		10			2	99	2.79	10	Snd LvI	7.79	0.0	0	7 -7.0
December 1		=			4	99	69.4	10	Snd LvI	69.4	0.0		
Deceiveriz		12	Ĭ		0	99	56.9	10	Ţ	56.9	0.0	0	
necelveria	7	13				99	63.7	10	ł	63.7	0.0		
Deceiver 14		14			9	99	58.6	10	1	58.6	0.0		7 -7.0
neceiverio		16			e	99	61.3	10		61.3	0.0		
Hecelver1 /		17		0 57.4	4	99	57.4	10	1	57.4			
heceiverig		19	Ĩ	0 65.9	O	99	62.9	10	1	62.9			
Heceiver21	cA	21	1 0.0	0 66.7	7	99	2.99	10	Snd Lvl				
Heceiver22	21	22	1 0.0		8	99	54.8	10	1	54.8			
Heceiver23	CA	23			3	99	68.3	10	Snd LvI	68.3			
necelver24	CI	24	1 0.0	0 68.8	3	99	68.8	10	Snd Lvl				
Hecelver25	2	25	1 0.0	0 41.3	6	99	41.3	10	1				
Heceiver27	CA	27	1 0.0	0 65.4	44	99	65.4	10	1	65.4			

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66 65.1 10 65.1 0.0 7 66 61.1 10 68.3 0.0 7 66 61.1 0 61.1 0.0 7 66 61.2 10 61.1 0.0 7 66 65.5 10 65.2 0.0 7 66 64.7 10 65.1 0.0 7 66 65.1 10 65.1 0.0 7 66 65.1 10 65.1 0.0 7 66 65.1 10 65.1 0.0 7 66 65.1 10 65.1 0.0 7 66 65.1 10 65.1 0.0 7 67 4.2 10 65.1 0.0 7 68 6.2 <t< th=""><th>ACOUNT SOUND LEVELS</th><th></th><th></th><th></th><th></th><th>1840</th><th>9 Sn - 2</th><th>18407 - US 60 Ballard Co.</th><th></th><th></th><th></th><th></th></t<>	ACOUNT SOUND LEVELS					1840	9 Sn - 2	18407 - US 60 Ballard Co.				
28 1 0.0 65.3 16 65.3 10	Heceiver28	28		65.1	99	65.1	10	1	65.1	0.0	7	.70
30 1 0.0 65.1 66.1 10 66.1 0.0 7 66.2 10 66.1 0.0 7 66.2 10 66.1 0.0 7 66.2 10 66.1 0.0 7 66.2 0.0 7 66.2 0.0 7 66.2 0.0 7 66.2 0.0 7 66.2 0.0 7 66.2 0.0 7 66.2 0.0 7 66.2 0.0 7 66.2 0.0 7 66.2 0.0 7 66.2 0.0 0.0 0.0 0.0 66.2 66.2 66.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <	Receiver29	59	Ī	63.3	99	63.3	10	}	63.3	00	. 1	2 6
31 1 0.0 65.5 66.5 10 65.5 0.0 7 38 1 0.0 67.2 66 64.7 10 65.5 0.0 7 38 1 0.0 67.2 66 64.7 10 66.5 0.0 7 38 1 0.0 65.5 66 66.5 10 66.1 0.0 7 38 1 0.0 66.1 66.5 10 66.5 0.0 7 38 1 0.0 66.1 66.5 10 66.5 0.0 7 40 1 0.0 66.1 66.5 10 66.5 0.0 7 40 1 0.0 66.1 66.5 10 66.9 0.0 7 40 1 0.0 66.1 66.1 10 66.9	Receiver30	30		61.1	99	61.1	10	1	61.1	000	- 1	7.0
28 1 0.0 67.2 66 67.2 10 Smd LM 67.2 0.0 7 24 1 0.0 61.2 66 66.1 10 66.5 0.0 7 24 1 0.0 65.5 66 66.1 10 66.5 0.0 7 29 1 0.0 65.5 66 66.1 10 66.5 0.0 7 29 1 0.0 66.1 66.1 10 66.5 0.0 7 29 1 0.0 66.1 10 66.5 0.0 7 29 1 0.0 66.2 66 66.1 10 66.5 0.0 7 40 1 0.0 66.2 66 66.3 10 66.5 0.0 7 40 1 0.0 66.8 66.1 10	Receiver31	31		65.5	99	65.5	-	9	200	0.0	- 1	0.7-
33 1 0.0 64.7 66.7 10 0.0 7 0.0 7 35 1 0.0 65.1 66.1 10 66.1 0.0 7 35 1 0.0 65.1 66.1 10 66.1 0.0 7 39 1 0.0 65.1 66 65.1 10 66.1 0.0 7 40 1 0.0 65.1 66 65.1 10 66.1 0.0 7 40 1 0.0 65.1 66 65.1 10 65.1 0.0 7 40 1 0.0 65.1 66 65.2 10 65.1 0.0 7 40 1 0.0 46.1 66 65.2 10 46.1 0.0 7 40 1 0.0 46.1 66 46.1	Receiver32	32		67.2	99	67.9	2 0	Spd Lot	00.0	0.0	,	-7.0
34 1 0.0 61.6 61.6 10 61.5 0.0 7 38 1 0.0 65.1 66.5 10 66.5 0.0 7 38 1 0.0 65.1 66.1 10 66.1 0.0 7 39 1 0.0 65.1 66 65.3 10 66.1 0.0 7 40 1 0.0 65.1 66 65.3 10 65.1 0.0 7 40 1 0.0 65.1 66 65.3 10 65.2 0.0 7 40 1 0.0 46.1 66 65.3 10 46.1 0.0 7 40 1 0.0 46.1 66 65.3 10 46.0 0.0 7 40 1 0.0 46.1 66 46.1	Receiver33	33	1 0.0	64.7	99	547	2 0	OIO LVI	2.10	0.0	,	-7.0
36 1 0.0 665.6 665.1 10	Receiver34	34	1 0.0	616	8 99	2.4.2	2 5		04.7	0.0	,	-7.0
38 1 0.0 65.1 66.1 10	Receiver35	35		מיני	0 8	0.10	2 9		0.10	0.0	1	-7.0
35 1 0.0 65.1 10	Receiver36	38		200	00	0.00	2	1	65.5	0.0	7	-2.0
35 1 0.00 695,1 665,1 10	Receiver37	20 00		1,50	99	65.1	10	-	65.1	0.0	7	-7.0
38 1 0.0 63.9 66 63.9 10 63.9 0.0 7 40 1 0.0 62.9 66 63.7 10 62.9 0.0 7 40 1 0.0 46.8 66 63.7 10 52.9 0.0 7 42 1 0.0 46.8 66 48.1 10 46.1 0.0 7 44 1 0.0 44.0 66 48.1 10 46.1 0.0 7 45 1 0.0 44.0 66 48.1 10 46.1 0.0 7 46 1 0.0 42.1 66 42.1 10 42.1 0.0 7 48 1 0.0 42.1 66 42.1 10 42.1 0.0 7 51 1 0.0	Bosoniose	50		65.1	99	65.1	10	L	65.1	0.0	7	-7.0
40 63 63 7 7 7 42 1 0.0 46.1 66 52.9 10 52.9 0.0 7 42 1 0.0 46.1 66 46.1 10 46.2 0.0 7 43 1 0.0 46.1 66 48.1 10 46.1 0.0 7 44 1 0.0 44.0 66 48.1 10 46.1 0.0 7 44 1 0.0 44.2 66 42.8 10 46.1 0.0 7 44 1 0.0 41.2 66 42.1 10 42.8 0.0 7 44 1 0.0 41.2 66 42.1 10 42.8 0.0 7 50 1 0.0 41.2 66 42.1 10	neceive 30	88		63.9	99	63.9	10	1	63.9	0.0	7	-7.0
40 1 0.0 52.9 66 52.9 10 68.9 0.0 7 42 1 0.0 46.8 10 46.8 10 46.8 0.0 7 43 1 0.0 44.0 66 44.0 10 46.1 0.0 7 44 1 0.0 42.8 66 44.0 10 44.0 0.0 7 48 1 0.0 42.8 66 42.8 10 44.0 0.0 7 49 1 0.0 42.8 66 42.8 10 43.0 0.0 7 50 1 0.0 42.1 66 42.1 10 43.0 0.0 7 50 1 0.0 42.1 0.0 42.1 10 42.1 0.0 7 51 1	neceiverse	39	1 0.0	63.7	99	63.7	10	-	63.7	0.0	7	-7.0
