

# Brent Spence Bridge Replacement/Rehabilitation Project



## Noise Study: Ohio

ODOT PID No. 75119  
HAM-71/75-0.00/0.22

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**PARSONS  
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## 1.0 INTRODUCTION

This Noise Study Technical Report: Ohio has been prepared in support of the Brent Spence Bridge Replacement/Rehabilitation Project. The objective of this report is to assess and document the potential of the project to cause or increase annoyance from traffic noise at adjacent residential communities. The noise study consists of the following primary elements:

- existing peak hour noise measurements were collected at exterior areas of representative properties,
- future (2035) peak hour noise levels without the project were estimated,
- future (2035) peak hour noise levels with the proposed Build Alternatives were estimated,
- properties that will experience noise levels above the Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC) impact threshold were identified, and
- determine if feasible and reasonable noise abatement can be provided at impacted properties in accordance with the amended Ohio Department of Transportation's (ODOT) traffic noise policy guidelines (effective July 13, 2011).

### 1.1 Project Description

The Interstate 75 (I-75) Corridor within the Greater Cincinnati/Northern Kentucky region is a major thoroughfare for local and regional mobility. Locally, it connects to I-71, I-74, and US Route 50. The Brent Spence Bridge provides an interstate connection over the Ohio River and carries both I-71 and I-75 traffic (Exhibit 1). The bridge also facilitates local travel by providing access to downtown Cincinnati, Ohio and Covington, Kentucky. Safety, congestion and geometric problems exist on the structure and its approaches. The Brent Spence Bridge, which opened to traffic in 1963, was designed to carry 80,000 vehicles per day. Currently, approximately 160,000 vehicles per day use the Brent Spence Bridge, and traffic volumes are projected to increase to approximately 233,000 vehicles per day in 2035 for the No Build Alternative.

The I-75 corridor within the Greater Cincinnati/Northern Kentucky region is experiencing problems, which threaten the overall efficiency and flexibility of this vital trade corridor. Areas of concern include, but are not limited to, growing demand and congestion, land use pressures, environmental concerns, adequate safety margins, and maintaining linkage in key mobility, trade, and national defense highways.

The I-75 corridor has been the subject of numerous planning and engineering studies over the years and is a strategic link in the region's and the nation's highway network. As such, the Kentucky Transportation Cabinet (KYTC) and ODOT, in cooperation with the FHWA, are proposing to improve the operational characteristics of I-75 and the Brent Spence Bridge in the Greater Cincinnati/Northern Kentucky region through a major transportation project.

### 1.2 Purpose and Need

The Brent Spence Bridge Replacement/Rehabilitation Project is intended to improve the operational characteristics within the I-71/I-75 corridor for both local and through traffic. In the Greater Cincinnati/Northern Kentucky region, the I-71/I-75 corridor suffers from congestion and safety-related issues as a result of inadequate capacity to accommodate current traffic demand. The purpose of this project is to:

- improve traffic flow and level of service,
- improve safety,
- correct geometric deficiencies, and
- maintain connection's to key regional and national transportation corridors.

### **1.3 Study Corridor**

The overall project corridor is located along a 7.8-mile segment of I-75 within the Commonwealth of Kentucky (state line mile 186.7) and the State of Ohio (state line mile 2.7). The southern limit of the project is 5,000 feet south of the midpoint of the Dixie Highway Interchange on I-71/I-75 in Fort Wright, south of Covington, Kentucky. The northern limit of the project is 1,500 feet north of the midpoint of the Western Hills Viaduct Interchange on I-75 in Cincinnati, Ohio. The eastern and western limits of the study area generally follow the existing alignment of I-75. A depiction of the study area is provided in Exhibit 1.

### **1.4 Feasible Alternatives**

The Brent Spence Bridge Rehabilitation/Reconstruction Project is currently in Steps 6 and 7 of ODOT's Project Development Process (PDP). Two feasible alternatives and the No Build Alternative are being developed and studied in more detail. The two alternatives selected for Step 6 and 7 are Alternative E and Alternative I, which is a combination of conceptual Alternatives C and D from Step 5 of the PDP.

#### **1.4.1 Alternative E**

In Ohio, Alternative E reconfigures I-75 through the I-71/I-75/US 50 Interchange and eliminates some of the existing access points along I-75. Existing ramps to I-71, US 50 and downtown Cincinnati will be reconfigured. The existing direct connections between I-75 to westbound and from eastbound US 50 will be maintained in Alternative E. US 50 will be reconfigured to eliminate left-hand entrances and exits. The OH 5<sup>th</sup> Street overpass will be eliminated and the OH 6<sup>th</sup> Street Expressway will be reconfigured as a two-way, six-lane elevated roadway with a new signalized intersection for US 50 access and egress. Access between southbound I-71 (Fort Washington Way) and northbound I-75 will be provided near OH 9<sup>th</sup> Street as a direct connection. Both I-75 southbound and US 50 (OH 6<sup>th</sup> Street Expressway) will have access to northbound I-71 (Fort Washington Way).

A local collector-distributor (C-D) roadway will carry local traffic northbound from the existing Brent Spence Bridge and provide access to OH 2<sup>nd</sup>, 5<sup>th</sup>, and 9<sup>th</sup> streets, Winchell Avenue and access from OH 4<sup>th</sup> before reconnecting to I-75 just south of the Linn Street overpass. The northbound ramps from OH 6<sup>th</sup> and 9<sup>th</sup> streets to I-75 will be removed requiring traffic from these points to utilize a new local roadway parallel to I-75 and access the interstate at Bank Street. Southbound I-75 traffic will separate from the local C-D roadway near Ezzard Charles Drive. The southbound C-D roadway will carry traffic over I-75 to OH 7<sup>th</sup> Street, allowing traffic to either; access downtown at 7<sup>th</sup> Street, travel south to OH 5<sup>th</sup> and 2<sup>nd</sup> streets, or travel across the existing Brent Spence Bridge into Covington. Access to the local southbound C-D roadway will be provided at Western Avenue and at OH 4<sup>th</sup> and 8<sup>th</sup> streets.

Alternative E also improves Western and Winchell Avenues to facilitate traffic flow and increase capacity. The ramps to Western Avenue and from Winchell Avenue just north of Ezzard Charles Drive will be removed. The ramp from Freeman Avenue to I-75 northbound and the ramp from I-

75 southbound to Freeman Avenue will remain. Between Ezzard Charles Drive and the Western Hills Viaduct, southbound I-75 will have six lanes and northbound I-75 will have five lanes. The Western Hills Viaduct Interchange will be reconfigured to provide a full movement interchange. The improved interchange will be a single point urban interchange (SPUI) design.

#### **1.4.2 Alternative I**

In Ohio, a local C-D roadway will be constructed along both sides of I-75. The local northbound C-D roadway will carry local traffic from the existing bridge and provide access ramps to OH 2<sup>nd</sup> Street, I-71 northbound, US 50 westbound, OH 5<sup>th</sup> Street, and Winchell Avenue before reconnecting to I-75 just south of Ezzard Charles Drive. The northbound ramps from OH 4<sup>th</sup> Street will utilize the new local northbound C-D roadway for access to I-75. The northbound ramps from OH 6<sup>th</sup> and 9<sup>th</sup> streets to I-75 will be removed requiring traffic from these two points to utilize a new local roadway parallel to I-75 connecting to Winchell Avenue and access the interstate at Bank Street. The southbound C-D roadway begins near the Ezzard Charles Drive overpass and carries both downtown Covington and Cincinnati traffic. The southbound C-D roadway will provide access to OH 7<sup>th</sup>, 5<sup>th</sup> and 2<sup>nd</sup> streets, as well as connecting to access ramps from Western Avenue, OH 9<sup>th</sup> Street, and US 50 eastbound. The C-D roadway will continue south over the new bridge into Covington.

Between Ezzard Charles Drive and the Western Hills Viaduct, northbound I-75 will have five lanes and southbound I-75 will have six lanes, for a total of 11 travel lanes. The ramps to Western Avenue and from Winchell Avenue just north of Ezzard Charles Drive to the Interstate will be eliminated. The southbound ramp to Freeman Avenue and the northbound ramp from Freeman Avenue to I-75 will remain. Alternative I also improves Western and Winchell Avenues to facilitate traffic flow and increase capacity. Ramps to Western Avenue and from Winchell Avenue will be provided around the Western Hills Viaduct Interchange, which will be reconfigured to be a tight urban diamond design.

#### **1.5 No Build Alternative**

The No Build Alternative consists of minor, short-term safety and maintenance improvements to the Brent Spence Bridge and I-75 corridor, which would maintain continuing operations all within existing right-of-way.

The No Build Alternative does not meet the purpose and need for this project; however, the alternative is retained as a baseline alternative to compare with the feasible Build Alternatives.

## 2.0 NOISE

Noise is unwanted sound that causes annoyance to listeners. On a physical molecular level, sound is the vibration of air molecules that propagate as waves through the air, which results in the stimulation of the nerve endings in the human ear creating the sensation of hearing. Sounds occur in the human and natural environment at all times. Some sounds are necessary or desirable for communication or pleasure, while other sounds are unwanted causing disturbance to the people living or working nearby. Noise varies from place to place and also in intensity as the cycle of human activity changes over the course of the day. For reference and orientation to the decibel scale, representative noise sources and their respective decibel levels are shown in Exhibit 2.

### 2.1 The A-Weighted Noise Level

While a variety of methods can be used to describe and quantify noise conditions, sound levels in decibels (dB) are presented in this report. Decibels are a unit of measure on a logarithmic scale used to quantify the amount of sound pressure at a given location from the general outdoor environment or specific sources. The most commonly used measure of noise level is the A-weighted sound level (dB(A)). From many experiments with human listeners, scientists have found that unlike animals the human ear is more sensitive to midrange frequencies than it is to either low or very high frequencies. At the same sound level, midrange frequencies are therefore heard as louder than low or very high frequencies. These physical characteristics of the human ear are taken into account by adjusting or weighting the octave band spectrum of the measured or predicted sound for the sensitivity of human hearing range. The A-weighted sound scale is a measure of sound that corresponds well to human subjective response to noise. The A-weighted sound level is widely accepted by the Federal Highway Administration (FHWA) and Ohio Department of Transportation (ODOT) as the preferred sound weighting method for assessing human exposure from traffic noise.

An understanding of the following relationships is helpful in providing a subjective impression of the human response to changes in the A-weighted sound level:

- an increase of only one dB(A) cannot be perceived,
- a three dB(A) increase is considered just at the threshold of a noticeable difference,
- a five dB(A) increase is considered readily perceived change in noise level, and
- a 10 dB(A) increase is subjectively heard as approximately a doubling (or halving) in loudness, independent of the existing noise level.

### 2.2 Traffic Noise Descriptors

Because environmental noise fluctuations vary from moment to moment, it is common practice to condense all of the information into a single number called the “equivalent” sound level. Traffic noise levels are often expressed in terms of an hourly equivalent noise level or  $L_{eq}$  [1-hr] dB(A). The  $L_{eq}$  is a measure of the average sound energy during a specified period of time (typically one-hour duration) and is defined as the steady-state sound level that typically in a one-hour period contains the logarithmic sum of the acoustic energy generated by the time-varying sound during that hour. Studies have shown that the  $L_{eq}$  (1-hr) descriptor correlates well with human response and annoyance to changes in noise levels. The  $L_{eq}$  during the noisiest traffic hour, expressed as  $L_{eq}$  (1-hr), is used by FHWA and ODOT as a descriptor for estimating traffic noise exposure.

### 3.0 FHWA NOISE IMPACT AND ABATEMENT CRITERIA

The National Environmental Policy Act (NEPA) of 1969 provides broad authority and responsibility for evaluating and mitigating adverse environmental effects including highway traffic noise. The NEPA directs federal agencies to use all practical means and measures to promote the general welfare and foster a healthy environment. The Federal-Aid Highway Act of 1970 specifically involves abatement of highway traffic noise and mandates the Federal Highway Administration (FHWA) to develop noise standards for mitigating highway noise.

In addition, Congress enacted standards and procedures for assessing the impact and abatement of highway traffic noise. These noise exposure standards and abatement procedures for establishing mitigation feasibility are covered under the United States Code of Federal Regulations Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise*. The 23 CFR 772 regulations were updated in July 2011 in accordance with the FHWA 772 Final Rule and are described in detail in the document entitled *Highway Traffic Noise: Analysis and Abatement Guideline* (revised January 2011). The regulations establish traffic noise-level criteria for various land use activities and further provide that FHWA not approve plans and specifications for a federal-aid highway project unless adequate highway traffic noise abatement measures to implement the appropriate noise level standards are addressed.

The regulations contain noise abatement criteria, which represent the upper limit of acceptable highway traffic noise exposure levels for different types of land uses and human activities. The regulations do not require that the abatement criteria be met in every instance. Rather, they require that every reasonable and feasible effort be made to provide noise mitigation when the criteria are approached or exceeded. The FHWA guidelines apply to freeways and major arterial roads where traffic flows relatively freely. The regulations require the following during the planning and design of a highway project:

- Identification of traffic noise impacts.
- Examination and evaluation of potential mitigation measures.
- Incorporation of all identified reasonable and feasible noise mitigation measures.
- Coordination with local officials and affected residences to provide helpful information on compatible future land use planning, noise control and the recommended noise abatement measures.

For FHWA Type I improvements, such as the Brent Spence Bridge Replacement/Rehabilitation Project, where substantial changes to both the vertical and horizontal alignment are proposed, compliance with the FHWA traffic noise regulation mandates are required. Detailed noise modeling is required to a distance of 500 feet from the proposed project edge of pavement for noise sensitive land uses. At a minimum, noise modeling must be completed at a distance that covers the extent of noise impacts identified from the proposed roadway improvements for each land use category.

To determine if noise levels near highways are compatible with various land uses, FHWA has developed noise abatement criteria (NAC) and procedures to be used in the planning and design of highways. The basic goals of the criteria are to minimize potential adverse noise impacts on communities and, where necessary and appropriate, to provide feasible and reasonable abatement measures to either reduce or eliminate projected future build noise impacts.



The Ohio Department of Transportation (ODOT) has developed procedures for assessing traffic noise impact and abatement feasibility and reasonableness which comply with the FHWA mandates. These impact and procedures are provided in the document entitled: *Standard Procedure for Analysis and Abatement of Highway Traffic Noise* (Standard Procedures No. 417-001(SP), effective June 7, 2011). A summary of the FHWA NAC for various land uses is presented in Table 1. These NAC levels represent the upper acceptable limit of traffic noise levels for exterior land uses and activities, and also for certain indoor activities. ODOT defines approach noise levels as being 1 decibel in A-weighted noise level (dB(A)) less than the NAC levels shown in Table 1. For example, an “approach” exterior noise level threshold of 66 dB(A)  $L_{eq}$  (1-hr) has been established for NAC for FHWA Category B and NAC Category C sites.

**Table 1. FHWA Noise Abatement Criteria for Highway Projects  
 In units of A-Weighted Sound Level – Decibels (dB(A))**

<b>Activity Category</b>	<b>A-Weighted Sound Level (dB(A)) <math>L_{eq}</math> (1-hr)</b>	<b>Evaluation Location</b>	<b>Description of Activity Category</b>
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67	Exterior	Residential areas.
C	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in Activity Category 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.

**Source:** Federal Highway Administration Code of Federal Regulations, (23 CFR 772, effective July 13, 2011).

**Note:** These sound levels are only to be used to determine impact. These are the absolute levels above which abatement must be considered. Noise abatement is designed to achieve a substantial noise reduction. Noise abatement is not designed to achieve the noise abatement criteria.

Independent of the approach level impact thresholds shown in Table 1, ODOT also considers a noise impact to occur when a substantial increase in the noise level is predicted. Current ODOT traffic noise policy guidelines defines a substantial noise level change as an increase of 10 dB(A) or more in future build noise level over comparable existing noise levels. Either an approach level impact or the significant noise level increase constitutes a noise impact.

### 3.1 Description of Each Activity Category

A description of each of the FHWA NAC activity categories is provided below.

**Activity Category A:** Includes 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. Some examples of lands that have been analyzed as Activity Category A include the Tomb of the Unknown Soldier, a monastery, an outdoor prayer area of a facility for nuns, and an amphitheater. FHWA must approve a land use as Activity Category A before a noise analysis under this activity category is initiated.

**Activity Category B:** Includes exterior criteria for residential land use. This includes single family and multi-family residences. For multi-family dwellings, the analysis must identify all dwelling units predicted to experience highway traffic noise impacts. This may include units above the ground level such as apartments or balconies. Consideration for abatement should be included for all identified noise impacts including those of common use recreational areas which are available for all residents and not just those near the highway. ODOT has a defined methodology to determine the equivalent number of receptors for these common shared outdoor areas based on usage factors and capacity limits. This methodology is described in Section 3.2 below.

**Activity Category C:** Includes the exterior areas of non-residential land uses not specifically covered in Category A or B. This category includes exterior activities for public and private facilities that tolerate less noise (e.g., recording studios, amphitheaters, libraries) than Activity Category E (see below). Each structure is generally considered one receptor site for discrete areas of frequent human use such as hospitals, libraries, parks, playgrounds, cemeteries, public meeting rooms, picnic and active recreation areas. Determination of cost effectiveness is sometimes problematic for non-residential land uses because of the difficulty determining the number of impacted receptors. ODOT has developed methodology to establish the number of equivalent receptors for these non-residential land uses. The equivalent number of receptors needs to be based on the context and intensity of each non-residential land use. These procedures are outlined below in Section 3.2.

**Activity Category D:** Includes the interior of a variety of non-residential public and private facilities that may be sensitive to increased noise levels. Each structure is generally considered one receptor site for areas of frequent human use such as libraries, and public meeting rooms. For hospital patient rooms or classrooms that lack air conditioning and where occupants must open windows for cooling, each room is considered one receptor. Abatement measures were considered to address interior impacts if exterior abatement measures were found to be either unfeasible or unreasonable. An indoor analysis will only be done after exhausting all outdoor analysis options. In situations where no exterior activities would be affected by the traffic noise, or where the exterior activities are far from or physically shielded from the roadway, Activity Category D was used as the basis for determining noise impacts.

Determining the interior noise level for Activity Category D land uses, can be achieved by subtracting the noise reduction factors in Table 2 from the predicted FHWA Traffic Noise Model Version 2.5 (TNM) modeled exterior levels . However for the final noise analysis and abatement design, interior noise measurements should be collected at locations where ODOT considers noise insulation as an abatement measure. FHWA publication *FHWA-DP-45-1R, Sound Procedures for Measuring Highway Noise: Final Report* provides procedures to measure building noise reductions.

**Table 2. Building Noise Reduction Factors**

<b>Building Type</b>	<b>Window Condition*</b>	<b>Noise Reduction Due to Exterior of the Structure</b>
All	Open	10 dB
Light Frame	Ordinary Sash (closed)	20 dB
	Storm Windows	25 dB
Masonry	Single Glazed	25 dB
	Double Glazed	35 dB

Source: *Highway Traffic Noise: Analysis and Abatement Guidance*, Revised January 2011

\* Windows shall be considered open unless there is firm knowledge that they are almost always closed.

**Activity Category E:** Includes exterior activities for certain commercial lands such as motels, hotels, offices and other developed lands not included in Activity Categories A-D or F. When determining the number of receivers for Activity Category E land uses, the number of equivalent receptors should be determined in the same manner that the number of receptors were determined for multi-family residences. For example, if the number of receptors for an apartment complex was determined by taking the total number of units in the building or if the determination involved the capacity limit for the pool or other outdoor frequent human use area, then this methodology should also be applied to Activity Category E land uses. The equivalent number of receptors is based on the context and intensity of each non-residential land use. These procedures are outlined below in Section 3.2.

**Activity Category F:** Includes land uses that are not sensitive to noise. No noise analysis is required.

**Activity Category G:** Includes undeveloped lands. Although consideration of mitigation is not required under 23 CFR 772, noise levels under the future build condition must be determined and documented. Furthermore, noise levels on undeveloped lands are to be made available to potential future land developers and local officials. Depending on the size of the undeveloped land, and if the vacant property has been issued permits, the minimum information to be provided under future build conditions consists of either the distance to the impact threshold of each land use or noise level estimates at discrete receptor points on the vacant parcels.

For undeveloped lands without a permit, the TNM modeling should be completed for vacant parcels at 50 feet from the edge of pavement or the right-of-way line at 100 feet and at every additional 100 feet (not to exceed 800 feet) until an impact zone is established that would identify potential impact for potential future development. If non-permitted vacant land is not permitted by the date of public knowledge, the noise level information will be provided to the

appropriate local government office for planning purposes in accordance with 23 CFR 772.17(a).

For undeveloped lands with a permit, the noise analysis and impact assessment should be completed consistent with the permitted future intended land use and evaluated under that activity category. The date of public knowledge is the date the NEPA document is approved. Therefore, ODOT will not provide traffic noise abatement for development permitted and constructed after the date the NEPA document is approved.

### **3.2 Establishing Exterior Areas of Frequent Human Use and Determination of Equivalent Receptors**

A noise receiver location is an area where noise is measured and/or determined. The receiver locations are normally restricted to "exterior areas of frequent human use." Interior locations are only used where there are no outside activities where exterior noise would cause annoyance, such as in places of worship, hospitals, libraries, theaters, etc. (see Table 1) and instead sensitivity to noise in the interior spaces of these NAC D land uses is of concern. Exterior receivers are typically:

- at or near the highway right-of-way line,
- at or near a building in residential or commercial areas,
- at an area between the right-of-way line and a building where ground level frequent human activity occurs, such as a patio, pool, or play area in the yard of a single family home,
- at public community facilities such as playgrounds, pools, parks, campgrounds, trails, picnic areas, active recreation areas such as basketball courts, baseball and football fields,
- at multi-story multi-family apartments or condominiums, exterior balconies or decks are considered suitable elevated receiver locations of frequent human use. In addition ground floor exterior areas shared by the members of the multi-family building are also suitable modeling receiver locations, and
- at schools, day-care facilities, retirement homes, churches, cemeteries, hospitals and other types of medical facilities.

Determining the equivalent number of receptors is an important step in establishing the number of potentially impacted people exposed to traffic noise generated from the Build Alternatives and the effectiveness of a proposed noise wall. Along those lines, ODOT has developed a set of guidelines and procedures to determine the number of equivalent receptors. Determining the equivalent number of receptors is necessary in establishing the feasibility and reasonableness of a proposed noise barrier in providing cost and acoustically effective abatement. The following formula is used in determining the equivalent number of receptors:

$$\text{Equivalent Number of Receptors} = (\text{Number of Occupants}/3) \times (\text{Usage Factor})$$

Where:

Number of Occupants = Number of People (Students, Visitors, etc.).