42 1 0.0 46.8 66 46.8 10 46.8 0.0 7 43 1 0.0 46.1 66 48.1 10 46.1 0.0 7 44 1 0.0 43.4 66 43.4 10 43.4 0.0 7 46 1 0.0 42.8 66 43.2 10 42.8 0.0 7 49 1 0.0 42.1 66 42.1 10 42.8 0.0 7 49 1 0.0 42.1 66 42.1 10 42.8 0.0 7 50 1 0.0 41.5 66 40.8 10 41.5 0.0 7 55 1 0.0 42.1 66 40.5 10 42.9 0.0 7 56 1 0.0	Receiver40	40		52.9	99	52.9	10	1	52.9	0.0	7	-7.0
43 1 0.0 46.1 66 46.1 10 46.1 0.0 46.1 0.0 46.1 0.0 44.0 0.0 44.0 0.0 44.0 0.0 45.0 0.0 7 45 1 0.0 42.0 6.6 42.1 1.0 43.0 0.0 7 49 1 0.0 42.0 6.6 42.1 1.0 43.0 0.0 7 50 1 0.0 42.0 6.6 42.1 1.0 43.0 0.0 7 50 1 0.0 44.5 6.6 40.5 1.0 40.5 0.0 7 51 1 0.0 40.5 6.6 40.5 1.0 40.5 0.0 7 52 1 0.0 67.6 6.6 67.6 1.0 <td>Heceiver42</td> <td>45</td> <td>1 0.0</td> <td>46.8</td> <td>99</td> <td>46.8</td> <td>10</td> <td>ĺ</td> <td>46.8</td> <td>0.0</td> <td>7</td> <td>7.0</td>	Heceiver42	45	1 0.0	46.8	99	46.8	10	ĺ	46.8	0.0	7	7.0
44 1 0.0 44.0 66 44.0 10 44.0 0.0 7 45 1 0.0 42.4 66 42.4 10 43.4 0.0 7 46 1 0.0 42.8 66 42.8 10 43.4 0.0 7 49 1 0.0 42.8 66 42.8 10 43.8 0.0 7 49 1 0.0 42.8 66 42.1 10 43.0 0.0 7 49 1 0.0 42.1 66 42.1 10 43.0 0.0 7 50 1 0.0 42.1 66 42.1 10 42.1 0.0 7 52 1 0.0 62.9 66 62.9 10 42.9 0.0 7 55 1 0.0	Heceiver43	43		46.1	99	46.1	10	1	46.1	0.0	7	7.0
45 1 0.0 43.4 10 43.4 0.0 7 47 1 0.0 42.8 66 42.8 10 42.8 0.0 7 49 1 0.0 42.8 66 42.1 10 43.0 0.0 7 50 1 0.0 41.5 66 42.1 10 42.1 0.0 7 51 1 0.0 41.5 66 40.8 10 41.6 0.0 7 51 1 0.0 41.5 66 40.8 10 41.8 0.0 7 54 1 0.0 62.9 66 62.9 10 40.8 0.0 7 55 1 0.0 62.9 66 67.5 10 62.9 0.0 7 56 1 0.0 62.9 66	Heceiver44	44		44.0	99	44.0	10	1	44.0	00		10
47 1 0.0 42.8 66 42.8 10 42.8 0.0 7 48 1 0.0 43.0 66 42.1 10 43.0 0.0 7 50 1 0.0 41.5 66 40.5 10 42.8 0.0 7 51 1 0.0 41.5 66 40.5 10 42.8 0.0 7 52 1 0.0 40.5 66 40.5 10 40.5 0.0 7 54 1 0.0 62.9 66 40.5 10 40.5 0.0 7 55 1 0.0 62.9 66 62.9 10 63.1 0.0 7 56 1 0.0 67.6 66 67.9 10 62.9 0.0 7 56 1 0.0	Receiver45	45		43.4	99	43.4	10	1	43.4	00		7.0
48 1 0.0 43.0 10 45.0 10 45.0 10 45.0 0.0 7 49 1 0.0 42.1 66 42.1 10 42.1 0.0 7 51 1 0.0 41.5 66 40.8 10 44.1 0.0 7 52 1 0.0 40.5 66 40.5 10 40.5 0.0 7 52 1 0.0 40.5 66 40.2 10 40.5 0.0 7 54 1 0.0 67.6 66 67.8 10 63.1 0.0 7 55 1 0.0 67.6 66 67.8 10 63.8 66 67.8 10 63.1 0.0 7 60 1 0.0 67.6 66.8 <t< td=""><td>Receiver47</td><td>- 47</td><td></td><td>42.8</td><td>99</td><td>42.8</td><td>10</td><td>1</td><td>42.8</td><td>0.0</td><td></td><td>7.0</td></t<>	Receiver47	- 47		42.8	99	42.8	10	1	42.8	0.0		7.0
49 1 0.0 42.1 66 42.1 10 42.1 0.0 42.1 0.0 42.1 0.0 41.5 0.0 7 41.5 0.0 7	Receiver48	48		43.0	99	43.0	10	1	43.0	0.0	7	-70
50 1 0.0 41.5 66 41.5 10 41.5 0.0 7 51 1 0.0 40.8 66 40.8 10 40.6 0.0 7 52 1 0.0 62.9 66 62.9 10 40.5 0.0 7 55 1 0.0 62.9 66 62.9 10 62.9 0.0 7 56 1 0.0 67.6 66 67.6 10 63.1 0.0 7 56 1 0.0 67.6 66 67.6 10 63.1 0.0 7 60 1 0.0 63.8 66 67.6 10 63.8 0.0 7 60 1 0.0 65.9 66 67.9 10 63.8 0.0 7 61 1 0.0	Heceiver49	49		42.1	99	42.1	10	1	42.1	0.0	7	7.0
51 1 0.0 40.8 66 40.8 10 40.8 0.0 7 52 1 0.0 40.5 66 40.5 10 40.8 0.0 7 54 1 0.0 62.9 66 62.9 10 62.9 0.0 7 56 1 0.0 67.6 66 67.6 10 62.9 0.0 7 56 1 0.0 67.6 66 67.6 10 62.9 0.0 7 56 1 0.0 67.6 66 68.5 10 63.8 0.0 7 60 1 0.0 67.9 66 66.5 10 67.9 0.0 7 60 1 0.0 66.5 66 66.5 10 61.0 0.0 7 61 1 0.0	Receiver50	20		41.5	99	41.5	10	1	41.5	0.0	7	7.0
52 1 0.0 40.5 10 40.5 10 40.5 0 7 54 1 0.0 62.9 66 62.9 10 62.9 0 7 55 1 0.0 67.6 66.9 10 62.9 0 7 56 1 0.0 67.6 66 67.6 10 62.9 0 7 60 1 0.0 67.6 66 67.6 10 63.1 0 7 60 1 0.0 67.6 66 67.9 10 63.8 0 0 7 60 1 0.0 61.0 66 61.0 10 61.0 0 7 62 1 0.0 61.0 66 61.0 10 62.9 0 0 7 63 1	Receiver51	51		40.8	99	40.8	10	1	40.8	0.0	7	7.0
54 1 0.0 62.9 66 62.9 10 62.9 0.0 7 55 1 0.0 63.1 66 63.1 10 63.1 0.0 7 56 1 0.0 67.6 66 67.6 10 63.1 0.0 7 58 1 0.0 67.9 66 67.9 10 63.8 0.0 7 61 1 0.0 67.9 66 67.9 10 63.8 0.0 7 62 1 0.0 67.9 66 66.5 10 67.9 0.0 7 62 1 0.0 61.0 66.5 66 61.0 61.0 0.0 7 63 1 0.0 61.0 61.0 10 61.0 0.0 7 64 1 0.0 62.9<	Receiver52	52		40.5	99	40.5	10	1	40.5	0.0	7	7.0
55 1 0.0 63.1 10 63.1 10 63.1 0.0 7 56 1 0.0 67.6 66 67.6 10 Snd LvI 67.6 0.0 7 56 1 0.0 63.8 66 63.8 10 63.8 0.0 7 60 1 0.0 63.8 66 63.8 10 63.8 0.0 7 60 1 0.0 65.9 66 64.9 10 64.9 0.0 7 60 1 0.0 61.0 66.5 10 0.0 7 61 1 0.0 61.0 66.5 10 61.0 0.0 7 62 1 0.0 61.0 66.5 10 61.0 0.0 7 63 1 0.0 62.9 66.0 66.9 <td>Receiver54</td> <td>54</td> <td>1 0.0</td> <td>65.9</td> <td>99</td> <td>62.9</td> <td>10</td> <td>1</td> <td>62.9</td> <td>0.0</td> <td>7</td> <td>7.0</td>	Receiver54	54	1 0.0	65.9	99	62.9	10	1	62.9	0.0	7	7.0