The number 3 is a constant and represents the average number of people per residence in Ohio.

Usage Factor = (Number of Daily Hours Used) / (24 Hours Per Day x Days Use Per Year/365 Days Per Year)

Note: Days Used Per Week / 7 Days Per Week can be substituted for Days Used Per Year/365 Days Per Year

## 4.0 NOISE ANALYSIS METHODOLOGY

The purpose of the noise analysis is to:

- Identify existing and potential noise sensitive areas within 500 feet of the proposed edge of pavement for the Build Alternatives.
- Group identified land uses into one of the Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC) land use activity categories.
- Estimate existing and future noise levels with and without the proposed Build Alternatives at each land use using the FHWA Traffic Noise Model Version 2.5 (TNM).
- Identify all properties where future build noise levels are projected to exceed FHWA traffic noise impact criteria up to a distance where there are no impacts caused from the proposed Build Alternatives.
- Evaluate the feasibility and reasonableness of providing noise abatement at locations where impacts are predicted to occur in accordance with Ohio Department of Transportation (ODOT) traffic noise policy guidelines.

### 4.1 Land Uses

In order to identify noise sensitive receptors within the study area, the following tasks were completed:

- aerial photography of the study area was reviewed,
- Geographic Information System (GIS) data of the study area was analyzed, and
- field reconnaissance's were conducted.

In Ohio, the study area includes mostly industrial and commercial land uses with a few small areas of residential uses. Several historic structures, schools, and parks are found within the study area. Based on these findings, land uses in the study area are categorized as Activity Categories B (residential) and C (commercial). Sites listed on the National Register of Historic Places (NRHP) are categorized as Activity Category B.

### 4.2 Traffic Data

Travel demand model and traffic count data were utilized to develop traffic projections for the No Build Alternative and Alternatives E and I in the 2035 design year. Traffic data used for this analysis are provided in Appendix A.

#### 4.2.1 Traffic Volumes

Traffic information includes the following:

- existing weekday traffic volumes on the roadways within the study area in September, October, and November of 2005,
- traffic volumes for McMillan Avenue was collected in January 2008, and
- traffic volumes on Central Avenue between OH 6<sup>th</sup> Street and OH 7<sup>th</sup> Street were collected in June of 2010 because the street was converted from one-way to two-way.

Traffic volumes for at-grade intersections were collected using turning movement counts, while ramp and mainline volumes on I-71, I-75, and US 50 were collected using portable machine

counters. Peak morning (7:30 to 8:30 AM) and afternoon (4:30 to 5:30 PM) hours were identified from the traffic counts and were used to estimate existing conditions (2005).

Design year (2035) traffic volumes were estimated using the Ohio Kentucky Indiana Regional Council of Government (OKI)'s regional travel demand model and existing year (2005) volumes. In order to coordinate the traffic projections within the I-75 corridor and the region, traffic projections for three adjoining I-75 projects (HAM-71/75-0.00/0.22 Brent Spence Bridge, HAM-75-2.30 Mill Creek Expressway, and HAM-75-10.10 Thru the Valley) were incorporated into the OKI regional travel demand model. In addition to the future No Build Alternative, the OKI demand model was used to predict 2035 design hour traffic volumes for the Build Alternatives. The demand model was re-run for each of the alternatives because differences in freeway access points affect local streets and freeway traffic patterns.

Truck percentages for the study area were calculated based on existing traffic counts and growth rates generated from the travel demand model.

#### **4.2.2 Development of Traffic Data**

Traffic data were developed as follows:

- Existing 4-hour turning movement counts were factored to average daily traffic (ADT) volumes using the ODOT's hourly distributions and seasonal adjustment factors.
- 72-hour and 48-hour ramp counts were converted to ADTs by applying seasonal adjustment factors.
- Calculated ADT volumes were compared to historical count information and ODOT ramp counts and existing traffic counts were smoothed along the mainline and between intersections as appropriate for the AM, PM, and calculated ADT volumes.
- AM and PM volumes were factored to design hours by applying a factor of 1.056 (as was done for the HAM-75-2.30 PID 76257 [Mill Creek Expressway] Project; which is located at the northern limits of the study area).
- Posted vehicle travel speeds were used for the noise modeling effort to ensure the worst case hourly traffic noise level would be reported.

The OKI regional travel demand model was also used to develop traffic assignments for the 2035 design year. Using the methods described in the National Cooperative Highway Research Program (NCHRP) 255 report, 24-hour model assignments were post-processed by comparing ADT count data to the base year (2005) model assignments and applying the same over/under estimation to the future year (2035) model assignment. A hybrid mix of the ratio and delta methods were applied to each link. Finally, 2035 ADT volumes were calculated by applying a straight line extrapolation between the 2005 counts and the post-processed 2035 ADT.

A growth factor was calculated for each link by dividing the 2035 ADT by the 2005 traffic count. This factor was then applied to the AM and PM peak hour count data to get 2035 AM and PM peak hour data.

Turning movement forecasts for the 2035 AM, PM, and ADT were made using the NCHRP 255 iterative proportional method. Interchanges were treated as single point intersections, where possible, to determine the mainline, cross street, and ramp volumes. Finally, all 2035 traffic volumes on the mainline and between intersections were adjusted as appropriate for the AM, PM, and ADT periods.

### **4.3 Traffic Noise Model**

The noise analysis process included the development of a three-dimensional geometric representation of the study area utilizing the FHWA Traffic Noise Model (TNM) version 2.5. This involved computer coding of the physical roadway configurations and major geographic features such as tree zones, pavement surfaces, terrain lines and adjacent noise sensitive properties (described as receptor sites).

The TNM file coding process was completed using electronic based Micro-station design plans of the study area, which depict the existing I-71 and I-75 highways, service roads, primary intersecting streets and proposed improvements. For each roadway segment, traffic volumes and vehicle travel speeds were input into the TNM file. The TNM program was then executed and noise levels were predicted at applicable receptor sites.

The resultant noise levels were tabulated and noise impacts associated with the project were identified. In residential areas where noise impacts were projected to occur, a noise barrier analysis was completed to determine if noise reductions can be achieved while satisfying ODOT feasibility and reasonableness requirements. Noise barrier heights and lengths were optimized for this analysis to provide the maximum noise reduction achievable at the lowest possible cost per benefiting receptor.

### **4.4 Noise Measurements**

This section provides a summary of activities associated with the ambient noise monitoring survey. Noise measurements were collected using noise monitoring equipment, which is in conformance with the American National Standards Institute (ANSI) requirements. Field measurements were collected consistent with guidelines contained in the FHWA *Measurements of Highway Related Noise* (May 1996).

#### **4.4.1 Field Data Collection**

Noise monitoring sites were selected in residential communities fronting the I-75 corridor, which would result in maximum exposure to future traffic noise generated by the proposed Build Alternatives and to provide adequate geographic coverage within the study area.

Noise measurements were collected in January and February 2010 at 48 representative noise sensitive land uses spanning the study area limits. Noise measurement sites in Ohio are labeled M-1 thru M-16 and those in Kentucky are identified as sites M-17 through M-48 (see Kentucky Transportation Cabinet [KYTC] Project Item No. 6-17). To provide continuity with the *Brent Spence Bridge Noise Screening Report* completed in February 2009, the former noise receptor identification numbers are provided in parenthesis adjacent to the new identification numbers. In addition to the 2009 receptor locations, new receptors were added to provide adequate coverage of the study area as required under the revised ODOT traffic noise policy (June 2011).

At each representative site, noise measurements were made during the 7:00 to 9:00 AM and 4:00 to 6:00 PM peak hours for 20-minute periods. Noise measurements were collected using several Brüel & Kjær (B&K) Type 2231 and 2238 sound level meters fitted with a B&K Type 5155 condenser microphone and windshield. Calibration of the noise equipment was performed before and after each reading. Noise measurements were collected on rain-free days with wind speeds of less than 12 miles per hour (Appendix B). The locations of each of these monitoring sites are provided in Exhibits 3A through 3O. In addition to the 16 noise measurement sites, the exhibits depict the location of 615 additional noise prediction locations derived from the land use



survey. On the exhibit plan sheets, the noise measurement sites are depicted by a yellow colored dot and noise prediction receptor sites are depicted by the red colored dot.

A summary of measured peak hour ambient noise levels is provided in Table 3. The predominate source of noise in the study area is generated from motor vehicles traveling on the I-75, service roads and connecting roadways. Residential areas and community facilities adjacent to these roadways are exposed to moderate to high levels of existing road traffic noise. Noise levels which approach or exceed the NAC impact thresholds are shown in bold type in Table 3. Noise levels at the 16 monitoring sites ranged from a low measured level of approximately 61 decibels in A-weighted noise level (dB(A)) at Site M-15 to high reading of nearly 78 dB(A) at Site M-3. Existing peak-hour noise levels approached or exceeded ODOT impact thresholds at 12 out of the 16 representative noise measurement locations. Noise measurements exceeded the NAC at ten NAC B properties and two NAC E properties.

#### **4.5 TNM Model Validation**

A TNM model validation was completed at three of the 16 representative noise monitoring locations where noise measurements were originally collected in January and February 2010. The validation process is necessary to verify if the existing ambient noise conditions measured in the field are reproducible within the TNM model. Simultaneous traffic counts and noise measurements were collected in August 3 and 4, 2011 at Sites M1 (shown on Exhibit 3A), M3 (shown on Exhibit 3F) and R514 (shown on Exhibit 3J). Each measurement was recorded for a continuous 30 minute duration using a calibrated B & K Model 2231 sound level meter (SLM) fitted with a windshield. In addition, prior to each noise measurement the SLM was calibrated for accuracy using a B & K 4230 calibrator. The B&K 2231 SLM and 4230 Calibrator are annually laboratory certified pieces of calibrated monitoring equipment satisfying the ANSI Type I precision for noise measurement sampling accuracy. All measurements were performed under acceptable climatic and street surface conditions (i.e., dry road surface and low wind speeds).

A summary of the short-term noise measurement and TNM model results are provided in Table 4. TNM modeled noise levels for both peak hours were within ODOT's defined acceptable range of plus or minus 3.0 dB(A) of the corresponding measured noise level at all three of the noise monitoring locations and therefore provide reasonable correlation and validation.

**Table 3. Summary of Measured Peak Hour Noise Levels (Leq [1hr]) dB(A)**

Site Number	Address of Measurement Site	Land Use	NAC Category	AM	PM
				L <sub>eq</sub> (1hr) dB(A)	L <sub>eq</sub> (1hr) dB(A)
M-1(O314)	1130 Draper Street	Residential	B	72.2	70.3
M-2(O415)	2503 Addison Street	Residential	B	68.5	70.8
M-3(O70)	Naeher Street	Residential	B	77.3	77.5
M-4(O494)	George F. Sands School, 900 Poplar Street	School	E	70.7	70.0
M-5(O683)	1502A Dudley Walk	Residential	B	70.9	72.9
M-6(O560)	Cincinnati Job Corps 1356 Western Avenue (crossing Kenner Street)	Commercial	E	72.2	69.7
M-7(O819)	The Arts Apartments at Music Hall, 885 Ezzard Charles Drive	Residential	B	72.5	73.4
M-8(O951)	880 West Court Street	Residential	B	71.7	72.1
M-9(O578)	1010 Linn Street	Residential	B	68.6	68.7
M-10(O490)	907 Mound Street	Residential	B	69.1	71.1
M-11(O151)	Former Harriet Beecher Stowe School (Fox19 bldg), 635 7 <sup>th</sup> Street	Historic	E	66.4	67.7
M-12(O604)	516 Linn Street	Commercial	E	65.6	66.3
M-13(O292)	112 West 3 <sup>rd</sup> Street	Residential	B	74.0	73.4
M-14(O664)	Longworth Hall (700 West Pete Rose Way)	Historic	E	67.8	67.8
M-15(O664)	Longworth Hall (700 West Pete Rose Way)	Historic	E	62.0	61.2
M-16(O756)	724 Mehring Way	Residential	B	66.0	65.0

<sup>1</sup> Noise measurements collected in January and February 2010 for duration of 20 minutes per noise measurement.

**Table 4. TNM Validation: Summary of Ambient Noise Measurements and TNM Predicted Existing Noise Levels**

Site Number	Address of Measurement Site	Land Use	NAC Category	Date of Noise Reading	7-11 AM Time Period			2-6 PM Time Period		
					Noise <sup>1</sup> Measurement	TNM Model	Delta * L <sub>eq</sub> (1-hr) dB(A)	Noise <sup>1</sup> Measurement	TNM Model	Delta * L <sub>eq</sub> (1-hr) dB(A)
M-1(O314)	1130 Draper Street	Residential	B	8/4/11	70.9	70.4	0.5	67.9	65.1	-2.8
M-3(O70)	1125 Dayton Street	Residential	B	8/4/11	71.4	73.3	1.9	71.4	70.0	-1.4
R514 (OP362)	Queensgate Playground and Ball Fields	Outdoor Sports Area	C	8/3/11	72.0	73.8	1.8	71.1	72.2	-1.1

<sup>1</sup> Noise measurements collected on August 3-4, 2011 for duration of 30 minutes per noise measurement.

<sup>2</sup> Delta L<sub>eq</sub> (1-hr) dB(A) = TNM predicted minus Measured Noise Level

## 5.0 FUTURE NOISE LEVELS

### 5.1 Future 2035 No Build Noise Levels

Future (2035) No Build noise levels were estimated for 621 Federal Highway Administration (FHWA) Traffic Noise Model Version 2.5 (TNM) receiver locations. These locations include 16 noise measurement sites and 605 prediction sites (Exhibits 3A through 3O). Table 5 presents existing and future No Build Alternative predicted noise levels by receiver. Table 6 presents a summary of the future No Build Alternative impacts by activity category. TNM files are provided in Appendix C.

The PM peak period has a slightly higher number of impacts than the AM peak hour. Under the 2035 No Build conditions, the total number of projected impacts is expected to increase by about three percent. There are 252 future No Build PM peak hour receiver impacts occurring at 712 equivalent receptors compared to 244 receiver impacts representing 685 equivalent receptors under the PM peak hour existing conditions. The largest impact by activity category occurred for Category B (residential) where 501 equivalent receptor impacts representing 187 receiver points are expected to occur during the PM peak period.

### 5.2 Alternative E

Alternative E noise levels were determined at 621 receiver locations (Exhibits 3A through 3O). Table 7 presents Alternative E predicted noise levels by receiver. Table 6 presents a summary of Alternative E impacts by activity category. TNM files are provided in Appendix C.

In general, the number of PM peak period impacts is slightly greater than the corresponding AM peak projections. Under Alternative E, the total number of PM peak hour impacts is expected to increase by approximately 10 percent (278 versus 252 impacts) from the 2035 future No Build conditions and increase by 14 percent (278 versus 244 impacts) when compared to existing (2010) noise levels. In terms of equivalent receptor impacts, there is a 22 percent increase (833 versus 685) under the Alternative E PM peak hour compared to the 2010 existing conditions. The largest number of impacts by activity category is for Activity Category B (residential), where 204 receivers exceed the impact threshold representing 551 equivalent receptors during the PM peak period. The impacts to 551 equivalent receptors represent a 12 percent increase during the PM peak hour time period over the existing (2010) conditions.

### 5.3 Alternative I

For Alternative I, noise levels were determined at 621 locations (Exhibits 3A through 3O). Table 8 presents Alternative I predicted noise levels by receiver. Table 6 presents a summary of Alternative I impacts by activity category. TNM files are provided in Appendix C.

In general, the number of PM peak impacts is slightly greater than the corresponding AM peak hour projections. Under Alternative I, the PM peak hour impacts increase by approximately 12 percent (283 versus 252 impacts) from 2035 future No Build conditions and increase by 16 percent (283 versus 244 impacts) when compared to the existing (2010) noise levels. In terms of equivalent receptor impacts, there is a 23 percent increase (844 versus 685) compared to the existing (2010) conditions. The largest number of impacts by activity category is for Activity Category B (residential), where 210 receiver locations represent 562 equivalent receptors exceed impact thresholds during the PM peak period. The 562 equivalent receptor impacts represent a 15 percent increase (490 equivalent receptors) over the existing (2010) conditions.

#### **5.4 Alternative E and I Vacant Undeveloped Parcels with a Permit Findings**

Within the study area, the land use survey did not identify non-permitted undeveloped lands. Therefore all vacant parcels were modeled for noise impacts in accordance with their intended permitted activity category. These types of receptors are indicated as vacant with their intended land use designation shown in Table 5, Table 7 and Table 8. Most of the vacant parcels are residential lots, which were considered for noise abatement in accordance with ODOT traffic noise abatement feasibility and reasonableness requirements. The remaining lots consisted of primarily permitted commercial uses which were evaluated under NAC Activity Category E.

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))	2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))
R1(O212)	Multi-family	B	59.0	59.8	0.8	59.1	60.3	1.2
R2(O210)	Multi-family	B	58.9	59.8	0.9	59.0	60.2	1.2
R3(O623)	Residential	B	57.0	57.9	0.9	57.2	58.4	1.2
R4(O110)	Multi-family	B	61.0	61.8	0.8	61.2	62.4	1.2
R5(O322)	Single Family	B	61.7	62.5	0.8	61.7	63.0	1.3
R6(O37)	Single Family	B	61.4	62.3	0.9	61.5	62.7	1.2
R7(O725)	School	C	70.6	71.5	0.9	70.5	71.7	1.2
R8(O411)	Single Family	B	64.5	65.3	0.8	64.5	65.8	1.3
R9(O324)	Multi-family	B	67.4	68.3	0.9	67.4	68.7	1.3
R10(O740)	Single Family	B	69.4	70.3	0.9	69.0	70.4	1.4
R11(O17)	Church	C	67.3	68.2	0.9	66.6	68.1	1.5
R12(O13)	Multi-family	B	57.9	58.7	0.8	57.9	58.9	1.0
R13(O125)	Daycare	C	68.9	69.8	0.9	68.0	69.6	1.6
R14a(O438)	Residential	B	69.0	69.9	0.9	68.1	69.7	1.6
R15(O221)	Single Family	B	70.0	70.8	0.8	69.7	71.0	1.3
R16(O101)	Single Family	B	70.6	71.4	0.8	70.4	71.4	1.0
R17(O313)	Office	E	65.2	65.6	0.4	65.3	65.9	0.6
R18(O734)	Multi-family	B	71.1	72.0	0.9	70.8	72.2	1.4
R19(O427)	Recreational	C	75.5	76.3	0.8	74.8	76.2	1.4
R14b(O438)	Recreational	C	70.3	71.2	0.9	69.4	71.1	1.7
R20(O615)	Office	E	65.2	65.3	0.1	65.4	65.7	0.3
R21(O421)	Single Family	B	71.7	72.6	0.9	70.7	72.2	1.5
R23(O8)	Multi-family	B	66.6	67.1	0.5	66.3	66.9	0.6
R24(O109)	Multi-family	B	67.7	68.5	0.8	67.1	68.2	1.1

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
M-1(O314)	Multi-family	B	70.8	71.6	0.8	70.2	71.4	1.2
R26(O214)	Multi-family	B	68.8	69.7	0.9	68.2	69.4	1.2
R27(OP422)	Park	C	66.1	66.6	0.5	65.9	66.4	0.5
R28(O613)	Office	E	73.7	74.6	0.9	72.9	74.0	1.1
R29(O414)	Office	E	74.1	74.9	0.8	73.5	74.3	0.8
R30(O422)	Office	E	71.2	71.0	-0.2	71.2	70.7	-0.5
R31(O124 R-1)	Multi-family	B	70.4	69.9	-0.5	70.3	69.4	-0.9
R32(O317)	Restaurant/Bar	E	74.9	75.7	0.8	73.8	74.6	0.8
R33(O1021)	Residential	B	75.6	76.2	0.6	76.5	77.2	0.7
R34(O1028)	Residential	B	75.2	75.7	0.5	76.1	76.6	0.5
R35(O1014)	Office	E	75.3	75.7	0.4	76.3	76.7	0.4
R36(O1025)	Residential	B	73.2	73.7	0.5	74.0	74.5	0.5
R37(O16 R-2)	Commercial	E	70.2	70.3	0.1	69.5	69.4	-0.1
R38(O1)	Office	E	73.7	74.1	0.4	74.8	75.2	0.4
R39(O1044)	Residential	B	71.6	72.3	0.7	71.9	72.9	1.0
R40(O1017)	Residential	B	71.2	71.9	0.7	71.4	72.4	1.0
M-2(O415)	Office	E	71.0	70.6	-0.4	72.8	72.1	-0.7
R42(O21)	Office	E	77.1	78.0	0.9	77.8	78.8	1.0
R43(O1007)	Office	E	69.3	69.0	-0.3	70.9	70.3	-0.6
R44(O620)	Office	E	71.4	71.0	-0.4	73.2	72.5	-0.7
R45(O1018)	Residential	B	68.8	69.6	0.8	68.9	69.9	1.0
R46(O76)	Office	E	74.6	75.2	0.6	75.3	76.0	0.7
R47(O1046)	Residential	B	68.6	69.4	0.8	68.7	69.8	1.1
R48(OV730)	Vacant-Residential	B	67.3	68.0	0.7	67.5	68.5	1.0