56 1 0.0 67.6 66 67.6 10 57.6 0.0 7 57 1 0.0 63.8 66 63.8 10 63.8 0.0 7 60 1 0.0 64.9 66 64.9 10 64.9 0.0 7 60 1 0.0 64.9 66 66.5 10 64.9 0.0 7 61 1 0.0 61.0 66.5 66 61.0 61.0 0.0 7 62 1 0.0 61.0 66.5 61.0 10 61.0 0.0 7 63 1 0.0 61.0 66.8 66.8 10 61.0 0.0 7 64 1 0.0 65.8 66 65.9 10 62.9 0.0 7 65 1 0.0 65.6	Receiver55	22		63.1	99	63.1	10	ı	63.1	00	. 7	2.70
57 1 0.0 63.8 66 63.8 10 63.8 0.0 7 56 1 0.0 54.9 66 54.9 10 54.9 0.0 7 60 1 0.0 66.5 66 66.5 10 61.0 0.0 7 62 1 0.0 61.0 66 61.0 10 61.0 0.0 7 63 1 0.0 61.0 66 61.0 10 61.0 0.0 7 63 1 0.0 62.9 66 62.9 10 61.0 0.0 7 64 1 0.0 65.6 66 66.8 10 62.9 0.0 7 65 1 0.0 65.6 66 65.6 10 65.0 0.0 7 66 1 0.0	Receiver56	56	1 0.0	9.79	99	67.6	10	Snd Lvl	9.79	0.0	7	27.0
58 1 0.0 54.9 66.5 10 54.9 0.0 7 60 1 0.0 66.5 66.5 10 Snd Lvl 66.5 0.0 7 61 1 0.0 61.0 66.5 61.0 10 61.0 7 62 1 0.0 61.0 66.0 61.0 10 61.0 0.0 7 63 1 0.0 61.0 66.0 61.0 10 61.0 0.0 7 64 1 0.0 62.9 66 62.9 10 62.9 0.0 7 65 1 0.0 65.8 66 66.8 10 62.9 0.0 7 66 1 0.0 65.6 66 66.8 10 44.2 0.0 7 66 1 0.0 43.4 66 43.	Receiver57	25	1 0.0	63.8	99	63.8	10	l	63.8	0.0	7	7.0
60 1 0.0 66.5 66.5 10 Snd Lvl 66.5 0.0 7 61 1 0.0 61.0 66.0 61.0 10 61.0 0.0 7 62 1 0.0 61.0 66.0 61.0 10 61.0 0.0 7 63 1 0.0 62.9 66 66.8 10 62.9 0.0 7 65 1 0.0 65.8 66 66.8 10 65.9 0.0 7 65 1 0.0 65.6 66 65.6 10 65.0 7 66 1 0.0 44.2 66 44.2 10 44.2 0.0 7 66 1 0.0 43.4 66 43.7 10 43.4 0.0 7 68 1 0.0 43.0 66 <td>Receiver58</td> <td>28</td> <td></td> <td>54.9</td> <td>99</td> <td>54.9</td> <td>10</td> <td>1</td> <td>54.9</td> <td>0.0</td> <td>7</td> <td>-7.0</td>	Receiver58	28		54.9	99	54.9	10	1	54.9	0.0	7	-7.0
61 1 0.0 61.0 66 61.0 10 61.0 0.0 7 62 1 0.0 61.0 66.8 61.0 10 61.0 0.0 7 63 1 0.0 62.9 66 62.9 10 61.0 0.0 7 64 1 0.0 65.8 66 66.8 10 65.9 0.0 7 65 1 0.0 65.6 66 65.6 10 65.6 0.0 7 66 1 0.0 44.2 66 44.2 10 44.2 0.0 7 67 1 0.0 43.7 66 43.7 10 43.7 0.0 7 68 1 0.0 43.4 66 43.7 10 43.7 0.0 7 70 1 0.0	Heceiver60	09	1 0.0	66.5	99	66.5	10	Snd Lvl	66.5	0.0	7	-7.0
62 1 0.0 61.0 66.9 61.0 10 61.0 0.0 7 63 1 0.0 62.9 66 62.9 10 62.9 0.0 7 64 1 0.0 66.8 66 66.8 10 62.9 0.0 7 65 1 0.0 65.6 66 66.8 10 65.6 0.0 7 66 1 0.0 44.2 66 44.2 10 44.2 0.0 7 66 1 0.0 43.7 66 43.7 10 43.7 0.0 7 68 1 0.0 43.4 66 43.4 10 43.4 0.0 7 70 1 0.0 42.7 66 43.0 10 43.0 0.0 7 86 1 0.0	Heceiver61	61		61.0	99	61.0	10	ı	61.0	0.0	7	-7.0
63 1 0.0 62.9 10 62.9 10 62.9 0.0 7 64 1 0.0 66.8 66 66.8 10 65.6 0.0 7 65 1 0.0 65.6 66 66.8 10 65.6 0.0 7 66 1 0.0 44.2 66 44.2 10 44.2 0.0 7 67 1 0.0 43.7 66 43.7 10 43.7 0.0 7 69 1 0.0 43.0 66 43.0 10 43.0 0.0 7 70 1 0.0 42.7 66 42.7 10 43.0 0.0 7	Heceiver62	62		61.0	99	61.0	10	ı	61.0	0.0	7	-7.0
64 1 0.0 66.8 66 66.8 10 Snd LvI 66.8 0.0 7 65 1 0.0 44.2 66 65.6 10 65.6 0.0 7 66 1 0.0 44.2 66 44.2 10 44.2 0.0 7 68 1 0.0 43.4 66 43.4 10 43.7 0.0 7 69 1 0.0 43.0 66 43.0 10 43.0 0.0 7 70 1 0.0 42.7 66 42.7 10 43.0 0.0 7 71 1 0.0 42.1 66 42.7 10 42.7 0.0 7	Receiver63	63	1 0.0	62.9	99	62.9	10	1	65.9	0.0	7	-7.0
65 1 0.0 65.6 66 65.6 10 65.6 0.0 7 66 1 0.0 44.2 66 44.2 10 44.2 0.0 7 68 1 0.0 43.4 66 43.4 10 43.4 0.0 7 69 1 0.0 42.7 66 42.7 10 43.0 0.0 7 70 1 0.0 42.7 66 42.7 10 43.7 0.0 7 71 1 0.0 42.1 66 42.7 10 42.7 0.0 7	Heceiver64	64		8.99	99	66.8	10	Snd Lvi	66.8	0.0	7	-7.0
66 1 0.0 44.2 66 44.2 10 44.2 0.0 7 67 1 0.0 43.7 66 43.7 10 43.7 0.0 7 69 1 0.0 43.0 66 43.0 10 43.0 0.0 7 70 1 0.0 42.7 66 42.7 10 42.7 0.0 7 71 1 0.0 42.1 66 42.7 10 42.7 0.0 7	Heceiver65	99	1 0.0	9:59	99	65.6	10	1	65.6	0.0	7	27.0
67 1 0.0 43.7 66 43.7 10 43.7 0.0 7 68 1 0.0 43.4 66 43.4 10 43.4 0.0 7 70 1 0.0 42.7 66 42.7 10 43.0 0.0 7 71 1 0.0 42.1 66 42.7 10 42.7 0.0 7	Receiver66	99		44.2	99	44.2	10		44.2	00	7	7.0
68 1 0.0 43.4 66 43.4 10 43.4 0.0 7 69 1 0.0 43.0 66 43.0 10 43.0 0.0 7 70 1 0.0 42.7 10 42.7 10 42.7 0.0 7	Receiver67	29	1 0.0	43.7	99	43.7	10	-	43.7	00	7	7.0
69 1 0.0 43.0 66 43.0 10 43.0 0.0 7 70 1 0.0 42.7 66 42.7 10 42.7 0.0 7 71 1 0.0 42.1 66 42.7 10 42.7 0.0 7	Receiver68	89		43.4	99	43.4	10	1	43.4	000	. 1	2 0
70 1 0.0 42.7 66 42.7 10 42.7 0.0 7	Receiver69	69	1	43.0	99	43.0	101		450	0.0	- 1	0.7-
71 1 0.0 42.1 66 72.1 10	Receiver70	70		42.7	99	42.7	10	-	45.0	0.0	,	-7.0
	Receiver71	71	1 0.0	42.1	99	40.1	2 0		46.1	0.0	,	-7.0

28 August 2019

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	72	-	0.0	42.4	99	42.4	4 10	-	V CV	00	٢	01
Receiver73	73	1 0	0.0	41.9	99	41.9	10	1	41.0	0.00	, ,	1.0
Receiver74	74	1	0.0	41.6	99	416	2 5		D. 0	0.0	, ,	0.7-
Receiver75	75	1	0.0	40.8	99	AN A	2 5		0.14	0.0	,	-7.0
Receiver77	77	-	0.0	40.4	8 8	0.04	2 9	ı	40.8	0.0	7	-7.0
Receiver78	78	-	00	306	00 00	4.04	2 9		40.4	0.0	7	-7.0
Receiver79	202		0.00	0.00	00	0.80	0 9	1	39.6	0.0	7	-7.0
Receiver80	2 0		2 0	4.90	90	39.4	10		39.4	0.0	7	-7.0
Beceiver82	8		0.0	39.5	99	39.5	10	i	39.5	0.0	7	-7.0
Dooglasto	82	0	0.0	65.2	99	65.2	10	1	65.2	0.0	7	-7.0
neceivelos	83	-	0.0	66.4	99	66.4	10	Snd Lvl	66.4	0.0	7	-7.0
neceive 64	84	1	0.0	63.9	99	63.9	10	-	63.9	0.0	7	-7.0
Heceiver85	82	1 0	0.0	0.99	99	0.99	10	Snd LvI	0.99	0.0	7	27.0
Heceiver86	98	1 0	0.0	65.3	99	65.3	10	1	65.3	0.0	. 1	-7.0
Heceiver87	87	1 0	0.0	64.9	99	64.9	10		64.9	00	7	7.0
Receiver88	88	1 0	0.0	65.1	99	65.1	10	-	65.1	0.0	, ,	200
Receiver89	88	1 0	0.0	65.1	99	65.1	10	1	65.1	00	. 1	270
Receiver91	91	1 0	0.0	63.3	99	63.3	10	-	63.3	000		1.0
Receiver92	35	1	0.0	64.5	99	64.5	10	1	64.5	000	7	7.0
Receiver93	83	1 0	0.0	65.1	99	65.1	10	-	65.1	000		7.0
Receiver95	92	1 0	0.0	63.5	99	63.5	10	1	63.5	0.0	7	27.0
Receiver96	96	1 0	0.0	67.1	99	67.1	10	Snd Lvl	67.1	000		7.0
Receiver98	86	1 0	0.0	44.3	99	44.3	10		44.3	000	1	7.0
Receiver100	100	1 0	0.0	62.2	99	62.2	10		623	00		7.0
Receiver101	101	1 0	0.0	56.1	99	56.1	10		56.1	000		7.0
Receiver102	102	1 0	0.0	48.8	99	48.8	10		48.8	000	7	7.0
Receiver103	103	1 0	0.0	45.1	99	45.1	10	1	45.1	000	, 1	7.0
Receiver104	104	1	0.0	44.2	99	44.2	10	******	44.2	000		1.0
Receiver105	105	1 0	0.0	43.6	99	43.6	10	-	43.6	000	, '	1.0
Receiver106	106	1 0	0.0	43.8	99	43.8	10	-	43.8	0.0	1	.70
Receiver107	107	1 0	0.0	60.4	99	60.4	10	1	60.4	0.0	7	7.0
Heceiver108	108	1 0	0.0	60.4	99	60.4	10	1	60.4	0.0	7	-7.0
Heceiver109	109	1 0	0.0	61.3	99	61.3	10	1	61.3	0.0	7	-7.0
Heceiver110	110	1	0.0	61.0	99	61.0	10	1	61.0	0.0	7	-7.0
neceiver111	111		0.0	65.0	99	65.0	10	1	65.0	0.0	7	-7.0
Receiver112	112	1	0.0	60.1	99	60.1	10	ĺ	60.1	0.0	7	-7.0
Heceiver113	113		0.0	63.3	99	63.3	10	-	63.3	0.0	7	-7.0
neceiver114	114		0.0	45.7	99	45.7	10	-	45.7	0.0	7	-7.0
December 15	115		0.0	63.6	99	63.6	10	-	63.6	0.0	7	-7.0
Deceiver 17	117	Ì	0.0	67.2	99	67.2	10	Snd Lvl	67.2	0.0		-7.0
Hecelveri 19	119	1	0.0	49.5	99	42.5	5					2.1

C:\TNM25\18402_US60 Ballard\2040 No Build

SULTS: SOUND LEVELS
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RESULTS: SOUND LEVELS						1840	7 - US 60	18407 - US 60 Ballard Co				
Receiver120	120	-	0.0	42.0	99	42	10	8	42.0	0	٢	1
Receiver121	121	-	0.0	41.1			2 6		4 4 4	0.00	1 -	1.0
Receiver122	122	-	0.0	40.8			2 5		1.14	0.0	,	-/.0
Receiver123	123	-	00	41.0			2 5		40.8	0.0	,	-7.0
Beceiver124	707		2 6	41.6			2	1	41.2	0.0	7	-7.0
	+71	-	0.0	9.14	99	41.9	9		41.9	0.0	7	-7.0
Receiver125	125	-	0.0	43.6	99	43.6	10	1	436	0	7	100
Receiver126	138	-	0.0	47.1	99	47.1	10	1	47.1	000		7.0
Dwelling Units	#	# DUS Noise	e Reduction	tion						2	`	5.
		Min	Ā	Avg	Max							
		쁑	쁑		용							
All Selected		110	0.0	0.0	0.0							
All Impacted		14	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

APPENDIX E 2040 BUILD ALTERNATIVES

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18407 - US 60 Ballard Co.

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Ok4 Inc													
Be							23 August 2019	1 2019					
Sup							TNM 2.5						_
RESULTS: SOUND LEVELS							Calculated with TNM 2.5	d with TN	M 2.5				_
PROJECT/CONTRACT:		18407	US 60 Bal	lard Co.									
RUN:		2040 B	2040 Build Alt 1										_
BARRIER DESIGN:		LINPUT	INPUT HEIGHTS					Average	Average pavement type shall be used unless	shall be used	unless		_
ATMOSPHERICS:		68 deg	68 deg F, 50% RH					a State h	a State highway agency substantiates the use of a different type with annousl of FHWA	substantiates	the use		-
Receiver													TE
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over existing	r existing	Туре	Calculated	Noise Reduction	on		1
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal	1
			dBA	dBA	dBA	dB	B		dBA	dB d	gB B	dB	
Receiver1			0.0	59.8		66 59.8	8 10	1	59.8	00		7 .70	11-
Receiver2	2	ĺ	0.0	61.2	i	66 61.2	2 10	1	61.2			7	10
Receiver3	6		1 0.0	59.8		66 59.8	8 10	1	59.8				10
Receiver4	4		0.0	54.5	1	66 54.5	5 10	1	54.5				10
Heceiver5	S			6.09		6.09 60.9	9 10	1	6.09				10
Heceivero	9		1 0.0			9.65 59.6	6 10	-	59.6				16
Heceiver/	7		0.0	Ĭ,		66 60.7	7 10	-	60.7	0.0			10
Heceivers	8					6.65 59.9	9 10	-	59.9	0.0		7 -7.0	10
Description	o !		1 0.0			66 61.4	4 10	1	61.4	0.0		7 -7.0	To
Disciplina	10					66 63.1	1 10	-	63.1	0.0		7 -7.0	10
Deceive 11	+	,_					9 10	1	64.9	0.0		7 -7.0	10
Receiver 12	12		1 0.0					-	52.1	0.0		7 -7.0	10
Booging	5						7 10	-	58.7	0.0		7 -7.0	10
Dooring 6	14			J			5 10	1	53.5	0.0		7 -7.0	10
Dooring	16		1 0.0				3 10	1	56.3	0.0		7 -7.0	To
Pooring 10	17					66 52.3	3 10	1	52.3	0.0		7 -7.0	10
Populior21	19						6 10	1	9.09	0.0		7 -7.0	To
necelverzi	21	7				66 61.4	4 10		61.4	0.0			10
Receiverzz	22					66 50.8	8 10	-	50.8	0.0			10
Bookers	23		1 0.0			9.69 63.6	01 9	-	63.6	0.0		7 -7.0	16
Receiver25	24						0 10	1	64.0	0.0			16
Receiver 27	2 2							-	47.4	0.0		7 -7.0	10
Industrial	17.		0.0	60.7		66 60.7	7 10	1	60.7	0.0		7 -7.0	10