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))	2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))
R49(O505)	Office	E	71.7	71.7	0.0	71.7	71.2	-0.5
R50(O1024)	Residential	B	66.7	67.3	0.6	67.0	67.7	0.7
R51(O417)	Residential	B	67.3	67.9	0.6	67.6	68.3	0.7
R52(O1019)	Residential	B	68.6	69.3	0.7	68.7	69.7	1.0
R53(O119)	Office	E	70.8	70.3	-0.5	72.5	72.3	-0.2
R54(O49)	Office	E	66.5	67.1	0.6	66.2	66.7	0.5
R55(O108)	Office	E	69.9	70.2	0.3	69.9	69.8	-0.1
R56(O1043)	Residential	B	64.1	64.9	0.8	64.6	65.6	1.0
R57(O237 R-3)	Office	E	69.6	69.8	0.2	69.6	69.6	0.0
R58(O1004)	Residential	B	66.1	66.9	0.8	66.2	67.3	1.1
R59(O1037)	Residential	B	69.5	70.3	0.8	69.7	70.8	1.1
R60(OV119)	Vacant-Commercial	E	69.8	69.4	-0.4	71.5	70.9	-0.6
R61(O426)	Residential	B	71.1	70.6	-0.5	72.9	72.3	-0.6
R62(O527)	Residential	B	70.8	70.2	-0.6	72.7	71.9	-0.8
R63(O316)	Residential	B	71.1	70.7	-0.4	72.9	72.3	-0.6
R64(O425)	Single Family	B	71.1	70.9	-0.2	72.8	72.3	-0.5
R65(O219)	Residential	B	70.8	70.3	-0.5	72.6	71.9	-0.7
R66(O548 R-4)	Commercial	E	72.1	72.5	0.4	71.9	72.1	0.2
R67(O1013)	Residential	B	72.2	72.9	0.7	72.9	73.7	0.8
R68(O220)	Residential	B	70.6	70.3	-0.3	72.3	71.7	-0.6
R69(O423)	Residential	B	68.8	68.6	-0.2	70.3	69.9	-0.4
R70(OV1048)	Vacant-Residential	B	73.6	74.1	0.5	74.3	75.0	0.7
R71(O22)	Office	E	66.1	66.3	0.2	67.0	66.9	-0.1
R72(O1030)	Residential	B	69.8	70.4	0.6	70.4	71.2	0.8



Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R73(OV563)	Vacant-Residential	B	73.3	73.9	0.6	74.2	74.8	0.6
R74(O1048)	Residential	B	73.6	74.2	0.6	74.3	75.0	0.7
R75(O1033)	Single Family	B	72.3	72.9	0.6	72.9	73.7	0.8
R76(O353)	Residential	B	73.3	73.8	0.5	74.1	74.7	0.6
R77(O1035)	Residential	B	64.1	64.9	0.8	64.1	64.9	0.8
R78(OP169)	Park	C	71.7	72.4	0.7	72.5	73.1	0.6
R79(OV353)	Vacant-Residential	B	71.8	72.2	0.4	72.8	73.3	0.5
R80(OV777)	Vacant-Commercial	E	73.5	74.2	0.7	74.6	75.2	0.6
R81a(O666)	Multi-family	B	67.5	68.3	0.8	67.6	68.7	1.1
R81b(O666)	Multi-family	B	66.5	67.3	0.8	66.7	67.8	1.1
R82a(O102)	Multi-family	B	60.8	61.6	0.8	61.0	61.9	0.9
R83(O204)	Residential	B	68.4	69.2	0.8	68.5	69.7	1.2
R85a(O315)	Multi-family	B	60.9	61.7	0.8	61.2	62.1	0.9
R84(O261)	Residential	B	68.6	69.4	0.8	68.7	69.8	1.1
R86(O169)	Office	E	68.9	69.5	0.6	69.4	70.0	0.6
R88(OV565)	Vacant-Commercial	E	74.2	74.9	0.7	74.7	75.4	0.7
R87(O519)	Residential	B	68.2	68.9	0.7	68.6	69.6	1.0
R89(O512)	Office	E	61.7	62.0	0.3	61.7	62.1	0.4
R92(OV1003)	Vacant-Residential	B	69.7	69.8	0.1	70.9	70.6	-0.3
R90(OV204)	Vacant-Residential	B	67.2	68.0	0.8	67.3	68.5	1.2
R91(OV666)	Vacant-Residential	B	67.0	67.8	0.8	67.0	68.2	1.2
R93(OV565)	Vacant-Commercial	E	74.3	75.1	0.8	75.2	75.9	0.7
R94(OV565)	Vacant-Commercial	E	73.8	74.6	0.8	74.4	75.2	0.8
R82b(O102)	Multi-family	B	60.8	61.5	0.7	61.1	61.9	0.8

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R95(O2)	Residential	B	68.8	69.6	0.8	69.0	70.1	1.1
R96(O1039)	Residential	B	64.5	65.2	0.7	64.4	65.1	0.7
R97(OV565)	Vacant-Commercial	E	73.4	74.2	0.8	74.0	74.8	0.8
R98(OV1003)	Vacant-Residential	B	69.8	69.8	0.0	70.7	70.5	-0.2
R85b(O315)	Multi-family	B	62.4	63.2	0.8	62.7	63.8	1.1
R99(O514)	Residential	B	60.8	61.6	0.8	61.2	61.9	0.7
R100(O402)	Residential	B	63.2	63.8	0.6	63.2	63.7	0.5
R101(O311)	Residential	B	61.7	62.3	0.6	61.8	62.4	0.6
R102(O507)	Residential	B	62.7	63.4	0.7	62.7	63.4	0.7
R103(O733)	Residential	B	63.7	64.4	0.7	63.7	64.4	0.7
R104(O128)	Residential	B	69.3	70.1	0.8	69.5	70.6	1.1
R105(O207)	Residential	B	62.2	63.0	0.8	62.3	63.1	0.8
R106(O297)	Residential	B	69.8	70.6	0.8	70.0	71.1	1.1
R107(O745)	Office	E	69.4	69.9	0.5	70.1	70.5	0.4
R108(O205)	Residential	B	63.2	64.0	0.8	63.2	64.0	0.8
R109(O11)	Residential	B	63.9	64.7	0.8	63.9	64.7	0.8
R110(O739)	Residential	B	63.5	64.3	0.8	63.5	64.2	0.7
R112(OV72)	Vacant-Residential	B	73.3	74.0	0.7	73.8	74.5	0.7
R111(O7)	Residential	B	58.0	58.9	0.9	58.0	59.2	1.2
R113(O24)	Residential	B	64.4	65.2	0.8	64.4	65.2	0.8
R114(OV1049)	Vacant-Residential	B	64.1	64.9	0.8	64.1	64.9	0.8
R115(OV25)	Vacant-Residential	B	62.1	62.7	0.6	62.5	63.0	0.5
R116(OV72)	Vacant-Residential	B	72.9	73.6	0.7	73.3	74.1	0.8
R117(O222)	Residential	B	71.5	72.2	0.7	71.9	72.7	0.8

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R122(OV1051)	Vacant-Residential	B	69.9	69.7	-0.2	71.2	70.7	-0.5
R118(O775)	Residential	B	70.7	71.2	0.5	71.3	72.0	0.7
R119(O304)	Residential	B	68.8	69.6	0.8	69.1	70.2	1.1
R120(OV1039)	Vacant-Residential	B	62.9	63.6	0.7	62.7	63.5	0.8
R121(OV733)	Vacant-Residential	B	61.5	62.2	0.7	61.4	62.1	0.7
R123(O253)	Residential	B	70.2	70.7	0.5	70.8	71.5	0.7
R124(O20)	Residential	B	69.5	70.2	0.7	70.2	71.0	0.8
R125(O10)	Residential	B	68.6	69.4	0.8	68.8	69.9	1.1
R126(O1001)	Residential	B	70.1	70.4	0.3	70.8	70.9	0.1
R127(O418)	Residential	B	68.5	69.2	0.7	69.2	70.0	0.8
R128(O72)	Residential	B	72.2	73.0	0.8	72.6	73.3	0.7
R129(OV10)	Vacant-Residential	B	69.2	70.0	0.8	69.5	70.6	1.1
R130(OV434)	Vacant-Residential	B	70.5	71.3	0.8	70.9	71.7	0.8
R133(OV1051)	Vacant-Residential	B	69.8	69.5	-0.3	71.2	70.7	-0.5
R131(O199)	Residential	B	68.5	69.3	0.8	68.9	69.9	1.0
R132(OV704)	Vacant-Commercial	E	77.9	78.7	0.8	78.7	79.4	0.7
R134(O428)	Residential	B	67.7	68.4	0.7	68.3	69.2	0.9
R135(O1003)	Residential	B	69.2	69.7	0.5	69.7	70.1	0.4
R136(OV10)	Vacant-Residential	B	68.3	69.1	0.8	68.5	69.6	1.1
R137(O206)	Multi-family	B	60.1	60.7	0.6	60.0	60.6	0.6
R138(O413)	Residential	B	55.2	55.8	0.6	55.2	55.7	0.5
R139(O202)	Residential	B	66.2	66.9	0.7	66.9	67.7	0.8
R140(O38)	Residential	B	65.6	66.3	0.7	66.0	67.0	1.0
R141(O403)	Residential	B	67.8	68.6	0.8	68.2	69.2	1.0

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R142(O300)	Residential	B	65.6	66.3	0.7	66.1	67.0	0.9
R143(O306)	Residential	B	56.9	57.7	0.8	56.9	58.1	1.2
R144(O511)	Residential	B	68.1	68.9	0.8	68.5	69.5	1.0
R145(O412)	Residential	B	67.4	68.2	0.8	67.8	68.9	1.1
R146(O434)	Residential	B	68.7	69.5	0.8	69.1	69.8	0.7
R147(OV260)	Vacant-Residential	B	59.7	60.5	0.8	60.0	61.1	1.1
R148(O42)	Residential	B	68.6	69.1	0.5	69.0	69.4	0.4
R149(O727)	Residential	B	69.6	69.9	0.3	70.2	70.3	0.1
R150(O647)	Residential	B	64.3	64.9	0.6	64.8	65.3	0.5
R151(OV428)	Vacant-Residential	B	66.4	67.1	0.7	67.0	67.9	0.9
R152(O229)	Residential	B	67.8	68.6	0.8	68.2	68.9	0.7
M-3(O70)	Residential	B	76.9	77.7	0.8	77.5	78.2	0.7
R154(O328)	Residential	B	64.4	65.2	0.8	64.6	65.4	0.8
R155(OV328)	Vacant-Commercial	E	52.6	52.7	0.1	53.4	53.2	-0.2
R156(O43)	Residential	B	66.7	67.4	0.7	67.0	67.7	0.7
R157(O116)	Residential	B	69.2	69.5	0.3	69.8	69.9	0.1
R158(O103)	Residential	B	67.2	67.9	0.7	67.6	68.2	0.6
R159(OV38)	Vacant-Residential	B	66.0	66.8	0.8	66.4	67.5	1.1
R160(O1049)	Single Family	B	62.6	63.5	0.9	62.4	63.4	1.0
R161(OV1051)	Vacant-Residential	B	70.3	70.2	-0.1	71.4	71.1	-0.3
R162(O1005)	Residential	B	66.8	67.5	0.7	67.1	67.8	0.7
R163(O1008)	Residential	B	67.1	67.7	0.6	67.5	67.9	0.4
R164(O260)	Single Family	B	46.7	47.4	0.7	47.0	47.9	0.9
R165(O768)	Office	E	68.1	67.5	-0.6	68.6	67.7	-0.9

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R166(O463)	Residential	B	75.2	76.0	0.8	75.7	76.4	0.7
R167(O766)	Office	E	63.3	63.8	0.5	63.6	64.1	0.5
R168(O750)	Residential	B	65.8	66.6	0.8	66.1	66.8	0.7
R169(O213)	Residential	B	52.1	52.9	0.8	52.1	53.3	1.2
R170(O107)	Office	E	65.3	66.0	0.7	65.6	66.3	0.7
R171(O653 R-6)	Commercial	E	71.7	72.2	0.5	70.8	71.5	0.7
R172(O134)	Residential	B	64.6	65.4	0.8	64.9	65.6	0.7
R173(O443 R-5)	Residential	B	65.2	65.6	0.4	65.9	66.0	0.1
R174(O671)	Residential	B	74.7	75.5	0.8	75.1	75.9	0.8
R175(O617)	Office	E	62.6	63.3	0.7	63.1	63.8	0.7
R176(O1010)	Residential	B	64.9	65.7	0.8	65.0	65.7	0.7
R177(O672)	Residential	B	73.9	74.7	0.8	74.3	75.1	0.8
R178(O784)	Residential	B	70.5	71.3	0.8	70.8	71.6	0.8
R179(O760)	Residential	B	63.9	64.7	0.8	64.1	64.9	0.8
R180(O1009)	Residential	B	67.9	68.7	0.8	68.2	69.0	0.8
R181(O644)	Residential	B	75.6	76.4	0.8	76.1	76.8	0.7
R182(O1020)	Residential	B	66.2	67.0	0.8	66.2	67.0	0.8
R183(O447)	Office	E	71.5	72.1	0.6	70.7	71.4	0.7
R184(O129)	Residential	B	67.6	68.4	0.8	67.8	68.6	0.8
R185(O627)	Vacant-Commercial	E	64.9	65.7	0.8	65.0	65.9	0.9
R186(O762)	Residential	B	63.2	64.0	0.8	63.3	64.1	0.8
R187(OV436)	Vacant-Commercial	E	78.2	79.0	0.8	79.0	79.7	0.7
R188(O167)	Residential	B	71.5	72.3	0.8	71.8	72.6	0.8
R189(O111)	Multi-family	B	58.4	59.2	0.8	58.2	59.2	1.0

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R190(O804)	Residential	B	67.6	68.4	0.8	67.8	68.6	0.8
R191(O1045)	Residential	B	51.7	52.4	0.7	51.9	52.8	0.9
R192(OV407)	Vacant-Residential	B	59.3	60.1	0.8	59.2	60.4	1.2
R193(O168)	Residential	B	70.4	71.2	0.8	70.7	71.5	0.8
R194(O1038)	Residential	B	66.4	67.1	0.7	66.3	67.1	0.8
R195(O1006)	Single Family	B	66.7	67.0	0.3	67.8	68.2	0.4
R196(OV521)	Vacant-Commercial	E	65.8	64.9	-0.9	67.6	66.8	-0.8
R197(O130)	Vacant-Residential	B	73.3	74.1	0.8	73.7	74.5	0.8
R198(O252)	Single Family	B	64.0	64.1	0.1	65.5	65.6	0.1
R199(O521)	Vacant-Commercial	E	64.3	63.9	-0.4	66.0	65.6	-0.4
R200(O724)	Residential	B	59.2	60.1	0.9	59.2	60.4	1.2
R201(O135)	Residential	B	58.0	57.9	-0.1	58.8	58.4	-0.4
R202(OV775)	Vacant-Residential	B	66.8	67.4	0.6	67.3	68.2	0.9
205(OV775)	Vacant-Residential	B	64.9	65.5	0.6	65.4	66.2	0.8
R203(O661)	Church	C	64.9	65.4	0.5	66.2	66.6	0.4
R204(O301)	Residential	B	68.5	69.3	0.8	68.8	69.9	1.1
R206(OV312)	Vacant-Residential	B	60.8	61.6	0.8	60.5	61.3	0.8
R207(O517)	Residential	B	62.1	62.8	0.7	62.6	63.5	0.9
R208(O133)	Residential	B	63.8	64.5	0.7	64.1	64.7	0.6
R209(O208)	Vacant-Commercial	E	62.2	63.0	0.8	62.0	63.0	1.0
R210(O147)	Office	E	58.6	59.0	0.4	59.3	59.7	0.4
R211(O622)	Residential	B	61.9	62.7	0.8	62.0	63.2	1.2
R212(O407)	Residential	B	60.0	60.9	0.9	60.2	61.3	1.1
R213(O719)	Residential	B	60.1	60.9	0.8	60.2	61.4	1.2

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
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R214(O346)	Residential	B	67.3	68.2	0.9	67.5	68.6	1.1
R215(O71)	Residential	B	70.1	70.9	0.8	70.4	71.2	0.8
R216(O325)	Residential	B	59.5	60.1	0.6	60.2	60.9	0.7
R217(OV296)	Vacant-Residential	B	63.2	64.0	0.8	63.6	64.7	1.1
R218(O665)	Residential	B	67.4	68.2	0.8	67.5	68.6	1.1
R219(O131)	Residential	B	63.1	63.7	0.6	63.4	63.9	0.5
R224a(O12)	Multi-family	B	53.8	54.5	0.7	53.9	54.7	0.8
R220(O296)	Residential	B	62.4	63.2	0.8	62.8	63.8	1.0
R221(O40)	Residential	B	64.0	64.6	0.6	64.6	65.4	0.8
R222(O122)	Residential	B	59.7	60.3	0.6	60.6	61.3	0.7
R223(O1002)	Residential	B	59.9	60.8	0.9	59.9	61.1	1.2
R225(O3)	Residential	B	61.3	61.8	0.5	62.1	62.8	0.7
R226(O1047)	Residential	B	66.8	67.7	0.9	66.9	68.1	1.2
R227(O5)	Residential	B	70.0	69.9	-0.1	71.1	70.8	-0.3
R228(O444)	Residential	B	69.1	69.3	0.2	69.8	69.8	0.0
R229(OV611)	Vacant-Residential	B	62.8	63.7	0.9	63.2	64.3	1.1
R230(O855)	Office	E	71.0	71.4	0.4	70.3	70.7	0.4
R231(O761)	Residential	B	62.7	63.5	0.8	62.8	63.6	0.8
R232(O634)	Residential	B	63.3	64.0	0.7	63.6	64.2	0.6
R233(OV321)	Vacant-Residential	B	71.7	72.5	0.8	72.2	72.9	0.7
R234(OV223)	Vacant-Residential	B	63.3	64.0	0.7	63.5	64.2	0.7
R235(O209)	Residential	B	68.6	69.0	0.4	69.2	69.4	0.2
R236(O722)	Residential	B	62.0	62.8	0.8	62.3	63.4	1.1
R237(O611)	Multi-family	B	68.6	69.4	0.8	68.7	69.9	1.2

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

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R238(OV135)	Vacant-Residential	B	61.9	62.5	0.6	62.3	62.7	0.4
R239(O436 R-7)	Residential	B	77.4	78.2	0.8	78.1	78.8	0.7
R240(OV562)	Vacant-Residential	B	64.0	64.8	0.8	63.8	64.6	0.8
R241(O562)	Residential	B	62.8	63.6	0.8	62.6	63.4	0.8
R242(O1034)	Residential	B	65.0	65.8	0.8	65.2	66.3	1.1
R243(O866)	Office	E	63.9	64.1	0.2	63.8	63.9	0.1
R244(O309)	Residential	B	55.5	56.3	0.8	55.6	56.4	0.8
R245(O652)	Residential	B	75.9	76.7	0.8	76.5	77.2	0.7
R246(O140)	Residential	B	63.0	63.7	0.7	63.3	63.9	0.6
R247(O539)	Residential	B	68.0	68.8	0.8	68.3	69.4	1.1
R248(O218)	Residential	B	59.1	59.9	0.8	58.7	59.6	0.9
R249(O530)	Residential	B	68.8	69.6	0.8	69.2	69.9	0.7
R250(O200)	Residential	B	62.0	62.8	0.8	62.3	63.4	1.1
R224b(O12)	Multi-family	B	54.9	55.7	0.8	54.7	55.5	0.8
R251(O673)	Single Family	B	68.8	69.5	0.7	69.0	69.8	0.8
R252a(O118)	Multi-family	B	64.2	65.0	0.8	64.3	65.1	0.8
R253(O516)	Residential	B	47.9	48.7	0.8	48.2	49.2	1.0
R254(O409)	Residential	B	50.5	51.2	0.7	50.6	51.5	0.9
R255(O769)	Residential	B	74.4	75.2	0.8	74.9	75.7	0.8
R256(O1050)	Residential	B	69.3	69.3	0.0	70.2	70.0	-0.2
R257a(O75)	Multi-family	B	64.8	65.6	0.8	65.2	66.2	1.0
R258(O1061)	Residential	B	60.5	61.3	0.8	60.2	61.0	0.8
R259(O515)	Residential	B	57.7	58.6	0.9	57.5	58.4	0.9
R257b(O75)	Multi-family	B	64.4	65.2	0.8	64.8	65.8	1.0



Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

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R260(OV721)	Vacant-Commercial	E	63.9	64.6	0.7	64.7	65.5	0.8
R261(O806)	Residential	B	62.6	63.2	0.6	62.6	63.3	0.7
R262(O1042)	Residential	B	69.4	69.4	0.0	70.6	70.3	-0.3
R263(O158)	Residential	B	63.7	64.4	0.7	64.1	65.1	1.0
R264(O117)	Residential	B	57.2	58.0	0.8	57.2	58.0	0.8
R265(O464)	Residential	B	59.9	60.7	0.8	60.0	60.7	0.7
R266(O1016)	Residential	B	61.6	62.4	0.8	61.6	62.4	0.8
R268a(O360)	Residential	B	62.9	63.5	0.6	62.9	63.5	0.6
R267(O923)	Residential	B	61.9	62.7	0.8	62.0	62.8	0.8
R269(O419)	Residential	B	62.8	63.6	0.8	63.3	64.2	0.9
R270(O571)	Residential	B	73.4	74.2	0.8	73.8	74.5	0.7
R271(O1012)	Residential	B	65.4	66.1	0.7	65.5	66.2	0.7
R272(O607 R-8)	Office	E	69.8	70.4	0.6	69.4	70.0	0.6
R273(O113)	Residential	B	55.1	56.0	0.9	54.8	55.7	0.9
R252b(O118)	Multi-family	B	58.2	59.0	0.8	58.0	59.2	1.2
R274(O747)	Residential	B	58.0	58.8	0.8	57.9	58.6	0.7
R277(OV360)	Vacant-Residential	B	63.3	64.1	0.8	63.4	64.1	0.7
R275(O572)	Residential	B	58.9	59.7	0.8	58.9	59.7	0.8
R276(O226)	Residential	B	61.0	61.8	0.8	61.0	61.8	0.8
R278(O997)	Residential	B	59.9	60.6	0.7	60.0	60.6	0.6
R279(O542)	Residential	B	58.9	59.5	0.6	58.7	59.3	0.6
R280(O146)	Residential	B	61.8	62.1	0.3	62.4	62.6	0.2
R283(OV360)	Vacant-Residential	B	62.9	63.5	0.6	62.8	63.4	0.6
R281(O217)	Residential	B	46.8	47.6	0.8	46.9	47.9	1.0