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	SULTS: SOUND EVE

Beceiver28	oc		0	. 00	-	1840	18407 - US 60 Ballard Co.	Dallalu CO				
Octobrio de la companya de la compan	07		0.0	60.4	99	60.4	10		60.4	0.0	7	-7.0
neceiverzy	53	-	0.0	58.6	99	58.6	10	ı	58.6	0.0	7	7.0
Receiver30	30	-	0.0	57.1	99	57.1	10		+ 12	000	- 1	0.7
Receiver31	31	-	0.0	61.3	99	61.3	10		0.10	0.0	- 1	0'/-
Receiver32	32	-	0.0	63.1	99	63.1	2 5		0.10	0.0	-	0.7-
Receiver33	33		00	818	20	0.00	2 9		03.1	0.0	7	-7.0
Receiver34	34	-	000	0.00	00	0.10	2 9	1	61.8	0.0	7	-7.0
Receiver35	35		000	3000	000	200.	2	1	58.2	0.0	7	-7.0
Beceiver36	200		0.0	62.3	99	62.3	10	1	62.3	0.0	7	-7.0
Domingo	8	-	0.0	62.3	99	62.3	10	1	62.3	0.0	7	-7.0
neceiver3/	37	-	0.0	63.0	99	63.0	10	1	63.0	0.0	7	-7.0
Receiver38	38	-	0.0	62.5	99	62.5	10	1	62.5	0.0	7	7.0
Receiver39	39	-	0.0	9.09	99	9.09	10	1	80.8	000	. 1	2.0
Receiver40	40	-	0.0	54.6	99	54.6	10	1	20.00	0.0	- 1	1.0
Receiver42	42	-	0.0	57.1	99	57.1			1 2	0.00	- 1	0.7-
Receiver43	43	-	0.0	48.4	99	48.4	2 5		20.1	0.0	,	-7.0
Receiver44	4	-	0.0	45.9	9 9	45.0	2 5		4.0.4	0.0	,	-7.0
Receiver45	45	7		000	3 6	2.01	2 :		45.9	0.0	7	-7.0
Receiver47	77	+	0.0	20.0	00	53.3	10		53.3	0.0	7	-2.0
Beceiver48	÷ 5		0.0	48.0	99	48.0	10	į	48.0	0.0	7	-7.0
Description	84	-	0.0	47.8	99	47.8	10	ĺ	47.8	0.0	7	-7.0
Dooring	48	-	0.0	51.9	99	51.9	10	ı	51.9	0.0	7	-7.0
necelverou	20	-	0.0	58.2	99	58.2	10		58.2	0.0	7	-7.0
Receivers 1	51	-	0.0	66.5	99	66.5	10	Snd Lvl	66.5	0.0	7	-7.0
Heceiver52	25	-	0.0	58.6	99	58.6	10	1	58.6	0.0	7	27.0
Heceiver54	54	-	0.0	26.7	99	56.7	10	1	56.7	0.0	7	27.0
Heceiver55	92	•	0.0	56.8	99	56.8	10	-	56.8	00	7	100
Receiver56	99	-	0.0	61.5	99	61.5	10	1	61.5	00		7.0
Receiver57	22	-	0.0	57.7	99	57.7	10	1	57.7	000	- 1	1.0
Receiver58	28	-	0.0	49.0	99	49.0	10	-	49.0	0.0	1	7.0
Receiver60	09	T	0.0	60.4	99	60.4	10	1	60.4	0.0	7	7.0
Receiver61	61	-	0.0	54.7	99	54.7	10	1	54.7	000		7.0
Receiver62	29	-	0.0	54.4	99	54.4	10	1	54.4	00	1	7.0
Receiver63	63	-	0.0	55.9	99	55.9	10		55.0	000	, ,	1.0
Receiver64	64	-	0.0	59.4	99	50.4	2 5		0.00	0.0	,	0.7-
Receiver65	92	-	0.0	583	99	5 92	2 5		4.80	0.0	,	-7.0
Receiver66	99	-	00	47.6	2 9	2000	2 9		58.3	0.0	1	-7.0
Receiver67	23		0.0	0.74	00	47.0	2	l	47.6	0.0	7	-7.0
Beceiver68	000	-	0.0	49.2	99	49.2	10	1	49.2	0.0	7	-7.0
Receivered	88 8	-	0.0	49.5	99	49.5	10	1	49.5	0.0	7	-7.0
Beceiver70	8 6	- ,	0.0	51.7	99	51.7	10	***	51.7	0.0	7	-7.0
Boceiver71	2 7	-	0.0	51.9	99	51.9	10	1	51.9	0.0	7	-7.0
11000001	V	-	0.0	55.6	99	55.6	10	1	55.6	0.0	7	-7.0

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	7.7	0.0	54.7	99	24.7	10	1	54.7	0.0	7	-7.0
neceiver/3	73	1 0.0	59.4	99	59.4	10	1	50.4	00	. 1	1 2
Receiver74	74	1 0.0	63.2	99	63.2	101		000	000	, ,	0.7-
Receiver75	75	1 0.0	59.1	3 9	100	2 5		2.50	0.0	,	-7.0
Receiver77	77	-	100	3 8	1.60	2 !	1	59.1	0.0	7	-7.0
Receiver78	70	000	000.1	00	53.7	10	1	53.7	0.0	7	-7.0
Borowarzo	0/	0.0	47.6	99	47.6	10	ł	47.6	0.0	7	-7.0
Deceive 7 9	6/	1 0.0	46.3	99	46.3	10		46.3	0.0	7	-7.0
Heceiver80	80	1 0.0	47.0	99	47.0	10	-	47.0	00	7	7.0
Heceiver82	85	1 0.0	57.2	99	57.2	10	1	57.2	00		7.07
Heceiver83	83	1 0.0	58.1	99	58.1	10	1	58.1	0.0	7	7.0
Heceiver84	84	1 0.0	55.8	99	55.8	10	1	55.8	000	7	7.0
Receiver85	82	1 0.0	57.7	99	57.7	10	*****	57.7	000	1	107
Receiver86	98	1 0.0	22.0	99	57.0	101	-	67.0	0 0	, ,	0.7-
Receiver87	87	1 0.0	56.6	99	2 22	2 5		0.70	0.0	,	0.7-
Receiver88	88	1 00	8 99	2 9	0.00	2 5		0.00	0.0	/	-7.0
Receiver89	08		0.00	00	9.00	10		56.8	0.0	7	-7.0
Receiver01	0 0	0.0	50.9	99	56.9	10	-	56.9	0.0	7	-7.0
Bosolivardo	5 6	0.0	55.4	99	55.4	10	1	55.4	0.0	7	-7.0
Bootwood	26 32		56.5	99	56.5	10	}	56.5	0.0	7	-7.0
necelvelso	88	1 0.0	26.8	99	56.8	10	1	56.8	0.0	7	-7.0
CELIANIPO	32	1 0.0	26.1	99	56.1	10	1	56.1	0.0	7	-7.0
Receiversb	96	1 0.0	59.4	99	59.4	10	1	59.4	0.0	7	7.0
Heceiver98	98	1 0.0	74.0	99	74.0	1	Snd Lvl	74.0	0.0	7	-7.0
Receiver100	100	1 0.0	55.9	99	55.9	10	1	55.9	0.0	7	7.0
Receiver101	101	1 0.0	53.7	99	53.7	10	1	53.7	0.0		-70
Heceiver102	102	1 0.0	6.65	99	59.9	10	1	59.9	0.0	7	10
Receiver103	103	1 0.0	62.4	99	62.4	10	1	62.4	0.0	7	2.70
Heceiver104	104	1 0.0	57.3	99	57.3	10	1	57.3	0.0	7	27.0
Receiver105	105		54.7	99	54.7	10	ì	54.7	0.0	7	-7.0
Receiver105	106		54.8	99	54.8	10	1	54.8	0.0	7	-7.0
Heceiver107	107		56.1	99	56.1	10	1	56.1	0.0	7	-7.0
Heceiver U8	108		56.1	99	56.1	10	1	56.1	0.0	7	-7.0
Receiver109	109	1 0.0	299	99	299	10	1	56.7	0.0	7	-7.0
Receiver110	110	1 0.0	56.5	99	56.5	10	1	56.5	0.0	7	-70
Receiver111	111	1 0.0	6.65	99	59.9	10	i	59.9	0.0	7	27.0
Receiver112	112	1 0.0	58.0	99	58.0	10		58.0	0.0	7	7.0
Heceiver113	113	1 0.0	59.5	99	59.5	10	1	59.5	0.0	7	7.0
Receiver114	114	1 0.0	54.6	99	54.6	10		54.6	0.0	7	7.0
Heceiver115	115	1 0.0	58.7	99	58.7	10	1	58.7	00		2.0
Heceiver117	117	1 0.0	61.4	99	61.4	10	1	61.4	000	, ,	7.0
Heceiver119	119	1 0.0	40.2	99	40.2	101	1	40.2	000		2 0

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RESULTS: SOUND LEVELS						1840	18407 - HS 60 Ballard Co.	O baollo				
Receiver120	120	1 00	-	40.3	122	0.00	0000	aliai u co.				
Donoing				2	3	40.0	2		40.3	0.0	7	-7.0
neceiver 121	121	1 0.0	0	40.1	99	40.1	10		40.1	00	1	10
Receiver122	122	1 0.0	0	38.9	99	38.9	10		0.00	0.0	- 1	0.7-
Receiver123	123	1	0.0	39.3	99	30.3	2 5		0.00	0.0	,	0.7-
Receiver124	124	1		0.00	2 0	0.00	2 9		39.3	0.0	1	-7.0
To the state of the		5	0	03.0	00	39.8	10	1	39.8	0.0	7	-7.0
Heceiver125	125	1 0.0	0	40.8	99	40.8	10	1	408	00	1	1
Receiver126	126	1 0.0	0	43.2	99	43.0	2 5		0.04	0.0	,	0./-
				1	3	70.0	2		43.2	0.0	7	-7.0
Dwelling Units	na #	# DUS Noise Re	Reduction									
		Min	Avg	M	Max							
		Q	留	号	m							
All Selected	+	110 0.0	0	0.0	0.0							
All Impacted	1	2 0.0	0	0.0	0.0							
All that meet NR Goal		0.0	0	0.0	0.0							-

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18407 - US 60 Ballard Co.

Qk4, Inc.								23 August 2019	2019				
JRS								TNM 2.5					
RESULTS: SOUND LEVELS								Calculated with TNM 2.5	with TNN	A 2.5			
PROJECT/CONTRACT: RUN: BARRIER DESIGN:		1840	18407 - US 60 Ballard Co. 2040 Build Alt 2	llard Co.									
ATMOSPHERICS:		189 de 89	INPUT REIGHTS	, a					Average a State hi	Average pavement type shall be used unless a State highway agency substantiates the use	e shall be us y substantia	ed unless tes the us	. 9
Receiver									от а спте	or a different type with approval of FHWA.	approval of	FHWA.	
Name	No.	#DUs	Existing	No Barrier						With Barrier	la.		
			LAeq1h	LAeq1h Calculated	Crit'n	Cal	Increase over existing	existing Crit'n	Type Impact	Calculated LAeq1h	Noise Reduction Calculated Goa	Goal	Calculated
								Sub'l Inc					minus Goal
			dBA	dBA	dBA	명		B		dBA	dB	용	g _B
Heceiver1		1	1 0.	0.0 64.3	3	99	64.3	10	1	64.3	3 0.0	0	7 -7.0
Heceiver2		2	1 0.	0.0	-	99	66.1	10	Snd Lvl			0	
Receivers		m	1		6	99	67.9	10	Snd Lvi	62.9	0.0	0	
neceiver4		4	1 0.		21	99	60.5	10	1	60.5	0.0	0	7 -7.0
Heceivers		20	1 0.		2	99	65.6	10	-	65.6	ĺ	0	
Receiver		9 1			2	99	64.5	10	1	64.5	0.0	0	7 -7.0
Boomers		, 0			0	99	65.3		1	65.3	3 0.0	0	7 -7.0
Receiverd		0 0			1	99	64.7			64.7	0.0	0	7 -7.0
Beceiver10		D C			4	99	72.4		200		1 0.0	0	7 -7.0
Receiver11	2 2) r	· ·		20 /	99	67.3		~	67.3		0	7 -7.0
Receiver12		12		0.0	0.0	99	68.6		Sud Lvi	68.6		0	
Receiver13	-	13			4 6	99	5.86	0 0	Cod lad	59.2		0	7 -7.0
Receiver14	14	4				99	58.9			6.79		0	
Receiver16	-	16	1 0.		1	99	61.7		1	51.7	0.0	0 0	7 7.0
Receiver17	17	7	1 0.	0.0 59.2	OI.	99	59.2		1	59.2		0 0	
Receiver19	+	19	1 0.	0.0 71.1	-	99	71.1		Snd Lvl	71.1		0	
Receiver21	21	-	1 0.	0.0 74.1	-	99	74.1	10	100			0	
Heceiver22	22	2	1 0.	0.0 55.7	1	99	55.7	10				0	
neceiverz3	C)	53			_	99	65.1	10	*****	65.1		0	
Boomon	24	4			6	99	64.9	10	Ì	64.9	0.0	0	
Percinary 7	25	2	1 0.0		6	99	41.9	10	I	41.9		0	
/ZJANIACE/	27	2	1 0.0	0 63.4	**	99	63.4	10		62.4	0		

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00					2	200	1040/ - US OU Dallard CO.				
Heceiver28	28	1 0.0	63.6	99	63.6	10	1	63.6	0.0	7	-7.0
Heceiver29	59	1 0.0	66.4	99	66.4	10	Snd Lvl	66.4	00	7	7.0
Receiver30	30	1 0.0	62.0	99	62.0	10	1	62.0	0.0	. 1	7.0
Receiver31	33	1 0.0	64.7	99	64.7			0.5.0	0.0	1	0.7-
Receiver32	32	1 00	75.4	2 2	75.4	2 9		1.50	0.0	7	-7.0
Receiver33	33	1	100	00 00	10.4	2 5	Sud LVI	75.4	0.0	7	-7.0
Beceiver34	3 70		03.1	00	L.89	10	Sud LvI	69.1	0.0	7	-7.0
Booming	40		60.8	99	8.09	10		8.09	0.0	7	-7.0
necelvel 55	32		63.7	99	63.7	10	1	63.7	0.0	7	-7.0
Hecelver30	36	1 0.0	63.5	99	63.5	10	1	63.5	0.0	7	-70
Heceiver37	37	1 0.0	63.3	99	63.3	10	I	63.3	00		2.7
Receiver38	38	1 0.0	62.4	99	62.4	10	ı	A C 9	0.0		1.0
Receiver39	39	1 0.0	62.8	99	62.8	10	,	000	000	1	0.7-
Receiver40	40	1 0.0	56.4	99	56.4	101	1	56.4	0.0	- 1	0.7-
Receiver42	42	1 0.0	48.2	99	48.2	2		40.4	0.0	,	0.7-
Receiver43	43	1 00	47.6	88	47.6	2 0		40.2	0.0	1	-7.0
Receiver44	44		45.4	9 9	0.74	2 5		47.6	0.0	7	-7.0
Receiver45	45		7 :	8 8	45.1	01	1	45.1	0.0	7	-7.0
Beceiver47	2 5		44.1	90	44.7	10	1	44.7	0.0	7	-7.0
Becaiver48	14		43.3	99	43.3	9	I	43.3	0.0	7	-7.0
Bootings	48		43.3	99	43.3	10	i	43.3	0.0	7	-7.0
receively9	49	1 0.0	42.4	99	42.4	10	1	42.4	0.0	7	-7.0
heceiversu	20	0.0	41.8	99	41.8	10	**	41.8	0.0	7	.70
Receiver51	51	1 0.0	41.1	99	41.1	10	1	41.1	0.0	1	.70
Heceiver52	52	1 0.0	40.7	99	40.7	10	1	40.7	00	7	1.
Receiver54	54	1 0,0	73.2	99	73.2	10	Snd Lvl	73.2	0.0		7.0
Receiver55	55	1 0.0	72.8	99	72.8	10	Snd Lvl	72.8	000	- 1	7.0
Receiver56	26	1 0.0	66.1	99	66.1	10	Snd Lvl	66.1	0.0	- 1	7.0
Receiver57	25	1 0.0	61.7	99	61.7	10	1	61.7	000	- 1	7.0
Receiver58	28	1 0.0	57.9	99	62.9	10	1	57.9	000	1	7.0
Receiver60	09	1 0.0	2.79	99	67.7	10	Snd Lvl	67.7	0.0	1	7.0
Receiver61	61	1 0.0	9.09	99	9.09	10	1	60.6	000	1	7.0
Receiver62	62	1 0.0	60.7	.99	60.7	10	1	60.7	000	, ,	7.0
Receiver63	63	1 0.0	62.5	99	62.5	10	1	62.5	000		7.0
Receiver64	64	1 0.0	68.5	99	68.5	10	Snd Lvl	68.5	00		7.0
Heceiver65	92	1 0.0	9.79	99	9.29	10	Snd Lvl	67.6	00	1	7.0
Receiver66	99	1 0.0	44.4	99	44.4	10	-	44.4	000	7	7.07
Receiver67	29	1 0.0	43.9	99	43.9	10		43.9	0.0		7.0
Hecelver68	89	1 0.0	43.6	99	43.6	10	l	43.6	0.0	7	.70
necelveroy	69	1 0.0	43.1	99	43.1	10		43.1	00		7.0
Heceiver/0	02	1 0.0	42.8	99	42.8	10	1	42.8	0.0	1	7.0
Heceiver71	71	1 0.0	40.7	99	40.7	10	1	40.7	0.0		7.0