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))	2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))
R282(O506)	Residential	B	58.7	59.2	0.5	58.6	59.1	0.5
R284(O890)	Residential	B	59.1	59.9	0.8	59.4	60.1	0.7
R285(O978)	Residential	B	63.9	64.7	0.8	64.2	65.0	0.8
R286(O352)	Residential	B	58.0	58.8	0.8	58.0	58.8	0.8
R287(O674)	Residential	B	65.3	66.1	0.8	65.7	66.4	0.7
R288(O785)	Residential	B	64.7	65.5	0.8	65.0	65.7	0.7
R289(O406)	Residential	B	69.2	69.0	-0.2	70.5	70.1	-0.4
R290(O416)	Residential	B	63.1	63.9	0.8	63.4	64.4	1.0
R291(O1011)	Residential	B	57.6	58.0	0.4	57.6	57.9	0.3
R292(O718)	Residential	B	58.6	59.3	0.7	58.4	59.0	0.6
R293(O752)	Residential	B	59.9	60.7	0.8	60.0	60.7	0.7
R294(O1031)	Residential	B	52.4	52.8	0.4	52.9	53.2	0.3
R268b(O360)	Recreational	C	63.0	63.6	0.6	63.0	63.6	0.6
R298(O999)	Residential	B	59.4	60.3	0.9	59.6	60.4	0.8
R299(O1055)	Residential	B	58.5	59.3	0.8	58.7	59.5	0.8
R300(O1054)	Residential	B	57.2	57.9	0.7	57.2	57.9	0.7
R301(O1052)	Office	E	54.3	55.0	0.7	54.2	54.9	0.7
R302(O1000)	Residential	B	57.4	58.2	0.8	57.5	58.6	1.1
R303(O97)	Office	E	66.4	65.2	-1.2	66.6	65.1	-1.5
R304(O1053)	Residential	B	56.3	57.1	0.8	56.0	56.8	0.8
R305(O998)	Residential	B	56.0	56.8	0.8	56.1	57.1	1.0
R306(O225)	Residential	B	62.5	63.2	0.7	62.6	63.4	0.8
R307(O298)	Residential	B	69.1	69.0	-0.1	70.4	69.9	-0.5
R308(OV155)	Vacant-Residential	B	62.2	62.8	0.6	62.6	63.0	0.4

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R309(O232)	Residential	B	46.6	47.1	0.5	47.0	47.4	0.4
R310(O856)	Residential	B	67.4	68.1	0.7	67.7	68.5	0.8
R311(O1026)	Residential	B	52.3	53.1	0.8	52.5	53.4	0.9
R312(O32)	Residential	B	57.9	58.6	0.7	58.0	58.7	0.7
R313(O888)	Residential	B	57.9	58.7	0.8	58.0	58.7	0.7
R314(O1022)	Residential	B	53.9	54.6	0.7	54.0	54.8	0.8
R315(O619)	Residential	B	53.5	53.6	0.1	54.6	54.5	-0.1
R316a(O1029)	Residential	B	56.1	56.9	0.8	56.1	56.9	0.8
R316b(O1029)	Recreational	C	57.0	57.8	0.8	56.8	57.5	0.7
R317(O833)	Residential	B	49.1	49.8	0.7	49.2	49.8	0.6
R318(O736)	Residential	B	59.6	60.4	0.8	59.2	60.1	0.9
R319(OP1052)	Recreational (Park)	C	63.5	64.3	0.8	63.6	64.5	0.9
R320(O567)	Residential	B	58.2	59.0	0.8	58.3	59.0	0.7
R321(O460)	Residential	B	49.4	50.1	0.7	49.4	50.0	0.6
R322(O670)	Residential	B	48.9	49.6	0.7	49.0	49.7	0.7
R323(O166)	Residential	B	49.0	49.7	0.7	49.2	49.8	0.6
R324(O889)	Residential	B	47.0	47.7	0.7	47.2	47.9	0.7
R325(O570)	Residential	B	50.9	51.7	0.8	50.3	51.0	0.7
R326(O265)	Residential	B	61.6	62.4	0.8	62.0	62.8	0.8
R327(O404)	Residential	B	62.1	62.7	0.6	62.0	62.7	0.7
R328(OV465)	Vacant-Residential	B	62.3	62.8	0.5	62.7	63.0	0.3
R329(O773)	Office	E	72.2	72.8	0.6	71.6	72.2	0.6
R330(O1036)	Residential	B	57.8	58.0	0.2	58.9	58.8	-0.1
R331(O28)	Recreational	C	63.3	64.2	0.9	63.4	64.3	0.9

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))	2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))
R332(OV833)	Vacant-Residential	B	55.0	55.8	0.8	55.0	55.8	0.8
R333(O164)	Residential	B	58.2	58.9	0.7	58.3	59.0	0.7
R334(O655 R-23)	Commercial	E	60.3	58.3	-2.0	61.6	59.4	-2.2
R335(O148)	Residential	B	62.6	62.9	0.3	63.4	63.5	0.1
R336(OV164)	Vacant-Residential	B	56.5	57.2	0.7	56.8	57.5	0.7
R337(O389 R-10)	Office	E	71.4	71.9	0.5	70.8	71.4	0.6
R338(O920)	Single Family	B	61.8	62.6	0.8	61.9	62.6	0.7
R339(O330)	Office	E	58.7	59.4	0.7	58.4	59.1	0.7
R340(O115)	Residential	B	57.8	58.4	0.6	57.9	58.5	0.6
R341(OP976)	Recreational (Park)	C	66.4	66.5	0.1	67.4	67.2	-0.2
R342(O318)	Residential	B	61.4	62.1	0.7	61.3	62.0	0.7
R343(O720)	Church	C	64.5	65.0	0.5	65.1	65.4	0.3
R344(O4)	Residential	B	59.3	60.0	0.7	59.4	60.0	0.6
R345(O236)	Residential	B	59.6	60.2	0.6	59.8	60.3	0.5
R346a(O451 R-30)	Commercial	E	63.3	63.1	-0.2	60.7	59.9	-0.8
R347(OV720)	Vacant-Residential	B	64.0	64.5	0.5	64.4	64.9	0.5
R348(O531)	Residential	B	56.0	56.7	0.7	56.2	57.0	0.8
R349(O772)	Residential	B	59.9	60.5	0.6	60.1	60.7	0.6
R350(O763)	Office	E	61.9	61.6	-0.3	61.6	61.3	-0.3
R351(OV58)	Vacant-Residential	B	62.2	62.9	0.7	62.4	63.1	0.7
R353a(O931 R-14)	Commercial	E	66.3	67.1	0.8	66.2	67.0	0.8
R352(O764)	Residential	B	60.5	61.2	0.7	60.8	61.4	0.6
R354(OV149)	Vacant-Residential	B	63.4	64.0	0.6	63.8	64.3	0.5
R355(O723)	Residential	B	57.8	58.4	0.6	57.8	58.3	0.5

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R356(O990)	Residential	B	59.9	60.6	0.7	60.1	60.6	0.5
R357(O992)	Residential	B	60.8	61.5	0.7	61.0	61.6	0.6
R358(O264)	Residential	B	55.7	56.5	0.8	56.2	56.9	0.7
R359(O284)	Office	E	66.0	66.7	0.7	66.2	66.9	0.7
R360(O618)	Residential	B	61.2	61.9	0.7	61.4	62.0	0.6
R361(O995)	Residential	B	60.9	61.6	0.7	61.2	61.8	0.6
R362(OV93)	Vacant-Commercial	E	73.2	73.7	0.5	74.1	74.5	0.4
R363(O993)	Residential	B	61.3	62.0	0.7	61.6	62.2	0.6
R364(O240)	Residential	B	57.0	57.8	0.8	57.4	58.2	0.8
R365(O994)	Residential	B	61.6	62.3	0.7	61.9	62.5	0.6
R366(O93 R-9)	Single Family	B	72.5	73.0	0.5	73.2	73.7	0.5
R367(O610)	Residential	B	64.1	64.8	0.7	64.2	65.0	0.8
R368(O1015)	Residential	B	61.2	61.9	0.7	61.3	61.9	0.6
R369(O991)	Residential	B	61.5	62.2	0.7	61.8	62.4	0.6
R370(OP535)	Recreational (Park)	C	67.6	68.1	0.5	67.4	67.9	0.5
R371(O729)	Residential	B	61.4	62.1	0.7	61.7	62.3	0.6
R372(OV248)	Vacant-Recreational	C	58.9	59.6	0.7	59.1	59.8	0.7
R373(OV946)	Vacant-Residential	B	66.4	65.4	-1.0	68.5	67.3	-1.2
R374(OV93)	Vacant-Commercial	E	70.0	70.6	0.6	70.9	71.4	0.5
R353b(O931 R-13)	Commercial	E	73.1	73.7	0.6	72.8	73.4	0.6
R375(O559)	Vacant-Commercial	E	69.0	69.6	0.6	69.4	70.0	0.6
R376(O493)	Residential	B	66.8	67.5	0.7	67.6	68.2	0.6
R377(O92)	Residential	B	70.3	70.9	0.6	71.1	71.7	0.6
R378(O637 R-21)	Office	E	64.3	64.0	-0.3	64.0	63.7	-0.3

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R379(O895)	Residential	B	72.4	72.9	0.5	73.3	73.8	0.5
R380(O602)	Residential	B	70.5	71.2	0.7	71.4	71.9	0.5
R381(O843)	Vacant-Recreational	C	57.7	58.5	0.8	58.1	58.8	0.7
R382(O755)	Office	E	68.4	69.1	0.7	68.0	68.7	0.7
R383(O41 R-19)	Commercial	E	66.1	66.5	0.4	65.7	66.0	0.3
R384(OV92)	Vacant-Residential	B	64.2	64.9	0.7	64.8	65.4	0.6
R385(O262)	Residential	B	69.0	69.4	0.4	69.5	69.9	0.4
R386(O984)	Multi-family	B	71.5	72.1	0.6	72.4	72.9	0.5
R387(O88)	Multi-family	B	63.0	63.6	0.6	63.4	64.0	0.6
M-6(O560)	Office	E	73.0	73.6	0.6	73.1	73.7	0.6
R389(O91)	Multi-family	B	65.4	65.8	0.4	65.7	66.1	0.4
R390(O90)	Multi-family	B	64.1	64.7	0.6	64.4	65.0	0.6
R391(O356)	Single Family	B	61.9	62.6	0.7	62.2	62.9	0.7
R392(O590)	Multi-family	B	62.2	62.9	0.7	62.6	63.2	0.6
R393(O355)	Single Family	B	61.4	62.2	0.8	61.8	62.5	0.7
R394(O357)	Multi-family	B	61.3	62.0	0.7	61.8	62.4	0.6
R395(O450)	Residential	B	67.0	67.7	0.7	67.3	68.0	0.7
R396(O453)	Residential	B	67.7	68.5	0.8	68.0	68.7	0.7
R397(O455)	Vacant-Residential	B	67.4	67.9	0.5	67.7	68.1	0.4
R398(O341)	Vacant-Residential	B	67.2	67.8	0.6	67.6	68.1	0.5
R399(OV455)	Vacant-Residential	B	67.1	67.5	0.4	67.4	67.8	0.4
R400(OV341)	Vacant-Residential	B	66.4	67.1	0.7	66.9	67.5	0.6
R401(OV450)	Vacant-Residential	B	65.7	66.4	0.7	66.0	66.7	0.7
R402(OV358)	Vacant-Recreational	C	54.2	54.9	0.7	54.3	54.9	0.6

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R403(O767)	Residential	B	64.0	63.6	-0.4	63.8	63.3	-0.5
R404(OV767)	Vacant-Residential	B	59.5	60.2	0.7	59.8	60.4	0.6
R405(O340)	Residential	B	60.1	58.5	-1.6	59.6	57.3	-2.3
R406(O244)	Residential	B	55.9	54.1	-1.8	55.4	52.8	-2.6
R407(O343)	School	C	69.2	69.9	0.7	69.8	70.5	0.7
R408(OP453)	Recreational (Park)	C	61.6	62.3	0.7	62.0	62.7	0.7
R409(O338)	Residential	B	61.1	59.8	-1.3	60.6	58.8	-1.8
R410(OP343)	Recreational (Park)	C	69.9	70.6	0.7	70.7	71.3	0.6
R411(OV338)	Vacant-Commercial	E	52.1	50.6	-1.5	51.6	49.6	-2.0
R412(O283 R-11)	Residential	B	70.7	71.3	0.6	71.4	71.9	0.5
M-4(O494)	Residential	B	67.3	68.1	0.8	67.9	68.6	0.7
R414(OV175)	Vacant-Residential	B	58.4	58.9	0.5	58.7	59.2	0.5
R415(O801)	Residential	B	63.9	64.6	0.7	64.6	65.3	0.7
R416(O554)	Office	E	65.1	63.0	-2.1	66.5	64.4	-2.1
R417(OV156)	Vacant-Residential	B	58.1	58.7	0.6	58.5	59.1	0.6
R418(O684)	Residential	B	59.1	59.9	0.8	59.8	60.5	0.7
R419(O633)	Multi-family	B	69.9	70.4	0.5	70.8	71.3	0.5
R420(O433)	Multi-family	B	69.3	69.9	0.6	70.1	70.7	0.6
R421(O748)	Multi-family	B	70.3	70.7	0.4	71.2	71.7	0.5
R422(O682)	Residential	B	69.0	68.5	-0.5	69.8	69.2	-0.6
R423(O282)	Residential	B	60.3	61.1	0.8	60.7	61.4	0.7
R424(O504)	Residential	B	60.7	61.3	0.6	61.2	61.7	0.5
R425(O854 R-15)	Multi-family	B	69.4	70.1	0.7	70.1	70.8	0.7
R426(O800)	Residential	B	56.7	57.5	0.8	57.3	58.0	0.7

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R427(O754)	Multi-family	B	61.6	62.3	0.7	62.5	63.1	0.6
R428(O831)	Multi-family	B	71.6	72.3	0.7	72.3	73.0	0.7
R429(O541)	Multi-family	B	62.7	63.5	0.8	63.8	64.5	0.7
R430(O227)	Multi-family	B	65.7	66.4	0.7	66.5	67.2	0.7
R431(O875)	Multi-family	B	74.3	75.0	0.7	74.3	75.0	0.7
R432(O336)	Multi-family	B	71.5	72.3	0.8	72.0	72.8	0.8
M-7(O819)	Multi-family	B	70.8	71.4	0.6	70.1	70.7	0.6
R434(O331)	Multi-family	B	71.2	72.0	0.8	71.7	72.4	0.7
R435(O600 R-12)	Residential	B	60.3	60.4	0.1	61.0	61.1	0.1
M-5(O683)	Multi-family	B	70.8	71.5	0.7	71.2	71.9	0.7
R437(O799)	Multi-family	B	70.3	71.1	0.8	70.6	71.3	0.7
R438(O821)	Multi-family	B	71.9	72.7	0.8	71.5	72.3	0.8
R439(O863)	Multi-family	B	63.6	63.8	0.2	63.8	64.1	0.3
R440(O881)	Multi-family	B	60.0	60.7	0.7	60.8	61.5	0.7
R441(O829)	Multi-family	B	59.1	59.9	0.8	60.1	60.8	0.7
R442(O820 R-17)	Multi-family	B	73.4	74.2	0.8	73.4	74.2	0.8
R443(O958)	Multi-family	B	56.8	57.6	0.8	57.2	58.0	0.8
R444(O864)	Multi-family	B	57.2	58.0	0.8	57.6	58.4	0.8
R445(O894)	Multi-family	B	57.2	58.0	0.8	57.8	58.6	0.8
R446(O255)	Multi-family	B	57.5	58.2	0.7	57.8	58.5	0.7
R346b(O451 R-26)	Commercial	E	65.0	63.0	-2.0	64.2	62.4	-1.8
R447(O359)	Multi-family	B	51.1	51.9	0.8	51.5	52.2	0.7
R448(O858)	Multi-family	B	70.6	71.4	0.8	70.3	71.1	0.8
R449(OP494)	Recreational (Park)	C	61.4	61.6	0.2	62.2	62.4	0.2



Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R450(O802)	Multi-family	B	54.8	55.5	0.7	54.9	55.5	0.6
R451(O922)	Multi-family	B	72.1	72.9	0.8	72.0	72.8	0.8
R452(O828)	Multi-family	B	62.3	62.3	0.0	62.4	62.5	0.1
R453(O979)	Multi-family	B	55.8	56.5	0.7	55.4	56.1	0.7
R454(O825 R-16)	Office	E	64.9	65.6	0.7	65.1	65.7	0.6
R455(O893)	Multi-family	B	52.5	53.2	0.7	52.7	53.4	0.7
R456(O891)	Multi-family	B	71.7	72.4	0.7	71.5	72.0	0.5
R457(O703)	Multi-family	B	59.9	60.6	0.7	60.1	60.7	0.6
R458(O957)	Residential	B	55.2	56.0	0.8	55.9	56.7	0.8
R459(O955)	Multi-family	B	51.6	52.4	0.8	52.0	52.7	0.7
R460(O986)	Residential	B	48.6	48.4	-0.2	48.7	48.4	-0.3
R461(O987)	Residential	B	54.8	55.1	0.3	55.2	55.5	0.3
R462(O892)	Multi-family	B	48.3	49.0	0.7	48.7	49.4	0.7
R463(O257)	Multi-family	B	55.2	56.0	0.8	54.9	55.6	0.7
R464(O256)	Multi-family	B	52.4	53.2	0.8	53.0	53.7	0.7
R465(O675 R-18)	Multi-family	B	69.5	70.3	0.8	69.0	69.6	0.6
R466(O897)	Office	E	54.4	55.0	0.6	55.0	55.6	0.6
R467(O956)	Multi-family	B	54.1	54.8	0.7	54.6	55.2	0.6
R468(O170)	Multi-family	B	57.5	58.1	0.6	57.7	58.2	0.5
R469(OP643)	Recreational (Park)	C	53.9	54.6	0.7	54.3	55.0	0.7
R470(O859)	Multi-family	B	61.9	62.7	0.8	61.2	62.0	0.8
R471(O925)	Multi-family	B	58.6	59.3	0.7	57.9	58.4	0.5
R472(O461)	Multi-family	B	52.9	53.7	0.8	52.4	53.1	0.7
M-8(O951)	Multi-family	B	70.3	71.1	0.8	69.9	70.6	0.7

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))	2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))
R474(O977)	Multi-family	B	55.6	56.3	0.7	55.2	55.9	0.7
R475(O844)	Multi-family	B	46.1	46.8	0.7	45.9	46.6	0.7
R476(O568)	Church	C	51.6	52.2	0.6	51.8	52.4	0.6
R477(O949)	Multi-family	B	53.3	54.0	0.7	52.9	53.7	0.8
R478(O950)	Multi-family	B	58.9	59.7	0.8	58.1	58.8	0.7
R479(O783)	Multi-family	B	51.1	51.6	0.5	50.8	51.3	0.5
R480(O860)	Multi-family	B	58.5	59.3	0.8	58.4	59.3	0.9
R481(O862)	Multi-family	B	45.9	46.7	0.8	45.9	46.7	0.8
R482(O770 R-24)	Office	E	68.8	69.6	0.8	68.6	69.4	0.8
R483(O948)	Multi-family	B	42.4	43.1	0.7	42.5	43.2	0.7
R484(O981)	Multi-family	B	43.7	44.4	0.7	43.8	44.5	0.7
R485(O462)	Restaurant/Bar	E	54.4	55.0	0.6	54.2	54.8	0.6
R486(O345)	Recreational	C	71.9	72.8	0.9	72.1	73.0	0.9
R487(O834)	Multi-family	B	56.2	57.0	0.8	56.0	56.8	0.8
R488(O429)	Recreational	C	63.6	64.5	0.9	63.3	64.2	0.9
R489(OP345)	Recreational (Park)	C	73.5	74.4	0.9	73.7	74.7	1.0
R490(O902)	Residential	B	51.1	49.9	-1.2	51.7	50.0	-1.7
R491(O667 R-20)	Residential	B	65.3	63.6	-1.7	66.1	63.9	-2.2
R492(O363)	Residential	B	65.4	63.9	-1.5	66.1	64.1	-2.0
R493(O73)	Residential	B	66.0	65.3	-0.7	66.6	65.5	-1.1
R494(O836)	Residential	B	50.2	49.2	-1.0	50.9	49.4	-1.5
R495(O576)	Residential	B	65.8	65.0	-0.8	66.4	65.2	-1.2
R496(O499)	Residential	B	65.5	64.2	-1.3	66.3	64.5	-1.8
R497(O500)	Residential	B	65.7	64.7	-1.0	66.4	65.0	-1.4

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R498(O501)	Residential	B	65.9	65.3	-0.6	66.4	65.5	-0.9
M-9(O578)	Residential	B	66.2	65.9	-0.3	66.7	66.0	-0.7
R500(O173)	Residential	B	66.3	65.8	-0.5	66.8	66.0	-0.8
R501(O903)	Residential	B	49.5	48.6	-0.9	50.0	48.7	-1.3
R502(O937)	Residential	B	48.9	48.2	-0.7	49.5	48.3	-1.2
R503(O44)	Office	E	76.1	77.0	0.9	76.8	77.6	0.8
R504(O845)	Residential	B	62.4	63.0	0.6	62.4	63.1	0.7
R505(O900 R-22)	Residential	B	62.1	62.8	0.7	62.2	62.9	0.7
R506(O362)	Residential	B	61.8	62.5	0.7	61.8	62.5	0.7
R507(O815)	Residential	B	61.0	61.8	0.8	61.1	61.9	0.8
R508(O908)	Residential	B	60.9	61.6	0.7	61.0	61.7	0.7
R509(O909)	Residential	B	60.9	61.7	0.8	61.0	61.7	0.7
R510(O910)	Residential	B	60.8	61.5	0.7	60.8	61.6	0.8
R511(O899)	Residential	B	60.6	61.4	0.8	60.7	61.4	0.7
R512(O144)	School	C	66.9	67.0	0.1	67.1	66.9	-0.2
R513(O911)	Residential	B	60.5	61.2	0.7	60.5	61.3	0.8
R514 (OP362)	Recreational (Park)	C	74.2	75.1	0.9	74.6	75.3	0.7
R514A (OP362)	Recreational (Park)	C	67.5	68.3	0.8	67.5	68.3	0.8
R514B (OP362)	Recreational (Park)	C	68.5	69.3	0.8	68.8	69.6	0.8
R514C(OP362)	Recreational (Park)	C	65.2	66	0.8	65.3	66.1	0.8
R514D(OP362)	Recreational (Park)	C	66	66.9	0.9	66.3	67.2	0.9
R515(O963)	Residential	B	60.3	61.1	0.8	60.4	61.2	0.8
R516(O778)	Residential	B	60.2	60.9	0.7	60.2	61.0	0.8
R517(O551)	Office	E	63.7	63.5	-0.2	63.5	63.1	-0.4

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))	2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))
R518(O191)	Office	E	61.4	60.1	-1.3	61.0	59.9	-1.1
R519(O373)	Residential	B	60.2	61.0	0.8	60.4	61.0	0.6
R520(O487)	Residential	B	55.9	56.6	0.7	55.9	56.6	0.7
R521(O271)	Residential	B	47.6	48.3	0.7	47.7	48.3	0.6
R522(O366)	Residential	B	53.8	54.6	0.8	53.7	54.5	0.8
R523(O86)	Residential	B	60.6	61.3	0.7	60.7	61.4	0.7
M-12(O604)	Office	E	66.5	64.9	-1.6	67.2	65.2	-2.0
R525(O695)	Residential	B	61.1	61.8	0.7	61.2	61.9	0.7
R526(O582)	Residential	B	60.3	61.1	0.8	60.4	61.1	0.7
R527(O488)	Residential	B	62.9	63.8	0.9	63.0	63.8	0.8
R528(O269)	Residential	B	63.6	64.5	0.9	63.7	64.5	0.8
R529(O368)	Residential	B	62.5	63.4	0.9	62.4	63.2	0.8
R530(O491)	Residential	B	52.2	52.5	0.3	53.5	53.4	-0.1
R531(O383)	Residential	B	52.9	53.0	0.1	54.7	54.3	-0.4
R532(O401)	Residential	B	55.9	56.0	0.1	57.7	57.3	-0.4
M-10(O490)	Residential	B	67.1	67.7	0.6	68.1	68.1	0.0
R534(O483)	Residential	B	53.4	54.1	0.7	54.0	54.5	0.5
R535(O456 R-27)	Office	E	61.8	61.9	0.1	61.6	61.6	0.0
R536(O179)	Residential	B	55.0	55.7	0.7	55.4	55.9	0.5
R537(O689)	Residential	B	56.7	57.4	0.7	56.9	57.5	0.6
R538(OP456)	Recreational (Park)	C	65.3	65.6	0.3	65.1	65.4	0.3
R539(O85)	Residential	B	55.0	55.7	0.7	55.3	55.8	0.5
R540(O478)	Residential	B	56.8	57.5	0.7	57.0	57.6	0.6
R541(O87)	Residential	B	53.6	54.1	0.5	54.3	54.4	0.1

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R542(O580)	Residential	B	52.3	52.6	0.3	53.7	53.5	-0.2
M-11(O151)	Office	E	68.6	69.1	0.5	68.4	69.0	0.6
R544(O80)	Residential	B	53.1	53.2	0.1	54.7	54.4	-0.3
R545(O281)	Residential	B	55.0	55.2	0.2	56.5	56.3	-0.2
R546(O189)	Residential	B	55.1	55.0	-0.1	57.5	56.8	-0.7
R547(O794)	Single Family	B	55.3	55.0	-0.3	59.2	58.1	-1.1
R548(O492)	Residential	B	56.8	56.7	-0.1	59.4	58.6	-0.8
R549(O484)	Residential	B	55.8	55.1	-0.7	60.3	58.8	-1.5
R550(O599)	Residential	B	59.2	59.2	0.0	61.8	61.1	-0.7
R551(O380 R-25)	Residential	B	63.1	63.4	0.3	65.0	64.6	-0.4
R552(O77)	Residential	B	57.7	56.9	-0.8	62.2	60.7	-1.5
R553(O536 R-32)	Office	E	61.3	60.3	-1.0	63.1	61.7	-1.4
R554(O67 R-28)	Office	E	64.9	65.4	0.5	64.0	64.6	0.6
R555(O566)	Office	E	59.4	59.7	0.3	59.4	59.5	0.1
R556(O467)	Office	E	60.8	61.1	0.3	58.5	58.9	0.4
R557(O707 R-29)	Church	C	55.1	55.5	0.4	56.5	56.7	0.2
R558(O398)	Office	E	65.5	65.8	0.3	61.4	61.8	0.4
R559(O399)	Residential	B	65.1	65.4	0.3	67.4	67.4	0.0
R560(O803 R-31)	Public Meeting Rooms	C	66.5	66.7	0.2	69.2	68.9	-0.3
M-15(O664)	Office	E	62.4	60.2	-2.2	62.4	59.6	-2.8
M-16(O756)	Residential	B	64.5	65.2	0.7	64.6	65.0	0.4
R563(O384)	Office	E	65.9	66.7	0.8	66.6	67.4	0.8
R564(O605)	Multi-family	B	67.3	68.0	0.7	63.8	64.5	0.7
R565(O198)	Office	E	66.8	67.5	0.7	62.9	63.6	0.7

**Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels**

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))	2010 Existing L <sub>eq</sub> (1-hr) dB(A)	2035 No Build L <sub>eq</sub> (1-hr) dB(A)	Difference (dB(A))
R566(O100)	Office	E	66.8	67.5	0.7	62.8	63.5	0.7
R567(O715)	Office	E	66.9	67.6	0.7	62.9	63.6	0.7
R568(O197)	Office	E	66.9	67.6	0.7	62.8	63.5	0.7
R569(O712)	Medical	C	66.6	67.3	0.7	62.5	63.2	0.7
R570(O391)	Restaurant/Bar	E	65.7	66.5	0.8	67.1	67.9	0.8
R571(O786)	Office	E	65.7	66.5	0.8	67.1	67.9	0.8
R572(O495)	Office	E	72.0	72.9	0.9	72.6	73.5	0.9
R573(O713)	Office	E	71.6	72.5	0.9	71.8	72.6	0.8
R574(O98)	Multi-family	B	65.8	66.7	0.9	67.7	68.5	0.8
R575(O606)	Residential/Commercial	B	55.0	55.8	0.8	55.8	56.7	0.9
R576(O152 R-35)	Commercial	E	70.8	70.9	0.1	71.4	71.5	0.1
R577(O233)	Office	E	70.8	71.7	0.9	71.5	72.5	1.0
R578(O95)	Residential/Commercial	B	52.2	53.2	1.0	53.5	54.5	1.0
R579(O396)	Office	E	53.4	54.1	0.7	51.6	52.4	0.8
R580(O397)	Office	E	65.0	65.9	0.9	68.2	69.1	0.9
R581(O288)	Office	E	49.1	50.0	0.9	50.1	51.1	1.0
M-14(O664)	Office	E	70.0	70.9	0.9	69.7	70.5	0.8
R582(O194)	Office	E	51.3	52.1	0.8	50.8	51.6	0.8
R583(O291 R-34)	Office	E	60.9	61.7	0.8	63.2	64.0	0.8
R584(O496 R-33)	Office	E	69.0	69.7	0.7	68.9	69.7	0.8
R585(O676)	Office	E	51.0	51.8	0.8	50.8	51.6	0.8
R586(O99)	Office	E	61.0	61.9	0.9	64.6	65.5	0.9
R587(O714)	Multi-family	B	60.3	61.2	0.9	64.2	65.1	0.9
R588(O466)	Office	E	65.0	66.0	1.0	64.8	65.6	0.8

Table 5. Predicted Peak Hour 2035 Future No Build Noise Levels

Receptor Number	Land Use	NAC Category	AM			PM		
			2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))	2010 Existing $L_{eq}$ (1-hr) dB(A)	2035 No Build $L_{eq}$ (1-hr) dB(A)	Difference (dB(A))
R589(O677)	Office	E	65.5	66.4	0.9	65.1	65.9	0.8
R590(O502)	Office	E	47.9	48.8	0.9	49.0	50.0	1.0
R591(O267)	Office	E	71.0	71.9	0.9	70.8	71.7	0.9
R592(O870)	Office	E	51.1	52.0	0.9	51.2	52.0	0.8
R593(O193)	Residential/Commercial	B	62.4	63.4	1.0	67.2	68.1	0.9
R594(O711)	Office	E	62.8	63.8	1.0	67.6	68.6	1.0
R595(O393)	Office	E	58.6	59.6	1.0	63.1	64.1	1.0
R596(OP603)	Recreational (Bengals Practice Field)	C	66.8	67.7	0.9	66.5	67.3	0.8
R597(O266)	Office	E	62.5	63.5	1.0	67.3	68.3	1.0
R598(O710)	Office	E	61.6	62.6	1.0	66.5	67.4	0.9
R599(O195)	Office	E	70.1	71.0	0.9	71.0	71.8	0.8
R600(O94)	Residential	B	62.0	62.9	0.9	62.4	63.2	0.8
R601(O388)	Residential	B	60.0	60.8	0.8	61.6	62.3	0.7
R602(O390)	Residential	B	55.3	56.1	0.8	56.7	57.6	0.9
R603a(O387)	Residential	B	43.5	44.3	0.8	43.7	44.5	0.8
R603b(O387)	Residential	B	55.3	56.2	0.9	55.8	56.7	0.9
R604(O787)	Residential	B	58.2	59.0	0.8	58.2	58.9	0.7
R605(O716)	Office	E	73.8	74.7	0.9	74.3	75.2	0.9
M-13(O292)	Office	E	70.8	71.7	0.9	70.9	72.1	1.2
R607(O290 R-36)	Recreational (Paul Brown Stadium)	C	66.1	67.0	0.9	65.4	66.2	0.8
R608(OP290)	Recreational (Paul Brown Stadium)	C	70.1	70.9	0.8	69.2	70.0	0.8

**Table 6. Summary of Impacts by FHWA Activity Category<sup>1</sup>**

Alternative	NAC A		NAC B		NAC C		NAC D		NAC E		NAC G		Totals	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing (2010)	0	0	175 (484)	183 (490)	23 (174)	22 (175)	0	0	36 (18)	39 (20)	0	0	234 (676)	244 (685)
2035 No Build	0	0	178 (501)	187 (501)	25 (190)	24 (191)	0	0	38 (18)	41 (20)	0	0	241 (709)	252 (712)
Alternative E	0	0	195 (537)	204 (551)	29 (238)	28 (238)	1(24)	1(24)	42 (19)	45 (20)	0	0	267 (818)	278 (833)
Alternative I	0	0	201 (543)	210 (562)	28 (238)	27 (238)	1(24)	1(24)	39 (19)	45 (20)	0	0	269 (824)	283 (844)

<sup>1</sup> Numbers not in parenthesis represent the total number of receivers with impacts for each FHWA Activity Category evaluated for each alternative. Numbers shown in parenthesis represent the total impacted number of equivalent receptors for each FHWA Activity Category for each alternative.



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Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R1(O212)	Multi-family	59.0	59.8	59.9	0.9	0.1	59.1	60.3	60.5	1.4	0.2	No
R2(O210)	Multi-family	58.9	59.8	59.7	0.8	-0.1	59.0	60.2	60.2	1.2	0.0	No
R3(O623)	Residential	57.0	57.9	56.9	-0.1	-1.0	57.2	58.4	57.5	0.3	-0.9	No
R4(O110)	Multi-family	61.0	61.8	61.7	0.7	-0.1	61.2	62.4	62.4	1.2	0.0	No
R5(O322)	Single Family	61.7	62.5	62.1	0.4	-0.4	61.7	63.0	62.7	1.0	-0.3	No
R6(O37)	Single Family	61.4	62.3	62.0	0.6	-0.3	61.5	62.7	62.6	1.1	-0.1	No
R7(O725)	School	70.6	71.5	71.7	1.1	0.2	70.5	71.7	72.0	1.5	0.3	Yes
R8(O411)	Single Family	64.5	65.3	64.9	0.4	-0.4	64.5	65.8	65.5	1.0	-0.3	No
R9(O324)	Multi-family	67.4	68.3	67.2	-0.2	-1.1	67.4	68.7	67.5	0.1	-1.2	Yes
R10(O740)	Single Family	69.4	70.3	69.4	0.0	-0.9	69.0	70.4	69.6	0.6	-0.8	Yes
R11(O17)	Church	67.3	68.2	68.4	1.1	0.2	66.6	68.1	68.7	2.1	0.6	Yes
R12(O13)	Multi-family	57.9	58.7	57.3	-0.6	-1.4	57.9	58.9	57.7	-0.2	-1.2	No
R13(O125)	Daycare	68.9	69.8	69.0	0.1	-0.8	68.0	69.6	69.3	1.3	-0.3	Yes
R14a(O438)	Residential	69.0	69.9	69.4	0.4	-0.5	68.1	69.7	69.6	1.5	-0.1	Yes
R15(O221)	Single Family	70.0	70.8	69.7	-0.3	-1.1	69.7	71.0	69.9	0.2	-1.1	Yes
R16(O101)	Single Family	70.6	71.4	70.4	-0.2	-1.0	70.4	71.4	70.8	0.4	-0.6	Yes
R17(O313)	Office	65.2	65.6	64.7	-0.5	-0.9	65.3	65.9	65.5	0.2	-0.4	No
R18(O734)	Multi-family	71.1	72.0	70.5	-0.6	-1.5	70.8	72.2	70.6	-0.2	-1.6	Yes
R19(O427)	Recreational	75.5	76.3	74.7	-0.8	-1.6	74.8	76.2	74.8	0.0	-1.4	Yes
R14b(O438)	Recreational	70.3	71.2	66.8	-3.5	-4.4	69.4	71.1	66.9	-2.5	-4.2	Yes
R20(O615)	Office	65.2	65.3	65.1	-0.1	-0.2	65.4	65.7	66.1	0.7	0.4	Yes
R21(O421)	Single Family	71.7	72.6	69.1	-2.6	-3.5	70.7	72.2	68.8	-1.9	-3.4	Yes
R23(O8)	Multi-family	66.6	67.1	66.3	-0.3	-0.8	66.3	66.9	66.8	0.5	-0.1	Yes
R24(O109)	Multi-family	67.7	68.5	67.0	-0.7	-1.5	67.1	68.2	67.1	0.0	-1.1	Yes
M-1(O314)	Multi-family	70.8	71.6	69.7	-1.1	-1.9	70.2	71.4	69.7	-0.5	-1.7	Yes
R26(O214)	Multi-family	68.8	69.7	67.9	-0.9	-1.8	68.2	69.4	67.9	-0.3	-1.5	Yes
R27(OP422)	Park	66.1	66.6	66.7	0.6	0.1	65.9	66.4	67.1	1.2	0.7	Yes
R28(O613)	Office	73.7	74.6	73.8	0.1	-0.8	72.9	74.0	73.9	1.0	-0.1	Yes
R29(O414)	Office	74.1	74.9	74.2	0.1	-0.7	73.5	74.3	74.5	1.0	0.2	Yes
R30(O422)	Office	71.2	71.0	72.8	1.6	1.8	71.2	70.7	73.5	2.3	2.8	Yes
R31(O124 R-1)	Multi-family	70.4	69.9	71.8	1.4	1.9	70.3	69.4	72.6	2.3	3.2	Yes
R32(O317)	Restaurant/Bar	74.9	75.7	77.3	2.4	1.6	73.8	74.6	77.4	3.6	2.8	Yes
R33(O1021)	Residential	75.6	76.2	75.8	0.2	-0.4	76.5	77.2	76.9	0.4	-0.3	Yes
R34(O1028)	Residential	75.2	75.7	75.2	0.0	-0.5	76.1	76.6	76.2	0.1	-0.4	Yes
R35(O1014)	Office	75.3	75.7	75.2	-0.1	-0.5	76.3	76.7	76.3	0.0	-0.4	Yes

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R36(O1025)	Residential	73.2	73.7	73.2	0.0	-0.5	74.0	74.5	74.1	0.1	-0.4	Yes
R37(O16 R-2)	Commercial	70.2	70.3	70.0	-0.2	-0.3	69.5	69.4	70.1	0.6	0.7	Yes
R38(O1)	Office	73.7	74.1	74.8	1.1	0.7	74.8	75.2	75.9	1.1	0.7	Yes
R39(O1044)	Residential	71.6	72.3	71.8	0.2	-0.5	71.9	72.9	72.4	0.5	-0.5	Yes
R40(O1017)	Residential	71.2	71.9	71.5	0.3	-0.4	71.4	72.4	72.0	0.6	-0.4	Yes
M-2(O415)	Office	71.0	70.6	70.8	-0.2	0.2	72.8	72.1	72.8	0.0	0.7	Yes
R42(O21)	Office	77.1	78.0	78.2	1.1	0.2	77.8	78.8	79.0	1.2	0.2	Yes
R43(O1007)	Office	69.3	69.0	69.0	-0.3	0.0	70.9	70.3	70.8	-0.1	0.5	Yes
R44(O620)	Office	71.4	71.0	71.2	-0.2	0.2	73.2	72.5	73.2	0.0	0.7	Yes
R45(O1018)	Residential	68.8	69.6	68.6	-0.2	-1.0	68.9	69.9	68.9	0.0	-1.0	Yes
R46(O76)	Office	74.6	75.2	74.8	0.2	-0.4	75.3	76.0	75.8	0.5	-0.2	Yes
R47(O1046)	Residential	68.6	69.4	69.0	0.4	-0.4	68.7	69.8	69.3	0.6	-0.5	Yes
R48(OV730)	Vacant-Residential	67.3	68.0	67.7	0.4	-0.3	67.5	68.5	68.2	0.7	-0.3	Yes
R49(O505)	Office	71.7	71.7	72.2	0.5	0.5	71.7	71.2	72.7	1.0	1.5	Yes
R50(O1024)	Residential	66.7	67.3	67.6	0.9	0.3	67.0	67.7	68.1	1.1	0.4	Yes
R51(O417)	Residential	67.3	67.9	67.9	0.6	0.0	67.6	68.3	68.4	0.8	0.1	Yes
R52(O1019)	Residential	68.6	69.3	68.5	-0.1	-0.8	68.7	69.7	68.9	0.2	-0.8	Yes
R53(O119)	Office	70.8	70.3	71.5	0.7	1.2	72.5	72.3	72.6	0.1	0.3	Yes
R54(O49)	Office	66.5	67.1	67.0	0.5	-0.1	66.2	66.7	67.1	0.9	0.4	Yes
R55(O108)	Office	69.9	70.2	70.3	0.4	0.1	69.9	69.8	70.6	0.7	0.8	Yes
R56(O1043)	Residential	64.1	64.9	64.9	0.8	0.0	64.6	65.6	65.6	1.0	0.0	No
R57(O237 R-3)	Office	69.6	69.8	70.1	0.5	0.3	69.6	69.6	70.5	0.9	0.9	Yes
R58(O1004)	Residential	66.1	66.9	66.3	0.2	-0.6	66.2	67.3	66.8	0.6	-0.5	Yes
R59(O1037)	Residential	69.5	70.3	70.0	0.5	-0.3	69.7	70.8	70.6	0.9	-0.2	Yes
R60(OV119)	Vacant-Commercial	69.8	69.4	69.9	0.1	0.5	71.5	70.9	71.5	0.0	0.6	Yes
R61(O426)	Residential	71.1	70.6	N/A	N/A	N/A	72.9	72.3	N/A	N/A	N/A	N/A
R62(O527)	Residential	70.8	70.2	70.6	-0.2	0.4	72.7	71.9	72.6	-0.1	0.7	Yes
R63(O316)	Residential	71.1	70.7	N/A	N/A	N/A	72.9	72.3	N/A	N/A	N/A	N/A
R64(O425)	Single Family	71.1	70.9	71.3	0.2	0.4	72.8	72.3	73.0	0.2	0.7	Yes
R65(O219)	Residential	70.8	70.3	N/A	N/A	N/A	72.6	71.9	N/A	N/A	N/A	N/A
R66(O548 R-4)	Commercial	72.1	72.5	72.4	0.3	-0.1	71.9	72.1	72.7	0.8	0.6	Yes
R67(O1013)	Residential	72.2	72.9	72.4	0.2	-0.5	72.9	73.7	73.3	0.4	-0.4	Yes
R68(O220)	Residential	70.6	70.3	N/A	N/A	N/A	72.3	71.7	N/A	N/A	N/A	N/A
R69(O423)	Residential	68.8	68.6	68.6	-0.2	0.0	70.3	69.9	70.2	-0.1	0.3	Yes
R70(OV1048)	Vacant-Residential	73.6	74.1	74.3	0.7	0.2	74.3	75.0	75.2	0.9	0.2	Yes

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R71(O22)	Office	66.1	66.3	66.0	-0.1	-0.3	67.0	66.9	67.1	0.1	0.2	Yes
R72(O1030)	Residential	69.8	70.4	70.1	0.3	-0.3	70.4	71.2	71.0	0.6	-0.2	Yes
R73(OV563)	Vacant-Residential	73.3	73.9	74.2	0.9	0.3	74.2	74.8	75.2	1.0	0.4	Yes
R74(O1048)	Residential	73.6	74.2	74.2	0.6	0.0	74.3	75.0	75.2	0.9	0.2	Yes
R75(O1033)	Single Family	72.3	72.9	73.0	0.7	0.1	72.9	73.7	73.9	1.0	0.2	Yes
R76(O353)	Residential	73.3	73.8	74.2	0.9	0.4	74.1	74.7	75.1	1.0	0.4	Yes
R77(O1035)	Residential	64.1	64.9	64.2	0.1	-0.7	64.1	64.9	64.4	0.3	-0.5	No
R78(OP169)	Park	71.7	72.4	72.3	0.6	-0.1	72.5	73.1	72.9	0.4	-0.2	Yes
R79(OV353)	Vacant-Residential	71.8	72.2	73.5	1.7	1.3	72.8	73.3	74.5	1.7	1.2	Yes
R80(OV777)	Vacant-Commercial	73.5	74.2	73.9	0.4	-0.3	74.6	75.2	74.6	0.0	-0.6	Yes
R81a(O666)	Multi-family	67.5	68.3	68.3	0.8	0.0	67.6	68.7	68.8	1.2	0.1	Yes
R81b(O666)	Multi-family	66.5	67.3	67.3	0.8	0.0	66.7	67.8	68.0	1.3	0.2	Yes
R82a(O102)	Multi-family	60.8	61.6	60.6	-0.2	-1.0	61.0	61.9	60.9	-0.1	-1.0	No
R83(O204)	Residential	68.4	69.2	69.0	0.6	-0.2	68.5	69.7	69.5	1.0	-0.2	Yes
R85a(O315)	Multi-family	60.9	61.7	61.9	1.0	0.2	61.2	62.1	62.4	1.2	0.3	No
R84(O261)	Residential	68.6	69.4	69.2	0.6	-0.2	68.7	69.8	69.7	1.0	-0.1	Yes
R86(O169)	Office	68.9	69.5	69.3	0.4	-0.2	69.4	70.0	70.0	0.6	0.0	Yes
R88(OV565)	Vacant-Commercial	74.2	74.9	73.5	-0.7	-1.4	74.7	75.4	74.1	-0.6	-1.3	Yes
R87(O519)	Residential	68.2	68.9	68.3	0.1	-0.6	68.6	69.6	69.1	0.5	-0.5	Yes
R89(O512)	Office	61.7	62.0	67.5	5.8	5.5	61.7	62.1	67.7	6.0	5.6	Yes
R92(OV1003)	Vacant-Residential	69.7	69.8	N/A	N/A	N/A	70.9	70.6	N/A	N/A	N/A	N/A
R90(OV204)	Vacant-Residential	67.2	68.0	68.0	0.8	0.0	67.3	68.5	68.4	1.1	-0.1	Yes
R91(OV666)	Vacant-Residential	67.0	67.8	68.0	1.0	0.2	67.0	68.2	68.4	1.4	0.2	Yes
R93(OV565)	Vacant-Commercial	74.3	75.1	74.6	0.3	-0.5	75.2	75.9	75.5	0.3	-0.4	Yes
R94(OV565)	Vacant-Commercial	73.8	74.6	73.5	-0.3	-1.1	74.4	75.2	74.2	-0.2	-1.0	Yes
R82b(O102)	Multi-family	60.8	61.5	60.2	-0.6	-1.3	61.1	61.9	60.4	-0.7	-1.5	No
R95(O2)	Residential	68.8	69.6	69.3	0.5	-0.3	69.0	70.1	69.8	0.8	-0.3	Yes
R96(O1039)	Residential	64.5	65.2	64.2	-0.3	-1.0	64.4	65.1	64.5	0.1	-0.6	No
R97(OV565)	Vacant-Commercial	73.4	74.2	73.5	0.1	-0.7	74.0	74.8	74.1	0.1	-0.7	Yes
R98(OV1003)	Vacant-Residential	69.8	69.8	N/A	N/A	N/A	70.7	70.5	N/A	N/A	N/A	N/A
R85b(O315)	Multi-family	62.4	63.2	63.0	0.6	-0.2	62.7	63.8	63.6	0.9	-0.2	No
R99(O514)	Residential	60.8	61.6	60.5	-0.3	-1.1	61.2	61.9	60.8	-0.4	-1.1	No
R100(O402)	Residential	63.2	63.8	63.3	0.1	-0.5	63.2	63.7	63.9	0.7	0.2	No
R101(O311)	Residential	61.7	62.3	61.4	-0.3	-0.9	61.8	62.4	61.8	0.0	-0.6	No
R102(O507)	Residential	62.7	63.4	62.3	-0.4	-1.1	62.7	63.4	62.7	0.0	-0.7	No