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7100000	72	-	0.0	42.5	88	10 E	CF		ī	-		
Receiver73	73	-	00	7007	3 8	0.24	2 5		42.5	0.0	7	-7.0
Beceiver74	2 5		000	42.0	00	42.0	10	1	45.0	0.0	7	-7.0
Doorgoogle	14		0.0	41.7	99	41.7	10	1	41.7	0.0	7	-7.0
neceive//o	75	-	0.0	40.9	99	40.9	10	1	40.9	0.0	7	.7.0
Heceiver//	77	-	0.0	40.4	99	40.4	10		40.4	00		2 6
Receiver78	78	-	0.0	39.6	99	39.6	10	1	30.6	000	, ,	7.0
Receiver79	62	-	0.0	39.4	99	39.4	101		20.00	000	- 1	0.7-
Receiver80	80	-	0.0	39.5	99	39.5	101	ı	30.5	0.0	, ,	1.0
Receiver82	82	-	0.0	67.1	99	67.1	2 0	Sndlvl	02.0	000	- 1	0.7-
Receiver83	83	-	0.0	68.5	99	58	2 0	Sadia	59 5	0.0	, 1	-7.0
Receiver84	84	-	0.0	65.5	99	200	2 5	OIIO LVI	0.80	0.0	,	-7.0
Receiver85	85	-	00	68.4	2 9	2000	2 9	2.5-6	65.5	0.0	7	-7.0
Receiver86	86	-	0.0	67.4	9 9	4.00	2 5	Sud LVI	68.4	0.0	7	-7.0
Receiver87	87		2 0	4.70	00	4.70	2	Sud Lvi	67.4	0.0	7	-7.0
Receiver88	6	,	200	00.0	90	66.3	10	Sud LvI	66.3	0.0	7	-7.0
Boolivor80	00 00	-	0.0	8.99	99	8.99	10	Snd LvI	8.99	0.0	7	-7.0
Doming 04	88		0.0	8.99	99	8.99	10	Snd Lvl	8.99	0.0	7	-7.0
Tecelvel 3	16	-	0.0	62.0	99	62.0	10	1	62.0	0.0	7	-7.0
neceiver92	92	-	0.0	63.0	99	63.0	10	-	63.0	0.0	7	-7.0
Receivers3	93	-	0.0	63.0	99	63.0	10	1	63.0	0.0	7	27.0
Receiver95	96	-	0.0	63.3	99	63.3	10	1	63.3	0.0	7	-7.0
Heceiver96	96	-	0.0	67.3	99	67.3	10	Snd Lvl	67.3	00	7	7.0
Receiver98	86	-	0.0	45.0	99	45.0	10	1	45.0	000		7.0
Receiver100	100	Ţ	0.0	60.2	99	60.2	10	1	602	000	1	7.0
Receiver101	101	,	0.0	56.2	99	56.2	10	1	56.2	0.0	, ,	0.7
Receiver102	102	-	0.0	49.3	99	49.3	101		40.3	0.00	, ,	0.7
Receiver103	103	-	0.0	45.6	99	45.6	10		45.6	000	, ,	7.0
Receiver104	104	-	0.0	44.7	99	44.7	101		44.7	0.00	- 1	1.0
Receiver105	105	1	0.0	43.9	99	43.9	101	1	43.0	0.0	, ,	7.0
Receiver106	106	-	0.0	44.1	99	44.1	10		44.1	0.00	1	7.0
Receiver107	107	-	0.0	60.4	99	60.4	10	-	60.4	000	7	7.0
Receiver108	108	Ŧ	0.0	60.4	99	60.4	10	-	60.4	00	7	7.0
Heceiver109	109	-	0.0	6.09	99	6.09	10	-	60.9	00	1	1 0
Receiver110	110	1	0.0	60.5	99	60.5	10	1	60.5	0.0	7	7.0
Heceiver111	111	-	0.0	65.1	99	65.1	10	-	65.1	00	7	7.0
Receiver112	112	-	0.0	58.7	99	58.7	10	1	58.7	000	-	1.0
Receiver113	120	-	0.0	55.0	99	55.0	10	1	55.0	000	7	7.0
Heceiver114	121	-	0.0	45.9	99	42.9	10	1	42.9	0.0	7	7.0
Heceiver115	122	-	0.0	45.6	99	45.6	10	1	45.6	0.0	7	7.0
neceiver117	123	-	0.0	37.4	99	37.4	10	1	37.4	0.0	7	.70
Receivering	101	7										2

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RESULTS: SOUND LEVELS					184	02 - US 60	18407 - US 60 Ballard Co.				
Receiver120	125 1	0.0	43.4	4 66	43	40		V 6V	C	٢	1
Receiver121	126	0				2 !		1.01	0.0	,	-/.0
	2	5.5	42.3	00	42.3	01	1	45.3	0.0	7	-7.0
Heceiver122	1 1	0.0	41.0	99 0	41.0	10		410	00		100
Receiver123	1	0.0	41.3	3		2	1	21.0	0.0	1	0.7-
Receiver124	1	00				2 5		0.14	0.0	,	-/.0
Docomorto		3				OI.		42.1	0.0	7	-7.0
130	20	0.0	44.1	1 66	44.1	10	-	44.1	00	7	10
Receiver126 131	1	0.0	47.8	8 66		10		47.8	0.0	, 1	7.0
Durollian Haite						2		0.11	0.0	,	0.7-
Dwelling Units	# DNs	# DUS Noise Re	Reduction								
		Min	Avg	Max							
		쁑	ф	쁑							
All Selected	110	0.0	0.0	0.0							
All Impacted	25	0.0									
All that meet NR Goal	0	0.0	0.0	0.0							

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Qk4, inc.															
IBS															
/Y									27 August 2019	st 2019					
2									TNM 2.5						
									Calculate	Calculated with TNM 2.5	M 2.5				
RESULTS: SOUND LEVELS															
PROJECT/CONTRACT:		18407	18407 - US 60 Ballard Co.	allard (0										
RUN:		2040 B	2040 Build Alt 3												
BARRIER DESIGN:		INPUT	INPUT HEIGHTS	S						Average	Average pavement type shall be used unless	oe shall be u	sed unless		
ATMOSPHERICS:		68 deg	68 deg F, 50% F	표						a State i	a State highway agency substantiates the use	cy substanti	ates the us	ø	
Receiver										5	of a sincicul type with approval of FRWA.	n approvar o	L LUWA.		
Name	No.	#DUs	Existing		No Barrier						With Barrier	_			
			LAeq1h	LAeq1h	q1h		lnc	Increase over existing	r existing	Type	Calculated	Noise Reduction	uction		
				Calc	Calculated	Crit'n	S	Calculated	Crit'n Sub'l Inc	A.1	LAeq1h		I Goal	Calculated	ated
			ΔBΔ	ď		VOP	2		Ç		į			Goal	
Receiver1	-			00	2.53	5	3	000	9		dBA	gg	8	8	
Receiver2	0	1		000	0.00		3 8	00.		0 5	63.5		0.0	7	-7.0
Receiver3	1 0			0.0	000		8 8	6730			62.9		0.0	7	-7.0
Boroword	9 .			0.0	90.0		90	9.09		0	9.09		0.0	7	-7.0
Dogwood	4			0.0	54.4		99	54.4		10	54.4		0.0	7	-7.0
neceivers	2		3	0.0	61.9		99	61.9	ĺ	10	61.9		0.0	7	-7.0
Hecelverb	9	-	Ī,	0.0	9.09		99	9.09	+	10	9.09		0.0	7	-7.0
Hecelver/	7	-		0.0	61.2		99	61.2	Ĺ	10	61.2	To the	0.0	7	-7.0
Hecelver8	8	-		0.0	60.4		99	60.4		10	60.4	1	0.0	7	-7.0
Receivery	6	-	1	0.0	61.5		99	61.5		10	61.5		0.0	7	-7.0
Receiver10	10	ī	1	0.0	63.3		99	63.3		10	63.3		0.0	7	-7.0
Receiver11	11	-		0.0	65.0		99	65.0		10	65.0		0.0	7	-7.0
Heceiver12	12	-	l,	0.0	52.3		99	52.3		10	52.3		0.0	7	-7.0
Heceiver13	13		3	0.0	58.8		99	58.8		10	58.8		0.0	7	-7.0
Heceiver14	14	E .		0.0	53.8		99	53.8		10	53.8	ľ	0.0	7	-7.0
Heceiver16	16	1		0.0	56.3		99	56.3		10	56.3		0.0	7	-7.0
Receiver17	17	5		0.0	52.3		99	52.3		10	52.3		0.0		.70
Receiver19	19			0.0	9.09		99	9.09		10	60.6		0.0	7	7.0
Receiver21	21	7		0.0	63.9		99	63.9		10	63.9		0.0		1.0
Receiver22	22	0		0.0	49.5		99	49.5		10	49.5		00	7	7.0
Receiver23	23			0.0	63.6		99	63.6		10	63.6		0.0	7	7.0
Receiver24	24			0.0	64.0		99	64.0		10	64.0		00	7	7.0
Heceiver25	22	F		0.0	38.7		99	38.7		10	38.7		0.0	7	7.0
Heceiver27	27	-		0.0	60.5		99	60.5		10	60.5		0.0	7	7.0