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R103(O733)	Residential	63.7	64.4	63.4	-0.3	-1.0	63.7	64.4	63.6	-0.1	-0.8	No
R104(O128)	Residential	69.3	70.1	69.7	0.4	-0.4	69.5	70.6	70.2	0.7	-0.4	Yes
R105(O207)	Residential	62.2	63.0	62.0	-0.2	-1.0	62.3	63.1	62.3	0.0	-0.8	No
R106(O297)	Residential	69.8	70.6	70.1	0.3	-0.5	70.0	71.1	70.7	0.7	-0.4	Yes
R107(O745)	Office	69.4	69.9	N/A	N/A	N/A	70.1	70.5	N/A	N/A	N/A	N/A
R108(O205)	Residential	63.2	64.0	63.4	0.2	-0.6	63.2	64.0	63.6	0.4	-0.4	No
R109(O11)	Residential	63.9	64.7	64.1	0.2	-0.6	63.9	64.7	64.3	0.4	-0.4	No
R110(O739)	Residential	63.5	64.3	62.9	-0.6	-1.4	63.5	64.2	63.2	-0.3	-1.0	No
R112(OV72)	Vacant-Residential	73.3	74.0	73.3	0.0	-0.7	73.8	74.5	73.9	0.1	-0.6	Yes
R111(O7)	Residential	58.0	58.9	59.2	1.2	0.3	58.0	59.2	59.8	1.8	0.6	No
R113(O24)	Residential	64.4	65.2	64.5	0.1	-0.7	64.4	65.2	64.7	0.3	-0.5	No
R114(OV1049)	Vacant-Residential	64.1	64.9	63.8	-0.3	-1.1	64.1	64.9	64.1	0.0	-0.8	No
R115(OV25)	Vacant-Residential	62.1	62.7	66.2	4.1	3.5	62.5	63.0	65.6	3.1	2.6	Yes
R116(OV72)	Vacant-Residential	72.9	73.6	73.0	0.1	-0.6	73.3	74.1	73.6	0.3	-0.5	Yes
R117(O222)	Residential	71.5	72.2	71.4	-0.1	-0.8	71.9	72.7	72.0	0.1	-0.7	Yes
R122(OV1051)	Vacant-Residential	69.9	69.7	N/A	N/A	N/A	71.2	70.7	N/A	N/A	N/A	N/A
R118(O775)	Residential	70.7	71.2	71.7	1.0	0.5	71.3	72.0	72.6	1.3	0.6	Yes
R119(O304)	Residential	68.8	69.6	69.1	0.3	-0.5	69.1	70.2	69.8	0.7	-0.4	Yes
R120(OV1039)	Vacant-Residential	62.9	63.6	62.2	-0.7	-1.4	62.7	63.5	62.4	-0.3	-1.1	No
R121(OV733)	Vacant-Residential	61.5	62.2	61.2	-0.3	-1.0	61.4	62.1	61.6	0.2	-0.5	No
R123(O253)	Residential	70.2	70.7	71.2	1.0	0.5	70.8	71.5	72.1	1.3	0.6	Yes
R124(O20)	Residential	69.5	70.2	70.7	1.2	0.5	70.2	71.0	71.5	1.3	0.5	Yes
R125(O10)	Residential	68.6	69.4	69.1	0.5	-0.3	68.8	69.9	69.7	0.9	-0.2	Yes
R126(O1001)	Residential	70.1	70.4	N/A	N/A	N/A	70.8	70.9	N/A	N/A	N/A	N/A
R127(O418)	Residential	68.5	69.2	69.7	1.2	0.5	69.2	70.0	70.5	1.3	0.5	Yes
R128(O72)	Residential	72.2	73.0	72.6	0.4	-0.4	72.6	73.3	73.3	0.7	0.0	Yes
R129(OV10)	Vacant-Residential	69.2	70.0	69.6	0.4	-0.4	69.5	70.6	70.2	0.7	-0.4	Yes
R130(OV434)	Vacant-Residential	70.5	71.3	70.5	0.0	-0.8	70.9	71.7	71.1	0.2	-0.6	Yes
R133(OV1051)	Vacant-Residential	69.8	69.5	N/A	N/A	N/A	71.2	70.7	N/A	N/A	N/A	N/A
R131(O199)	Residential	68.5	69.3	68.8	0.3	-0.5	68.9	69.9	69.5	0.6	-0.4	Yes
R132(OV704)	Vacant-Commercial	77.9	78.7	76.4	-1.5	-2.3	78.7	79.4	77.1	-1.6	-2.3	Yes
R134(O428)	Residential	67.7	68.4	69.0	1.3	0.6	68.3	69.2	69.8	1.5	0.6	Yes
R135(O1003)	Residential	69.2	69.7	N/A	N/A	N/A	69.7	70.1	N/A	N/A	N/A	N/A
R136(OV10)	Vacant-Residential	68.3	69.1	68.9	0.6	-0.2	68.5	69.6	69.5	1.0	-0.1	Yes
R137(O206)	Multi-family	60.1	60.7	65.0	4.9	4.3	60.0	60.6	64.1	4.1	3.5	No

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R138(O413)	Residential	55.2	55.8	54.9	-0.3	-0.9	55.2	55.7	55.1	-0.1	-0.6	No
R139(O202)	Residential	66.2	66.9	67.8	1.6	0.9	66.9	67.7	68.7	1.8	1.0	Yes
R140(O38)	Residential	65.6	66.3	66.6	1.0	0.3	66.0	67.0	67.4	1.4	0.4	Yes
R141(O403)	Residential	67.8	68.6	68.1	0.3	-0.5	68.2	69.2	68.8	0.6	-0.4	Yes
R142(O300)	Residential	65.6	66.3	66.6	1.0	0.3	66.1	67.0	67.4	1.3	0.4	Yes
R143(O306)	Residential	56.9	57.7	57.9	1.0	0.2	56.9	58.1	58.4	1.5	0.3	No
R144(O511)	Residential	68.1	68.9	68.3	0.2	-0.6	68.5	69.5	69.1	0.6	-0.4	Yes
R145(O412)	Residential	67.4	68.2	67.9	0.5	-0.3	67.8	68.9	68.6	0.8	-0.3	Yes
R146(O434)	Residential	68.7	69.5	69.5	0.8	0.0	69.1	69.8	70.1	1.0	0.3	Yes
R147(OV260)	Vacant-Residential	59.7	60.5	60.2	0.5	-0.3	60.0	61.1	60.8	0.8	-0.3	No
R148(O42)	Residential	68.6	69.1	N/A	N/A	N/A	69.0	69.4	N/A	N/A	N/A	N/A
R149(O727)	Residential	69.6	69.9	N/A	N/A	N/A	70.2	70.3	N/A	N/A	N/A	N/A
R150(O647)	Residential	64.3	64.9	63.9	-0.4	-1.0	64.8	65.3	64.6	-0.2	-0.7	No
R151(OV428)	Vacant-Residential	66.4	67.1	68.2	1.8	1.1	67.0	67.9	69.0	2.0	1.1	Yes
R152(O229)	Residential	67.8	68.6	68.6	0.8	0.0	68.2	68.9	69.2	1.0	0.3	Yes
M-3(O70)	Residential	76.9	77.7	77.9	1.0	0.2	77.5	78.2	78.6	1.1	0.4	Yes
R154(O328)	Residential	64.4	65.2	65.6	1.2	0.4	64.6	65.4	66.3	1.7	0.9	Yes
R155(OV328)	Vacant-Commercial	52.6	52.7	54.0	1.4	1.3	53.4	53.2	54.5	1.1	1.3	No
R156(O43)	Residential	66.7	67.4	67.4	0.7	0.0	67.0	67.7	68.0	1.0	0.3	Yes
R157(O116)	Residential	69.2	69.5	N/A	N/A	N/A	69.8	69.9	N/A	N/A	N/A	N/A
R158(O103)	Residential	67.2	67.9	N/A	N/A	N/A	67.6	68.2	N/A	N/A	N/A	N/A
R159(OV38)	Vacant-Residential	66.0	66.8	67.2	1.2	0.4	66.4	67.5	67.8	1.4	0.3	Yes
R160(O1049)	Single Family	62.6	63.5	62.6	0.0	-0.9	62.4	63.4	62.9	0.5	-0.5	No
R161(OV1051)	Vacant-Residential	70.3	70.2	N/A	N/A	N/A	71.4	71.1	N/A	N/A	N/A	N/A
R162(O1005)	Residential	66.8	67.5	N/A	N/A	N/A	67.1	67.8	N/A	N/A	N/A	N/A
R163(O1008)	Residential	67.1	67.7	N/A	N/A	N/A	67.5	67.9	N/A	N/A	N/A	N/A
R164(O260)	Single Family	46.7	47.4	46.5	-0.2	-0.9	47.0	47.9	47.0	0.0	-0.9	No
R165(O768)	Office	68.1	67.5	69.4	1.3	1.9	68.6	67.7	70.0	1.4	2.3	Yes
R166(O463)	Residential	75.2	76.0	76.0	0.8	0.0	75.7	76.4	76.6	0.9	0.2	Yes
R167(O766)	Office	63.3	63.8	65.1	1.8	1.3	63.6	64.1	65.4	1.8	1.3	No
R168(O750)	Residential	65.8	66.6	66.5	0.7	-0.1	66.1	66.8	67.1	1.0	0.3	Yes
R169(O213)	Residential	52.1	52.9	52.3	0.2	-0.6	52.1	53.3	52.5	0.4	-0.8	No
R170(O107)	Office	65.3	66.0	66.0	0.7	0.0	65.6	66.3	66.5	0.9	0.2	Yes
R171(O653 R-6)	Commercial	71.7	72.2	72.1	0.4	-0.1	70.8	71.5	71.6	0.8	0.1	Yes
R172(O134)	Residential	64.6	65.4	65.4	0.8	0.0	64.9	65.6	66.0	1.1	0.4	Yes

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R173(O443 R-5)	Residential	65.2	65.6	64.9	-0.3	-0.7	65.9	66.0	65.6	-0.3	-0.4	No
R174(O671)	Residential	74.7	75.5	75.5	0.8	0.0	75.1	75.9	76.1	1.0	0.2	Yes
R175(O617)	Office	62.6	63.3	64.3	1.7	1.0	63.1	63.8	64.6	1.5	0.8	No
R176(O1010)	Residential	64.9	65.7	70.6	5.7	4.9	65.0	65.7	72.1	7.1	6.4	Yes
R177(O672)	Residential	73.9	74.7	74.7	0.8	0.0	74.3	75.1	75.2	0.9	0.1	Yes
R178(O784)	Residential	70.5	71.3	71.2	0.7	-0.1	70.8	71.6	71.6	0.8	0.0	Yes
R179(O760)	Residential	63.9	64.7	64.8	0.9	0.1	64.1	64.9	65.4	1.3	0.5	No
R180(O1009)	Residential	67.9	68.7	70.1	2.2	1.4	68.2	69.0	70.5	2.3	1.5	Yes
R181(O644)	Residential	75.6	76.4	76.5	0.9	0.1	76.1	76.8	77.0	0.9	0.2	Yes
R182(O1020)	Residential	66.2	67.0	68.7	2.5	1.7	66.2	67.0	68.0	1.8	1.0	Yes
R183(O447)	Office	71.5	72.1	71.9	0.4	-0.2	70.7	71.4	71.4	0.7	0.0	Yes
R184(O129)	Residential	67.6	68.4	69.6	2.0	1.2	67.8	68.6	70.1	2.3	1.5	Yes
R185(O627)	Vacant-Commercial	64.9	65.7	71.7	6.8	6.0	65.0	65.9	73.4	8.4	7.5	Yes
R186(O762)	Residential	63.2	64.0	64.1	0.9	0.1	63.3	64.1	64.7	1.4	0.6	No
R187(OV436)	Vacant-Commercial	78.2	79.0	77.0	-1.2	-2.0	79.0	79.7	78.0	-1.0	-1.7	Yes
R188(O167)	Residential	71.5	72.3	72.2	0.7	-0.1	71.8	72.6	72.7	0.9	0.1	Yes
R189(O111)	Multi-family	58.4	59.2	58.3	-0.1	-0.9	58.2	59.2	58.5	0.3	-0.7	No
R190(O804)	Residential	67.6	68.4	69.6	2.0	1.2	67.8	68.6	69.7	1.9	1.1	Yes
R191(O1045)	Residential	51.7	52.4	51.9	0.2	-0.5	51.9	52.8	52.1	0.2	-0.7	No
R192(OV407)	Vacant-Residential	59.3	60.1	61.3	2.0	1.2	59.2	60.4	61.3	2.1	0.9	No
R193(O168)	Residential	70.4	71.2	71.2	0.8	0.0	70.7	71.5	71.6	0.9	0.1	Yes
R194(O1038)	Residential	66.4	67.1	67.8	1.4	0.7	66.3	67.1	67.6	1.3	0.5	Yes
R195(O1006)	Single Family	66.7	67.0	68.7	2.0	1.7	67.8	68.2	69.7	1.9	1.5	Yes
R196(OV521)	Vacant-Commercial	65.8	64.9	66.6	0.8	1.7	67.6	66.8	68.6	1.0	1.8	Yes
R197(O130)	Vacant-Residential	73.3	74.1	74.1	0.8	0.0	73.7	74.5	74.7	1.0	0.2	Yes
R198(O252)	Single Family	64.0	64.1	66.6	2.6	2.5	65.5	65.6	67.8	2.3	2.2	Yes
R199(O521)	Vacant-Commercial	64.3	63.9	65.8	1.5	1.9	66.0	65.6	67.4	1.4	1.8	Yes
R200(O724)	Residential	59.2	60.1	61.5	2.3	1.4	59.2	60.4	61.8	2.6	1.4	No
R201(O135)	Residential	58.0	57.9	58.9	0.9	1.0	58.8	58.4	59.7	0.9	1.3	No
R202(OV775)	Vacant-Residential	66.8	67.4	68.1	1.3	0.7	67.3	68.2	68.9	1.6	0.7	Yes
R205(OV775)	Vacant-Residential	64.9	65.5	66.4	1.5	0.9	65.4	66.2	67.2	1.8	1.0	Yes
R203(O661)	Church	64.9	65.4	67.6	2.7	2.2	66.2	66.6	68.6	2.4	2.0	Yes
R204(O301)	Residential	68.5	69.3	69.4	0.9	0.1	68.8	69.9	70.1	1.3	0.2	Yes
R206(OV312)	Vacant-Residential	60.8	61.6	62.4	1.6	0.8	60.5	61.3	62.7	2.2	1.4	No
R207(O517)	Residential	62.1	62.8	63.2	1.1	0.4	62.6	63.5	63.9	1.3	0.4	No

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R208(O133)	Residential	63.8	64.5	64.2	0.4	-0.3	64.1	64.7	64.7	0.6	0.0	No
R209(O208)	Vacant-Commercial	62.2	63.0	62.6	0.4	-0.4	62.0	63.0	62.8	0.8	-0.2	No
R210(O147)	Office	58.6	59.0	60.9	2.3	1.9	59.3	59.7	61.1	1.8	1.4	No
R211(O622)	Residential	61.9	62.7	62.7	0.8	0.0	62.0	63.2	63.2	1.2	0.0	No
R212(O407)	Residential	60.0	60.9	61.6	1.6	0.7	60.2	61.3	61.9	1.7	0.6	No
R213(O719)	Residential	60.1	60.9	61.2	1.1	0.3	60.2	61.4	61.7	1.5	0.3	No
R214(O346)	Residential	67.3	68.2	67.8	0.5	-0.4	67.5	68.6	68.3	0.8	-0.3	Yes
R215(O71)	Residential	70.1	70.9	70.9	0.8	0.0	70.4	71.2	71.3	0.9	0.1	Yes
R216(O325)	Residential	59.5	60.1	60.7	1.2	0.6	60.2	60.9	61.6	1.4	0.7	No
R217(OV296)	Vacant-Residential	63.2	64.0	64.6	1.4	0.6	63.6	64.7	65.3	1.7	0.6	No
R218(O665)	Residential	67.4	68.2	67.9	0.5	-0.3	67.5	68.6	68.4	0.9	-0.2	Yes
R219(O131)	Residential	63.1	63.7	64.0	0.9	0.3	63.4	63.9	64.5	1.1	0.6	No
R224a(O12)	Multi-family	53.8	54.5	53.7	-0.1	-0.8	53.9	54.7	53.7	-0.2	-1.0	No
R220(O296)	Residential	62.4	63.2	63.6	1.2	0.4	62.8	63.8	64.3	1.5	0.5	No
R221(O40)	Residential	64.0	64.6	65.5	1.5	0.9	64.6	65.4	66.3	1.7	0.9	Yes
R222(O122)	Residential	59.7	60.3	61.9	2.2	1.6	60.6	61.3	62.8	2.2	1.5	No
R223(O1002)	Residential	59.9	60.8	61.9	2.0	1.1	59.9	61.1	62.0	2.1	0.9	No
R225(O3)	Residential	61.3	61.8	63.1	1.8	1.3	62.1	62.8	63.9	1.8	1.1	No
R226(O1047)	Residential	66.8	67.7	67.4	0.6	-0.3	66.9	68.1	67.9	1.0	-0.2	Yes
R227(O5)	Residential	70.0	69.9	71.5	1.5	1.6	71.1	70.8	73.1	2.0	2.3	Yes
R228(O444)	Residential	69.1	69.3	70.6	1.5	1.3	69.8	69.8	71.7	1.9	1.9	Yes
R229(OV611)	Vacant-Residential	62.8	63.7	64.2	1.4	0.5	63.2	64.3	64.9	1.7	0.6	No
R230(O855)	Office	71.0	71.4	71.2	0.2	-0.2	70.3	70.7	70.7	0.4	0.0	Yes
R231(O761)	Residential	62.7	63.5	63.8	1.1	0.3	62.8	63.6	64.4	1.6	0.8	No
R232(O634)	Residential	63.3	64.0	64.3	1.0	0.3	63.6	64.2	65.0	1.4	0.8	No
R233(OV321)	Vacant-Residential	71.7	72.5	72.5	0.8	0.0	72.2	72.9	73.1	0.9	0.2	Yes
R234(OV223)	Vacant-Residential	63.3	64.0	64.5	1.2	0.5	63.5	64.2	65.1	1.6	0.9	No
R235(O209)	Residential	68.6	69.0	70.3	1.7	1.3	69.2	69.4	71.2	2.0	1.8	Yes
R236(O722)	Residential	62.0	62.8	62.6	0.6	-0.2	62.3	63.4	63.2	0.9	-0.2	No
R237(O611)	Multi-family	68.6	69.4	69.5	0.9	0.1	68.7	69.9	70.0	1.3	0.1	Yes
R238(OV135)	Vacant-Residential	61.9	62.5	63.2	1.3	0.7	62.3	62.7	63.8	1.5	1.1	No
R239(O436 R-7)	Residential	77.4	78.2	76.1	-1.3	-2.1	78.1	78.8	77.0	-1.1	-1.8	Yes
R240(OV562)	Vacant-Residential	64.0	64.8	67.2	3.2	2.4	63.8	64.6	65.8	2.0	1.2	Yes
R241(O562)	Residential	62.8	63.6	65.5	2.7	1.9	62.6	63.4	64.4	1.8	1.0	No
R242(O1034)	Residential	65.0	65.8	65.6	0.6	-0.2	65.2	66.3	66.1	0.9	-0.2	Yes



Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R243(O866)	Office	63.9	64.1	64.4	0.5	0.3	63.8	63.9	64.3	0.5	0.4	No
R244(O309)	Residential	55.5	56.3	55.8	0.3	-0.5	55.6	56.4	56.1	0.5	-0.3	No
R245(O652)	Residential	75.9	76.7	74.6	-1.3	-2.1	76.5	77.2	75.4	-1.1	-1.8	Yes
R246(O140)	Residential	63.0	63.7	63.5	0.5	-0.2	63.3	63.9	64.1	0.8	0.2	No
R247(O539)	Residential	68.0	68.8	69.0	1.0	0.2	68.3	69.4	69.6	1.3	0.2	Yes
R248(O218)	Residential	59.1	59.9	59.5	0.4	-0.4	58.7	59.6	59.9	1.2	0.3	No
R249(O530)	Residential	68.8	69.6	69.6	0.8	0.0	69.2	69.9	70.2	1.0	0.3	Yes
R250(O200)	Residential	62.0	62.8	63.4	1.4	0.6	62.3	63.4	64.1	1.8	0.7	No
R224b(O12)	Multi-family	54.9	55.7	53.9	-1.0	-1.8	54.7	55.5	54.0	-0.7	-1.5	No
R251(O673)	Single Family	68.8	69.5	69.5	0.7	0.0	69.0	69.8	69.9	0.9	0.1	Yes
R252a(O118)	Multi-family	64.2	65.0	64.5	0.3	-0.5	64.3	65.1	64.8	0.5	-0.3	No
R253(O516)	Residential	47.9	48.7	46.9	-1.0	-1.8	48.2	49.2	47.4	-0.8	-1.8	No
R254(O409)	Residential	50.5	51.2	49.9	-0.6	-1.3	50.6	51.5	50.5	-0.1	-1.0	No
R255(O769)	Residential	74.4	75.2	73.9	-0.5	-1.3	74.9	75.7	74.7	-0.2	-1.0	Yes
R256(O1050)	Residential	69.3	69.3	70.6	1.3	1.3	70.2	70.0	72.1	1.9	2.1	Yes
R257a(O75)	Multi-family	64.8	65.6	66.4	1.6	0.8	65.2	66.2	67.1	1.9	0.9	Yes
R258(O1061)	Residential	60.5	61.3	60.4	-0.1	-0.9	60.2	61.0	60.6	0.4	-0.4	No
R259(O515)	Residential	57.7	58.6	57.9	0.2	-0.7	57.5	58.4	58.3	0.8	-0.1	No
R257b(O75)	Multi-family	64.4	65.2	66.1	1.7	0.9	64.8	65.8	66.8	2.0	1.0	Yes
R260(OV721)	Vacant-Commercial	63.9	64.6	66.3	2.4	1.7	64.7	65.5	67.1	2.4	1.6	Yes
R261(O806)	Residential	62.6	63.2	70.6	8.0	7.4	62.6	63.3	71.7	9.1	8.4	Yes
R262(O1042)	Residential	69.4	69.4	70.8	1.4	1.4	70.6	70.3	72.4	1.8	2.1	Yes
R263(O158)	Residential	63.7	64.4	65.3	1.6	0.9	64.1	65.1	66.0	1.9	0.9	Yes
R264(O117)	Residential	57.2	58.0	57.8	0.6	-0.2	57.2	58.0	58.2	1.0	0.2	No
R265(O464)	Residential	59.9	60.7	61.6	1.7	0.9	60.0	60.7	62.1	2.1	1.4	No
R266(O1016)	Residential	61.6	62.4	70.6	9.0	8.2	61.6	62.4	71.8	10.2	9.4	Yes
R268a(O360)	Residential	62.9	63.5	70.4	7.5	6.9	62.9	63.5	71.5	8.6	8.0	Yes
R267(O923)	Residential	61.9	62.7	63.1	1.2	0.4	62.0	62.8	63.7	1.7	0.9	No
R269(O419)	Residential	62.8	63.6	64.6	1.8	1.0	63.3	64.2	65.2	1.9	1.0	No
R270(O571)	Residential	73.4	74.2	73.4	0.0	-0.8	73.8	74.5	74.1	0.3	-0.4	Yes
R271(O1012)	Residential	65.4	66.1	69.0	3.6	2.9	65.5	66.2	69.6	4.1	3.4	Yes
R272(O607 R-8)	Office	69.8	70.4	70.7	0.9	0.3	69.4	70.0	70.4	1.0	0.4	Yes
R273(O113)	Residential	55.1	56.0	55.3	0.2	-0.7	54.8	55.7	55.5	0.7	-0.2	No
R252b(O118)	Multi-family	58.2	59.0	58.1	-0.1	-0.9	58.0	59.2	58.1	0.1	-1.1	No
R274(O747)	Residential	58.0	58.8	69.7	11.7	10.9	57.9	58.6	70.7	12.8	12.1	Yes

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R277(OV360)	Vacant-Residential	63.3	64.1	69.6	6.3	5.5	63.4	64.1	70.4	7.0	6.3	Yes
R275(O572)	Residential	58.9	59.7	60.7	1.8	1.0	58.9	59.7	61.2	2.3	1.5	No
R276(O226)	Residential	61.0	61.8	62.3	1.3	0.5	61.0	61.8	62.9	1.9	1.1	No
R278(O997)	Residential	59.9	60.6	70.1	10.2	9.5	60.0	60.6	71.2	11.2	10.6	Yes
R279(O542)	Residential	58.9	59.5	69.3	10.4	9.8	58.7	59.3	70.2	11.5	10.9	Yes
R280(O146)	Residential	61.8	62.1	63.1	1.3	1.0	62.4	62.6	63.7	1.3	1.1	No
R283(OV360)	Vacant-Residential	62.9	63.5	69.8	6.9	6.3	62.8	63.4	70.7	7.9	7.3	Yes
R281(O217)	Residential	46.8	47.6	45.4	-1.4	-2.2	46.9	47.9	45.8	-1.1	-2.1	No
R282(O506)	Residential	58.7	59.2	69.0	10.3	9.8	58.6	59.1	69.9	11.3	10.8	Yes
R284(O890)	Residential	59.1	59.9	59.8	0.7	-0.1	59.4	60.1	60.2	0.8	0.1	No
R285(O978)	Residential	63.9	64.7	64.8	0.9	0.1	64.2	65.0	65.2	1.0	0.2	No
R286(O352)	Residential	58.0	58.8	59.9	1.9	1.1	58.0	58.8	60.3	2.3	1.5	No
R287(O674)	Residential	65.3	66.1	66.2	0.9	0.1	65.7	66.4	66.7	1.0	0.3	Yes
R288(O785)	Residential	64.7	65.5	65.5	0.8	0.0	65.0	65.7	65.9	0.9	0.2	No
R289(O406)	Residential	69.2	69.0	70.6	1.4	1.6	70.5	70.1	72.4	1.9	2.3	Yes
R290(O416)	Residential	63.1	63.9	64.9	1.8	1.0	63.4	64.4	65.5	2.1	1.1	No
R291(O1011)	Residential	57.6	58.0	63.4	5.8	5.4	57.6	57.9	63.9	6.3	6.0	No
R292(O718)	Residential	58.6	59.3	68.3	9.7	9.0	58.4	59.0	69.0	10.6	10.0	Yes
R293(O752)	Residential	59.9	60.7	61.6	1.7	0.9	60.0	60.7	62.1	2.1	1.4	No
R294(O1031)	Residential	52.4	52.8	60.2	7.8	7.4	52.9	53.2	60.9	8.0	7.7	No
R268b(O360)	Recreational	63.0	63.6	68.8	5.8	5.2	63.0	63.6	69.5	6.5	5.9	Yes
R298(O999)	Residential	59.4	60.3	67.0	7.6	6.7	59.6	60.4	67.5	7.9	7.1	Yes
R299(O1055)	Residential	58.5	59.3	66.5	8.0	7.2	58.7	59.5	66.9	8.2	7.4	Yes
R300(O1054)	Residential	57.2	57.9	66.0	8.8	8.1	57.2	57.9	66.4	9.2	8.5	Yes
R301(O1052)	Office	54.3	55.0	65.1	10.8	10.1	54.2	54.9	65.6	11.4	10.7	No
R302(O1000)	Residential	57.4	58.2	58.6	1.2	0.4	57.5	58.6	59.2	1.7	0.6	No
R303(O97)	Office	66.4	65.2	66.4	0.0	1.2	66.6	65.1	66.0	-0.6	0.9	Yes
R304(O1053)	Residential	56.3	57.1	64.4	8.1	7.3	56.0	56.8	65.1	9.1	8.3	No
R305(O998)	Residential	56.0	56.8	57.4	1.4	0.6	56.1	57.1	57.9	1.8	0.8	No
R306(O225)	Residential	62.5	63.2	63.5	1.0	0.3	62.6	63.4	64.0	1.4	0.6	No
R307(O298)	Residential	69.1	69.0	70.6	1.5	1.6	70.4	69.9	72.3	1.9	2.4	Yes
R308(OV155)	Vacant-Residential	62.2	62.8	63.1	0.9	0.3	62.6	63.0	63.7	1.1	0.7	No
R309(O232)	Residential	46.6	47.1	46.8	0.2	-0.3	47.0	47.4	47.3	0.3	-0.1	No
R310(O856)	Residential	67.4	68.1	68.0	0.6	-0.1	67.7	68.5	68.5	0.8	0.0	Yes
R311(O1026)	Residential	52.3	53.1	54.2	1.9	1.1	52.5	53.4	54.6	2.1	1.2	No

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R312(O32)	Residential	57.9	58.6	59.4	1.5	0.8	58.0	58.7	59.9	1.9	1.2	No
R313(O888)	Residential	57.9	58.7	59.8	1.9	1.1	58.0	58.7	60.3	2.3	1.6	No
R314(O1022)	Residential	53.9	54.6	55.3	1.4	0.7	54.0	54.8	55.3	1.3	0.5	No
R315(O619)	Residential	53.5	53.6	57.3	3.8	3.7	54.6	54.5	58.3	3.7	3.8	No
R316a(O1029)	Residential	56.1	56.9	56.9	0.8	0.0	56.1	56.9	56.7	0.6	-0.2	No
R316b(O1029)	Recreational	57.0	57.8	59.1	2.1	1.3	56.8	57.5	59.0	2.2	1.5	No
R317(O833)	Residential	49.1	49.8	49.5	0.4	-0.3	49.2	49.8	49.8	0.6	0.0	No
R318(O736)	Residential	59.6	60.4	61.4	1.8	1.0	59.2	60.1	61.4	2.2	1.3	No
R319(OP1052)	Recreational (Park)	63.5	64.3	65.1	1.6	0.8	63.6	64.5	65.2	1.6	0.7	No
R320(O567)	Residential	58.2	59.0	59.8	1.6	0.8	58.3	59.0	60.3	2.0	1.3	No
R321(O460)	Residential	49.4	50.1	49.6	0.2	-0.5	49.4	50.0	49.9	0.5	-0.1	No
R322(O670)	Residential	48.9	49.6	49.4	0.5	-0.2	49.0	49.7	49.7	0.7	0.0	No
R323(O166)	Residential	49.0	49.7	49.4	0.4	-0.3	49.2	49.8	49.7	0.5	-0.1	No
R324(O889)	Residential	47.0	47.7	47.5	0.5	-0.2	47.2	47.9	48.0	0.8	0.1	No
R325(O570)	Residential	50.9	51.7	48.7	-2.2	-3.0	50.3	51.0	49.2	-1.1	-1.8	No
R326(O265)	Residential	61.6	62.4	62.5	0.9	0.1	62.0	62.8	63.0	1.0	0.2	No
R327(O404)	Residential	62.1	62.7	65.5	3.4	2.8	62.0	62.7	65.9	3.9	3.2	No
R328(OV465)	Vacant-Residential	62.3	62.8	63.2	0.9	0.4	62.7	63.0	63.8	1.1	0.8	No
R329(O773)	Office	72.2	72.8	72.6	0.4	-0.2	71.6	72.2	72.4	0.8	0.2	Yes
R330(O1036)	Residential	57.8	58.0	60.1	2.3	2.1	58.9	58.8	61.2	2.3	2.4	No
R331(O28)	Recreational	63.3	64.2	64.7	1.4	0.5	63.4	64.3	64.9	1.5	0.6	No
R332(OV833)	Vacant-Residential	55.0	55.8	56.6	1.6	0.8	55.0	55.8	57.0	2.0	1.2	No
R333(O164)	Residential	58.2	58.9	59.5	1.3	0.6	58.3	59.0	60.0	1.7	1.0	No
R334(O655 R-23)	Commercial	60.3	58.3	59.9	-0.4	1.6	61.6	59.4	60.9	-0.7	1.5	No
R335(O148)	Residential	62.6	62.9	63.9	1.3	1.0	63.4	63.5	65.0	1.6	1.5	No
R336(OV164)	Vacant-Residential	56.5	57.2	57.3	0.8	0.1	56.8	57.5	57.7	0.9	0.2	No
R337(O389 R-10)	Office	71.4	71.9	72.1	0.7	0.2	70.8	71.4	71.9	1.1	0.5	Yes
R338(O920)	Single Family	61.8	62.6	62.7	0.9	0.1	61.9	62.6	63.1	1.2	0.5	No
R339(O330)	Office	58.7	59.4	58.2	-0.5	-1.2	58.4	59.1	58.3	-0.1	-0.8	No
R340(O115)	Residential	57.8	58.4	58.6	0.8	0.2	57.9	58.5	58.9	1.0	0.4	No
R341(OP976)	Recreational (Park)	66.4	66.5	67.4	1.0	0.9	67.4	67.2	68.4	1.0	1.2	Yes
R342(O318)	Residential	61.4	62.1	64.0	2.6	1.9	61.3	62.0	64.3	3.0	2.3	No
R343(O720)	Church	64.5	65.0	65.5	1.0	0.5	65.1	65.4	66.3	1.2	0.9	Yes
R344(O4)	Residential	59.3	60.0	59.9	0.6	-0.1	59.4	60.0	60.2	0.8	0.2	No
R345(O236)	Residential	59.6	60.2	60.3	0.7	0.1	59.8	60.3	60.7	0.9	0.4	No

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R346a(O451 R-30)	Commercial	63.3	63.1	63.1	-0.2	0.0	60.7	59.9	60.8	0.1	0.9	No
R347(OV720)	Vacant-Residential	64.0	64.5	64.9	0.9	0.4	64.4	64.9	65.6	1.2	0.7	No
R348(O531)	Residential	56.0	56.7	57.1	1.1	0.4	56.2	57.0	57.6	1.4	0.6	No
R349(O772)	Residential	59.9	60.5	60.7	0.8	0.2	60.1	60.7	61.0	0.9	0.3	No
R350(O763)	Office	61.9	61.6	62.6	0.7	1.0	61.6	61.3	62.4	0.8	1.1	No
R351(OV58)	Vacant-Residential	62.2	62.9	63.7	1.5	0.8	62.4	63.1	64.2	1.8	1.1	No
R353a(O931 R-14)	Commercial	66.3	67.1	67.4	1.1	0.3	66.2	67.0	67.0	0.8	0.0	Yes
R352(O764)	Residential	60.5	61.2	61.2	0.7	0.0	60.8	61.4	61.6	0.8	0.2	No
R354(OV149)	Vacant-Residential	63.4	64.0	64.4	1.0	0.4	63.8	64.3	65.0	1.2	0.7	No
R355(O723)	Residential	57.8	58.4	62.0	4.2	3.6	57.8	58.3	62.3	4.5	4.0	No
R356(O990)	Residential	59.9	60.6	62.9	3.0	2.3	60.1	60.6	63.3	3.2	2.7	No
R357(O992)	Residential	60.8	61.5	63.4	2.6	1.9	61.0	61.6	63.7	2.7	2.1	No
R358(O264)	Residential	55.7	56.5	57.3	1.6	0.8	56.2	56.9	57.6	1.4	0.7	No
R359(O284)	Office	66.0	66.7	68.6	2.6	1.9	66.2	66.9	68.3	2.1	1.4	Yes
R360(O618)	Residential	61.2	61.9	63.6	2.4	1.7	61.4	62.0	63.9	2.5	1.9	No
R361(O995)	Residential	60.9	61.6	62.0	1.1	0.4	61.2	61.8	62.4	1.2	0.6	No
R362(OV93)	Vacant-Commercial	73.2	73.7	74.8	1.6	1.1	74.1	74.5	75.5	1.4	1.0	Yes
R363(O993)	Residential	61.3	62.0	62.9	1.6	0.9	61.6	62.2	63.4	1.8	1.2	No
R364(O240)	Residential	57.0	57.8	56.5	-0.5	-1.3	57.4	58.2	56.8	-0.6	-1.4	No
R365(O994)	Residential	61.6	62.3	63.2	1.6	0.9	61.9	62.5	63.6	1.7	1.1	No
R366(O93 R-9)	Single Family	72.5	73.0	74.3	1.8	1.3	73.2	73.7	75.0	1.8	1.3	Yes
R367(O610)	Residential	64.1	64.8	64.9	0.8	0.1	64.2	65.0	65.2	1.0	0.2	No
R368(O1015)	Residential	61.2	61.9	63.3	2.1	1.4	61.3	61.9	63.6	2.3	1.7	No
R369(O991)	Residential	61.5	62.2	63.1	1.6	0.9	61.8	62.4	63.5	1.7	1.1	No
R370(OP535)	Recreational (Park)	67.6	68.1	67.4	-0.2	-0.7	67.4	67.9	67.8	0.4	-0.1	Yes
R371(O729)	Residential	61.4	62.1	63.0	1.6	0.9	61.7	62.3	63.3	1.6	1.0	No
R372(OV248)	Vacant-Recreational	58.9	59.6	60.6	1.7	1.0	59.1	59.8	61.0	1.9	1.2	No
R373(OV946)	Vacant-Residential	66.4	65.4	66.8	0.4	1.4	68.5	67.3	68.8	0.3	1.5	Yes
R374(OV93)	Vacant-Commercial	70.0	70.6	72.0	2.0	1.4	70.9	71.4	72.5	1.6	1.1	Yes
R353b(O931 R-13)	Commercial	73.1	73.7	73.5	0.4	-0.2	72.8	73.4	73.2	0.4	-0.2	Yes
R375(O559)	Vacant-Commercial	69.0	69.6	69.4	0.4	-0.2	69.4	70.0	69.8	0.4	-0.2	Yes
R376(O493)	Residential	66.8	67.5	68.8	2.0	1.3	67.6	68.2	69.2	1.6	1.0	Yes
R377(O92)	Residential	70.3	70.9	72.4	2.1	1.5	71.1	71.7	72.8	1.7	1.1	Yes
R378(O637 R-21)	Office	64.3	64.0	65.0	0.7	1.0	64.0	63.7	64.9	0.9	1.2	No
R379(O895)	Residential	72.4	72.9	74.5	2.1	1.6	73.3	73.8	75.2	1.9	1.4	Yes

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R380(O602)	Residential	70.5	71.2	72.7	2.2	1.5	71.4	71.9	73.2	1.8	1.3	Yes
R381(O843)	Vacant-Recreational	57.7	58.5	57.1	-0.6	-1.4	58.1	58.8	58.1	0.0	-0.7	No
R382(O755)	Office	68.4	69.1	69.4	1.0	0.3	68.0	68.7	69.9	1.9	1.2	Yes
R383(O41 R-19)	Commercial	66.1	66.5	68.3	2.2	1.8	65.7	66.0	68.6	2.9	2.6	Yes
R384(OV92)	Vacant-Residential	64.2	64.9	65.7	1.5	0.8	64.8	65.4	66.1	1.3	0.7	Yes
R385(O262)	Residential	69.0	69.4	69.4	0.4	0.0	69.5	69.9	69.6	0.1	-0.3	Yes
R386(O984)	Multi-family	71.5	72.1	73.5	2.0	1.4	72.4	72.9	74.1	1.7	1.2	Yes
R387(O88)	Multi-family	63.0	63.6	63.2	0.2	-0.4	63.4	64.0	63.6	0.2	-0.4	No
M-6(O560)	Office	73.0	73.6	75.3	2.3	1.7	73.1	73.7	75.2	2.1	1.5	Yes
R389(O91)	Multi-family	65.4	65.8	65.6	0.2	-0.2	65.7	66.1	66.0	0.3	-0.1	Yes
R390(O90)	Multi-family	64.1	64.7	64.3	0.2	-0.4	64.4	65.0	64.7	0.3	-0.3	No
R391(O356)	Single Family	61.9	62.6	61.9	0.0	-0.7	62.2	62.9	62.5	0.3	-0.4	No
R392(O590)	Multi-family	62.2	62.9	62.3	0.1	-0.6	62.6	63.2	62.8	0.2	-0.4	No
R393(O355)	Single Family	61.4	62.2	61.6	0.2	-0.6	61.8	62.5	62.2	0.4	-0.3	No
R394(O357)	Multi-family	61.3	62.0	61.5	0.2	-0.5	61.8	62.4	62.0	0.2	-0.4	No
R395(O450)	Residential	67.0	67.7	66.7	-0.3	-1.0	67.3	68.0	67.2	-0.1	-0.8	Yes
R396(O453)	Residential	67.7	68.5	67.6	-0.1	-0.9	68.0	68.7	68.0	0.0	-0.7	Yes
R397(O455)	Vacant-Residential	67.4	67.9	67.4	0.0	-0.5	67.7	68.1	67.7	0.0	-0.4	Yes
R398(O341)	Vacant-Residential	67.2	67.8	67.4	0.2	-0.4	67.6	68.1	67.7	0.1	-0.4	Yes
R399(OV455)	Vacant-Residential	67.1	67.5	67.1	0.0	-0.4	67.4	67.8	67.4	0.0	-0.4	Yes
R400(OV341)	Vacant-Residential	66.4	67.1	66.9	0.5	-0.2	66.9	67.5	67.2	0.3	-0.3	Yes
R401(OV450)	Vacant-Residential	65.7	66.4	65.8	0.1	-0.6	66.0	66.7	66.3	0.3	-0.4	Yes
R402(OV358)	Vacant-Recreational	54.2	54.9	55.0	0.8	0.1	54.3	54.9	55.3	1.0	0.4	No
R403(O767)	Residential	64.0	63.6	63.6	-0.4	0.0	63.8	63.3	63.7	-0.1	0.4	No
R404(OV767)	Vacant-Residential	59.5	60.2	60.3	0.8	0.1	59.8	60.4	60.6	0.8	0.2	No
R405(O340)	Residential	60.1	58.5	57.6	-2.5	-0.9	59.6	57.3	57.7	-1.9	0.4	No
R406(O244)	Residential	55.9	54.1	53.0	-2.9	-1.1	55.4	52.8	53.1	-2.3	0.3	No
R407(O343)	School	69.2	69.9	70.7	1.5	0.8	69.8	70.5	70.9	1.1	0.4	Yes
R408(OP453)	Recreational (Park)	61.6	62.3	61.2	-0.4	-1.1	62.0	62.7	61.7	-0.3	-1.0	No
R409(O338)	Residential	61.1	59.8	59.2	-1.9	-0.6	60.6	58.8	59.3	-1.3	0.5	No
R410(OP343)	Recreational (Park)	69.9	70.6	71.5	1.6	0.9	70.7	71.3	71.9	1.2	0.6	Yes
R411(OV338)	Vacant-Commercial	52.1	50.6	49.6	-2.5	-1.0	51.6	49.6	49.7	-1.9	0.1	No
R412(O283 R-11)	Residential	70.7	71.3	71.5	0.8	0.2	71.4	71.9	72.1	0.7	0.2	Yes
M-4(O494)	Residential	67.3	68.1	68.2	0.9	0.1	67.9	68.6	68.6	0.7	0.0	Yes
R414(OV175)	Vacant-Residential	58.4	58.9	60.0	1.6	1.1	58.7	59.2	60.3	1.6	1.1	No