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neceiverza	28	1 0.0	60.2	99	60.2	10	Į	60.2	0.0	1	-7.0
Receiver29	53	1 0.0	58.3	99	58.3	10		583	00	1	7.0
Receiver30	30	1 0.0	56.1	99	56.1	10]	1 99	0.0	1	1.0
Receiver31	31	1 0.0	60.5	99	60.5	10	Į	50.5	0.0	7	0.7-
Receiver32	32	1 0.0	62.5	99	62.5	10		200	0.0	. 1	0.7-
Receiver33	33	1 0.0	59.9	99	59 9	2 0		0000	0.0	,	0.7-
Receiver34	34	1 0.0	56.1	99	56.1	2 0		5.53	0.0	, ,	0.7-
Receiver35	35	1 0.0	9.09	99	909	0,0		50.6	200	, ,	1.0
Receiver36	36	1 0.0	60.2	99	60.2	10		0.00	0.0	,	7.0
Receiver37	37	1 0.0	60.2	99	60.2	10	1	500	0.0	, ,	7.0
Receiver38	38	1 0.0	58.9	99	58.9	10	1	58.9	0.0	7	7.0
Receiver39	39	1 0.0	58.5	99	58.5	10	ı	585	0.0		7.0
Receiver40	40	1 0.0	48.1	99	48.1	10	1	48.1	0.0	7	7.0
Receiver42	42	1 0.0	43.0	99	43.0	10	-	43.0	000		2.7
Receiver43	43	1 0.0	42.6	99	42.6	10	ļ	42.6	0.0	7	7.0
Receiver44	44	1 0.0	40.9	99	40.9	10	1	40.9	0.0	7	.70
Receiver45	45	1 0.0	40.6	99	40.6	10	Į	40.6	0.0	7	-70
Receiver47	47	1 0.0	45.4	99	42.4	10	1	42.4	0.0	1	-7.0
Receiver48	48	1 0.0	42.4	99	42.4	10		42.4	0.0	7	7.0
Receiver49	49	1 0.0	41.8	99	41.8	10	ļ	41.8	0.0	7	-7.0
Receiver50	20	1 0.0	41.0	99	41.0	10	1	41.0	0.0	7	-70
Receiver51	51	1 0.0	40.1	99	40.1	10	i	40.1	00	7	-70
Receiver52	25	1 0.0	39.8	99	39.8	10	Į	39.8	0.0		-70
Receiver54	54	1 0.0	63.4	99	63.4	10	I	63.4	0.0	1	-7.0
Receiver55	55	1 0.0	64.0	99	64.0	10	1	64.0	0.0	7	.70
Receiver56	26	1 0.0	9.79	99	67.6	10	Snd Lvl	67.6	0.0	7	27.0
Receiver57	25	1 0.0	62.8	99	62.8	10	1	62.8	0.0	7	-7.0
Receiver58	28	1 0.0	55.1	99	55.1	10	ı	55.1	0.0	. 1	-7.0
Receiver60	09	1 0.0	9.79	99	9.79	10	Snd LvI	9.29	0.0	7	-7.0
Heceiver61	61	1 0.0	9.09	99	9.09	10	1	9.09	0.0	7	-7.0
Heceiver62	62	1 0.0	9.09	99	9.09	10	1	9.09	0.0	7	-7.0
Heceiver63	63	1 0.0	62.5	99	62.5	10	ļ	62.5	0.0	7	-7.0
Heceiver64	64	1 0.0	68.5	99	68.5	10	Snd Lvl	68.5	0.0	7	-7.0
Heceiver65	65	1 0.0	9.79	99	9.79	10	Snd Lvl	97.9	0.0	7	-7.0
Heceiverob	99	1 0.0	44.1	99	44.1	10	J	44.1	0.0	7	-7.0
Heceiver67	29	1 0.0	43.6	99	43.6	10	1	43.6	0.0	7	-7.0
Heceiver68	89		43.3	99	43.3	10	ı	43.3	0.0	7	-7.0
Heceiverey	69		42.8	99	42.8	10		42.8	0.0	7	-7.0
Describer 0	0.2		45.5	99	42.5	10	1	42.5	0.0	7	-7.0
Receiver	71	1 0.0	39.9	99	39.9	10	I	39.9	0.0	7	-7.0

Heceiver72	CL L	+	00	COV	00	007						
Receiver73	1 1		0.0	46.2	99	42.2	10	1	42.2	0.0	7	-7.0
Description of the second of t	2		0.0	41.6	99	41.6	10	-	41.6	0.0	7	-7.0
neceiver/4	74	-	0.0	41.3	99	41.3	10	1	41.3	00	7	10
Receiver75	75	-	0.0	40.4	99	40.4	10	1	40.4	000		7.0
Receiver77	77	-	0.0	39.8	99	39.8	101	-	30.0	0 0		0.7-
Receiver78	78	+	0.0	38.9	99	38.9	101		0.00	0.00	, 1	0.7-
Receiver79	62	+	0.0	38.7	99	38.7	101		38.7	0.00	- 1	1.0
Receiver80	80	-	0.0	38.9	99	38.9	10		0000	0.00	- 1	0.7-
Receiver82	82	-	0.0	67.1	99	67.1	10	Spot	57.1	0.0	,	0.7-
Receiver83	83	-	0.0	68.5	99	288	2 5	Spd Lvd	1.70	0.0	,	0.7-
Receiver84	84		0.0	65.5	99	200	2 5	Sild LVI	08.5	0.0	,	-7.0
Receiver85	85		0.0	200	000	0.00	2	1 :	65.5	0.0	7	-7.0
Receiver86	9 8	•	2 0	00.4	00	68.4	01	Sud LVI	68.4	0.0	7	-7.0
Receiver87	0 0		0.0	4.70	90	67.4	10	Sud Lvi	67.4	0.0	7	-7.0
Borowers	70		0.0	66.3	99	66.3	10	Snd LvI	66.3	0.0	7	-7.0
Doming of	88		0.0	8.99	99	8.99	10	Snd Lvi	86.8	0.0	7	-7.0
neceiverage	68	-	0.0	8.99	99	8.99	10	Snd Lvi	8.99	0.0	7	-7.0
Heceiver91	10	-	0.0	62.1	99	62.1	10	1	62.1	0.0	7	-7.0
Heceiver92	92	-	0.0	63.0	99	63.0	10	1	63.0	0.0	7	270
Heceiver93	93	1	0.0	63.0	99	63.0	10	1	63.0	00		7.0
Receiver95	98	-	0.0	63.3	99	63.3	10	1	63.3	000		7.07
Receiver96	96	1	0.0	67.2	99	67.2	10	Snd Lvl	67.9	000		2.0
Receiver98	86	1	0.0	44.8	99	44.8	10	1	44.8	000	. 1	7.0
Receiver100	100	+	0.0	60.2	99	60.2	10	1	60.2	000	,	7.0
Receiver101	101	1	0.0	56.2	99	56.2	10	1	56.2	000	- 1	7.0
Receiver102	102	+	0.0	49.3	99	49.3	10	1	49.3	000	. 1	7.0
Receiver103	103	+	0.0	45.5	99	45.5	10	1	45.5	0.0	. 1	7.0
Receiver104	104	+	0.0	44.6	99	44.6	10	1	344	0.0	1	1.0
Receiver105	105	-	0.0	43.9	99	43.9	10		42.0	0.0	- 1	0.7-
Receiver106	106	+	0.0	44.0	99	44.0	10	ı	44.0	000	, 1	7.0
Receiver107	107	-	0.0	60.4	99	60.4	10	1	60.4	0.0	, ,	7.0
Receiver108	108	+	0.0	60.4	99	60.4	10	-	60.4	00	1	7.0
Receiver109	109	-	0.0	6.09	99	6.09	10	-	609	00	1	2.7
Receiver110	110	F	0.0	60.5	99	60.5	10	-	60.5	000		2.0
Heceiver111	#	-	0.0	65.1	99	65.1	10	-	65.1	0.0		2. 7.
Heceiver112	112	-	0.0	58.8	99	58.8	10		58.8	00		2. 0.
Heceiver114	114	F	0.0	42.9	99	42.9	10		42.9	00		7.0
Heceiver120	120	1	0.0	71.4	99	71.4	9	Snd Lvl	71.4	00	7	7 .
Heceiver121	121	1	0.0	59.2	99	59.2	10	-	59.5	00	1	1.0
Heceiver122	122		0.0	51.5	99	51.5	10	1	51.5	0.0	7	7.0
Heceiver123	100	+	000							200	7.	2.

its NR Goal											
125	Heceiver124	124	-		59.1	99	59.1	10	1	59 1	
# DUS Noise Reduction # DUS 1	Receiver125	125	-	j	723	99	79.3	ç	lo loog	2002	
# DUs Noise Reduction # DUs Noise Reduction Max Max	Receiver126	126	-		54.1	99	27.7	2 0	OIIO LVI	12.3	
Min Avg Max Avg Max Avg Max Avg Avg	Dwelling Units	# DC	Is Noise	e Reduction				5			111
dB dB dB dB dB dB dB dB			Min	Avg	-	Aax					
106 0.0 0.0 14 0.0 0.0 0 0.0 0.0			ВB	99	3	IB					
14 0.0 0.0	All Selected		90	0.0	0.0	00					
0.0 0.0	All Impacted		14	0.0	0.0	0.0					
	All that meet NR Goal		0	0.0	0.0	00					

-7.0 -7.0

777

0.0