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R415(O801)	Residential	63.9	64.6	65.2	1.3	0.6	64.6	65.3	65.7	1.1	0.4	No
R416(O554)	Office	65.1	63.0	65.1	0.0	2.1	66.5	64.4	66.5	0.0	2.1	Yes
R417(OV156)	Vacant-Residential	58.1	58.7	58.9	0.8	0.2	58.5	59.1	59.3	0.8	0.2	No
R418(O684)	Residential	59.1	59.9	60.3	1.2	0.4	59.8	60.5	60.7	0.9	0.2	No
R419(O633)	Multi-family	69.9	70.4	71.1	1.2	0.7	70.8	71.3	71.9	1.1	0.6	Yes
R420(O433)	Multi-family	69.3	69.9	70.4	1.1	0.5	70.1	70.7	71.2	1.1	0.5	Yes
R421(O748)	Multi-family	70.3	70.7	72.0	1.7	1.3	71.2	71.7	72.8	1.6	1.1	Yes
R422(O682)	Residential	69.0	68.5	69.2	0.2	0.7	69.8	69.2	69.8	0.0	0.6	Yes
R423(O282)	Residential	60.3	61.1	60.8	0.5	-0.3	60.7	61.4	61.2	0.5	-0.2	No
R424(O504)	Residential	60.7	61.3	61.3	0.6	0.0	61.2	61.7	61.6	0.4	-0.1	No
R425(O854 R-15)	Multi-family	69.4	70.1	73.2	3.8	3.1	70.1	70.8	73.6	3.5	2.8	Yes
R426(O800)	Residential	56.7	57.5	57.7	1.0	0.2	57.3	58.0	58.1	0.8	0.1	No
R427(O754)	Multi-family	61.6	62.3	62.2	0.6	-0.1	62.5	63.1	62.9	0.4	-0.2	No
R428(O831)	Multi-family	71.6	72.3	74.2	2.6	1.9	72.3	73.0	74.6	2.3	1.6	Yes
R429(O541)	Multi-family	62.7	63.5	64.4	1.7	0.9	63.8	64.5	65.2	1.4	0.7	No
R430(O227)	Multi-family	65.7	66.4	69.5	3.8	3.1	66.5	67.2	70.0	3.5	2.8	Yes
R431(O875)	Multi-family	74.3	75.0	73.2	-1.1	-1.8	74.3	75.0	73.4	-0.9	-1.6	Yes
R432(O336)	Multi-family	71.5	72.3	73.3	1.8	1.0	72.0	72.8	73.6	1.6	0.8	Yes
M-7(O819)	Multi-family	70.8	71.4	69.4	-1.4	-2.0	70.1	70.7	69.4	-0.7	-1.3	Yes
R434(O331)	Multi-family	71.2	72.0	73.1	1.9	1.1	71.7	72.4	73.3	1.6	0.9	Yes
R435(O600 R-12)	Residential	60.3	60.4	60.6	0.3	0.2	61.0	61.1	61.2	0.2	0.1	No
M-5(O683)	Multi-family	70.8	71.5	72.5	1.7	1.0	71.2	71.9	72.7	1.5	0.8	Yes
R437(O799)	Multi-family	70.3	71.1	71.9	1.6	0.8	70.6	71.3	72.0	1.4	0.7	Yes
R438(O821)	Multi-family	71.9	72.7	71.2	-0.7	-1.5	71.5	72.3	71.6	0.1	-0.7	Yes
R439(O863)	Multi-family	63.6	63.8	63.7	0.1	-0.1	63.8	64.1	63.9	0.1	-0.2	No
R440(O881)	Multi-family	60.0	60.7	61.9	1.9	1.2	60.8	61.5	62.4	1.6	0.9	No
R441(O829)	Multi-family	59.1	59.9	61.1	2.0	1.2	60.1	60.8	61.7	1.6	0.9	No
R442(O820 R-17)	Multi-family	73.4	74.2	73.4	0.0	-0.8	73.4	74.2	74.0	0.6	-0.2	Yes
R443(O958)	Multi-family	56.8	57.6	62.0	5.2	4.4	57.2	58.0	62.3	5.1	4.3	No
R444(O864)	Multi-family	57.2	58.0	62.2	5.0	4.2	57.6	58.4	62.5	4.9	4.1	No
R445(O894)	Multi-family	57.2	58.0	62.2	5.0	4.2	57.8	58.6	62.2	4.4	3.6	No
R446(O255)	Multi-family	57.5	58.2	60.5	3.0	2.3	57.8	58.5	60.1	2.3	1.6	No
R346b(O451 R-26)	Commercial	65.0	63.0	65.0	0.0	2.0	64.2	62.4	64.3	0.1	1.9	No
R447(O359)	Multi-family	51.1	51.9	51.0	-0.1	-0.9	51.5	52.2	51.3	-0.2	-0.9	No
R448(O858)	Multi-family	70.6	71.4	69.5	-1.1	-1.9	70.3	71.1	69.9	-0.4	-1.2	Yes

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R449(OP494)	Recreational (Park)	61.4	61.6	61.5	0.1	-0.1	62.2	62.4	62.1	-0.1	-0.3	No
R450(O802)	Multi-family	54.8	55.5	51.8	-3.0	-3.7	54.9	55.5	52.2	-2.7	-3.3	No
R451(O922)	Multi-family	72.1	72.9	72.3	0.2	-0.6	72.0	72.8	73.0	1.0	0.2	Yes
R452(O828)	Multi-family	62.3	62.3	62.2	-0.1	-0.1	62.4	62.5	62.4	0.0	-0.1	No
R453(O979)	Multi-family	55.8	56.5	55.4	-0.4	-1.1	55.4	56.1	55.5	0.1	-0.6	No
R454(O825 R-16)	Office	64.9	65.6	66.3	1.4	0.7	65.1	65.7	66.0	0.9	0.3	Yes
R455(O893)	Multi-family	52.5	53.2	52.9	0.4	-0.3	52.7	53.4	53.2	0.5	-0.2	No
R456(O891)	Multi-family	71.7	72.4	72.2	0.5	-0.2	71.5	72.0	72.8	1.3	0.8	Yes
R457(O703)	Multi-family	59.9	60.6	58.8	-1.1	-1.8	60.1	60.7	59.1	-1.0	-1.6	No
R458(O957)	Residential	55.2	56.0	59.1	3.9	3.1	55.9	56.7	59.4	3.5	2.7	No
R459(O955)	Multi-family	51.6	52.4	52.3	0.7	-0.1	52.0	52.7	52.6	0.6	-0.1	No
R460(O986)	Residential	48.6	48.4	47.4	-1.2	-1.0	48.7	48.4	47.9	-0.8	-0.5	No
R461(O987)	Residential	54.8	55.1	54.5	-0.3	-0.6	55.2	55.5	54.9	-0.3	-0.6	No
R462(O892)	Multi-family	48.3	49.0	49.8	1.5	0.8	48.7	49.4	50.1	1.4	0.7	No
R463(O257)	Multi-family	55.2	56.0	57.1	1.9	1.1	54.9	55.6	56.9	2.0	1.3	No
R464(O256)	Multi-family	52.4	53.2	54.1	1.7	0.9	53.0	53.7	54.0	1.0	0.3	No
R465(O675 R-18)	Multi-family	69.5	70.3	69.1	-0.4	-1.2	69.0	69.6	69.6	0.6	0.0	Yes
R466(O897)	Office	54.4	55.0	57.1	2.7	2.1	55.0	55.6	57.3	2.3	1.7	No
R467(O956)	Multi-family	54.1	54.8	53.8	-0.3	-1.0	54.6	55.2	54.0	-0.6	-1.2	No
R468(O170)	Multi-family	57.5	58.1	58.7	1.2	0.6	57.7	58.2	58.7	1.0	0.5	No
R469(OP643)	Recreational (Park)	53.9	54.6	54.5	0.6	-0.1	54.3	55.0	54.8	0.5	-0.2	No
R470(O859)	Multi-family	61.9	62.7	60.5	-1.4	-2.2	61.2	62.0	60.8	-0.4	-1.2	No
R471(O925)	Multi-family	58.6	59.3	60.1	1.5	0.8	57.9	58.4	60.5	2.6	2.1	No
R472(O461)	Multi-family	52.9	53.7	52.9	0.0	-0.8	52.4	53.1	53.3	0.9	0.2	No
M-8(O951)	Multi-family	70.3	71.1	68.9	-1.4	-2.2	69.9	70.6	69.4	-0.5	-1.2	Yes
R474(O977)	Multi-family	55.6	56.3	55.4	-0.2	-0.9	55.2	55.9	55.8	0.6	-0.1	No
R475(O844)	Multi-family	46.1	46.8	45.4	-0.7	-1.4	45.9	46.6	45.6	-0.3	-1.0	No
R476(O568)	Church	51.6	52.2	52.1	0.5	-0.1	51.8	52.4	52.1	0.3	-0.3	No
R477(O949)	Multi-family	53.3	54.0	52.8	-0.5	-1.2	52.9	53.7	53.1	0.2	-0.6	No
R478(O950)	Multi-family	58.9	59.7	56.6	-2.3	-3.1	58.1	58.8	56.8	-1.3	-2.0	No
R479(O783)	Multi-family	51.1	51.6	49.6	-1.5	-2.0	50.8	51.3	49.7	-1.1	-1.6	No
R480(O860)	Multi-family	58.5	59.3	56.6	-1.9	-2.7	58.4	59.3	57.0	-1.4	-2.3	No
R481(O862)	Multi-family	45.9	46.7	45.6	-0.3	-1.1	45.9	46.7	45.8	-0.1	-0.9	No
R482(O770 R-24)	Office	68.8	69.6	70.4	1.6	0.8	68.6	69.4	70.4	1.8	1.0	Yes
R483(O948)	Multi-family	42.4	43.1	41.8	-0.6	-1.3	42.5	43.2	42.2	-0.3	-1.0	No

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R484(O981)	Multi-family	43.7	44.4	42.8	-0.9	-1.6	43.8	44.5	43.2	-0.6	-1.3	No
R485(O462)	Restaurant/Bar	54.4	55.0	53.2	-1.2	-1.8	54.2	54.8	53.5	-0.7	-1.3	No
R486(O345)	Recreational	71.9	72.8	71.6	-0.3	-1.2	72.1	73.0	72.3	0.2	-0.7	Yes
R487(O834)	Multi-family	56.2	57.0	54.2	-2.0	-2.8	56.0	56.8	54.5	-1.5	-2.3	No
R488(O429)	Recreational	63.6	64.5	60.7	-2.9	-3.8	63.3	64.2	61.1	-2.2	-3.1	No
R489(OP345)	Recreational (Park)	73.5	74.4	73.8	0.3	-0.6	73.7	74.7	74.5	0.8	-0.2	Yes
R490(O902)	Residential	51.1	49.9	52.0	0.9	2.1	51.7	50.0	53.2	1.5	3.2	No
R491(O667 R-20)	Residential	65.3	63.6	66.5	1.2	2.9	66.1	63.9	67.3	1.2	3.4	Yes
R492(O363)	Residential	65.4	63.9	66.5	1.1	2.6	66.1	64.1	67.4	1.3	3.3	Yes
R493(O73)	Residential	66.0	65.3	67.1	1.1	1.8	66.6	65.5	67.9	1.3	2.4	Yes
R494(O836)	Residential	50.2	49.2	50.9	0.7	1.7	50.9	49.4	52.2	1.3	2.8	No
R495(O576)	Residential	65.8	65.0	66.8	1.0	1.8	66.4	65.2	67.6	1.2	2.4	Yes
R496(O499)	Residential	65.5	64.2	66.6	1.1	2.4	66.3	64.5	67.4	1.1	2.9	Yes
R497(O500)	Residential	65.7	64.7	66.8	1.1	2.1	66.4	65.0	67.6	1.2	2.6	Yes
R498(O501)	Residential	65.9	65.3	67.0	1.1	1.7	66.4	65.5	67.9	1.5	2.4	Yes
M-9(O578)	Residential	66.2	65.9	67.8	1.6	1.9	66.7	66.0	68.5	1.8	2.5	Yes
R500(O173)	Residential	66.3	65.8	67.6	1.3	1.8	66.8	66.0	68.4	1.6	2.4	Yes
R501(O903)	Residential	49.5	48.6	50.1	0.6	1.5	50.0	48.7	51.4	1.4	2.7	No
R502(O937)	Residential	48.9	48.2	49.4	0.5	1.2	49.5	48.3	50.7	1.2	2.4	No
R503(O44)	Office	76.1	77.0	77.4	1.3	0.4	76.8	77.6	78.3	1.5	0.7	Yes
R504(O845)	Residential	62.4	63.0	65.2	2.8	2.2	62.4	63.1	65.7	3.3	2.6	No
R505(O900 R-22)	Residential	62.1	62.8	64.9	2.8	2.1	62.2	62.9	65.3	3.1	2.4	No
R506(O362)	Residential	61.8	62.5	64.5	2.7	2.0	61.8	62.5	64.9	3.1	2.4	No
R507(O815)	Residential	61.0	61.8	64.1	3.1	2.3	61.1	61.9	64.4	3.3	2.5	No
R508(O908)	Residential	60.9	61.6	64.0	3.1	2.4	61.0	61.7	64.3	3.3	2.6	No
R509(O909)	Residential	60.9	61.7	63.9	3.0	2.2	61.0	61.7	64.2	3.2	2.5	No
R510(O910)	Residential	60.8	61.5	63.9	3.1	2.4	60.8	61.6	64.1	3.3	2.5	No
R511(O899)	Residential	60.6	61.4	63.7	3.1	2.3	60.7	61.4	63.9	3.2	2.5	No
R512(O144)	School	66.9	67.0	67.4	0.5	0.4	67.1	66.9	68.1	1.0	1.2	Yes
R513(O911)	Residential	60.5	61.2	63.6	3.1	2.4	60.5	61.3	63.9	3.4	2.6	No
R514(OP362)	Recreational (Park)	74.2	75.1	76.7	2.5	1.6	74.6	75.3	77.3	2.7	2.0	Yes
R514A (OP362)	Recreational (Park)	67.5	68.3	71.6	4.1	3.3	67.5	68.3	72.2	4.7	3.9	Yes
R514B (OP362)	Recreational (Park)	68.5	69.3	74.3	5.8	5.0	68.8	69.6	74.9	6.1	5.3	Yes
R514C(OP362)	Recreational (Park)	65.2	66.0	69.7	4.5	3.7	65.3	66.1	70.1	4.8	4.0	Yes
R514D(OP362)	Recreational (Park)	66.0	66.9	72.8	6.8	5.9	66.3	67.2	73.2	6.9	6.0	Yes



Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R515(O963)	Residential	60.3	61.1	63.4	3.1	2.3	60.4	61.2	63.6	3.2	2.4	No
R516(O778)	Residential	60.2	60.9	63.4	3.2	2.5	60.2	61.0	63.6	3.4	2.6	No
R517(O551)	Office	63.7	63.5	63.0	-0.7	-0.5	63.5	63.1	63.5	0.0	0.4	No
R518(O191)	Office	61.4	60.1	62.9	1.5	2.8	61.0	59.9	63.0	2.0	3.1	No
R519(O373)	Residential	60.2	61.0	64.0	3.8	3.0	60.4	61.0	64.2	3.8	3.2	No
R520(O487)	Residential	55.9	56.6	58.4	2.5	1.8	55.9	56.6	58.6	2.7	2.0	No
R521(O271)	Residential	47.6	48.3	47.5	-0.1	-0.8	47.7	48.3	47.8	0.1	-0.5	No
R522(O366)	Residential	53.8	54.6	55.1	1.3	0.5	53.7	54.5	55.3	1.6	0.8	No
R523(O86)	Residential	60.6	61.3	64.2	3.6	2.9	60.7	61.4	64.4	3.7	3.0	No
M-12(O604)	Office	66.5	64.9	67.1	0.6	2.2	67.2	65.2	68.3	1.1	3.1	Yes
R525(O695)	Residential	61.1	61.8	64.5	3.4	2.7	61.2	61.9	64.7	3.5	2.8	No
R526(O582)	Residential	60.3	61.1	64.1	3.8	3.0	60.4	61.1	64.3	3.9	3.2	No
R527(O488)	Residential	62.9	63.8	65.6	2.7	1.8	63.0	63.8	65.7	2.7	1.9	No
R528(O269)	Residential	63.6	64.5	65.5	1.9	1.0	63.7	64.5	65.7	2.0	1.2	No
R529(O368)	Residential	62.5	63.4	64.5	2.0	1.1	62.4	63.2	64.8	2.4	1.6	No
R530(O491)	Residential	52.2	52.5	56.2	4.0	3.7	53.5	53.4	56.6	3.1	3.2	No
R531(O383)	Residential	52.9	53.0	58.0	5.1	5.0	54.7	54.3	58.6	3.9	4.3	No
R532(O401)	Residential	55.9	56.0	62.2	6.3	6.2	57.7	57.3	62.9	5.2	5.6	No
M-10(O490)	Residential	67.1	67.7	71.3	4.2	3.6	68.1	68.1	72.2	4.1	4.1	Yes
R534(O483)	Residential	53.4	54.1	56.4	3.0	2.3	54.0	54.5	56.4	2.4	1.9	No
R535(O456 R-27)	Office	61.8	61.9	63.4	1.6	1.5	61.6	61.6	63.3	1.7	1.7	No
R536(O179)	Residential	55.0	55.7	57.8	2.8	2.1	55.4	55.9	57.9	2.5	2.0	No
R537(O689)	Residential	56.7	57.4	59.5	2.8	2.1	56.9	57.5	59.6	2.7	2.1	No
R538(OP456)	Recreational (Park)	65.3	65.6	66.9	1.6	1.3	65.1	65.4	66.6	1.5	1.2	Yes
R539(O85)	Residential	55.0	55.7	58.4	3.4	2.7	55.3	55.8	58.6	3.3	2.8	No
R540(O478)	Residential	56.8	57.5	59.8	3.0	2.3	57.0	57.6	59.9	2.9	2.3	No
R541(O87)	Residential	53.6	54.1	56.7	3.1	2.6	54.3	54.4	57.0	2.7	2.6	No
R542(O580)	Residential	52.3	52.6	56.3	4.0	3.7	53.7	53.5	56.6	2.9	3.1	No
M-11(O151)	Office	68.6	69.1	73.7	5.1	4.6	68.4	69.0	73.7	5.3	4.7	Yes
R544(O80)	Residential	53.1	53.2	57.3	4.2	4.1	54.7	54.4	57.7	3.0	3.3	No
R545(O281)	Residential	55.0	55.2	59.0	4.0	3.8	56.5	56.3	59.4	2.9	3.1	No
R546(O189)	Residential	55.1	55.0	60.0	4.9	5.0	57.5	56.8	60.6	3.1	3.8	No
R547(O794)	Single Family	55.3	55.0	59.8	4.5	4.8	59.2	58.1	60.9	1.7	2.8	No
R548(O492)	Residential	56.8	56.7	62.5	5.7	5.8	59.4	58.6	63.3	3.9	4.7	No
R549(O484)	Residential	55.8	55.1	60.0	4.2	4.9	60.3	58.8	61.2	0.9	2.4	No

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R550(O599)	Residential	59.2	59.2	64.5	5.3	5.3	61.8	61.1	65.4	3.6	4.3	No
R551(O380 R-25)	Residential	63.1	63.4	67.7	4.6	4.3	65.0	64.6	68.6	3.6	4.0	Yes
R552(O77)	Residential	57.7	56.9	62.0	4.3	5.1	62.2	60.7	63.0	0.8	2.3	No
R553(O536 R-32)	Office	61.3	60.3	62.9	1.6	2.6	63.1	61.7	64.7	1.6	3.0	No
R554(O67 R-28)	Office	64.9	65.4	67.9	3.0	2.5	64.0	64.6	67.0	3.0	2.4	Yes
R555(O566)	Office	59.4	59.7	65.5	6.1	5.8	59.4	59.5	65.6	6.2	6.1	No
R556(O467)	Office	60.8	61.1	64.7	3.9	3.6	58.5	58.9	64.1	5.6	5.2	No
R557(O707 R-29)	Church	55.1	55.5	66.5	11.4	11.0	56.5	56.7	67.0	10.5	10.3	Yes
R558(O398)	Office	65.5	65.8	66.5	1.0	0.7	61.4	61.8	62.9	1.5	1.1	Yes
R559(O399)	Residential	65.1	65.4	68.1	3.0	2.7	67.4	67.4	68.8	1.4	1.4	Yes
R560(O803 R-31)	Public Meeting Rooms	66.5	66.7	71.0	4.5	4.3	69.2	68.9	70.8	1.6	1.9	Yes
M-15(O664)	Office	62.4	60.2	62.3	-0.1	2.1	62.4	59.6	62.1	-0.3	2.5	No
M-16(O756)	Residential	64.5	65.2	66.9	2.4	1.7	64.6	65.0	67.2	2.6	2.2	Yes
R563(O384)	Office	65.9	66.7	67.0	1.1	0.3	66.6	67.4	67.7	1.1	0.3	Yes
R564(O605)	Multi-family	67.3	68.0	68.0	0.7	0.0	63.8	64.5	64.4	0.6	-0.1	Yes
R565(O198)	Office	66.8	67.5	67.7	0.9	0.2	62.9	63.6	63.8	0.9	0.2	Yes
R566(O100)	Office	66.8	67.5	67.7	0.9	0.2	62.8	63.5	63.8	1.0	0.3	Yes
R567(O715)	Office	66.9	67.6	67.8	0.9	0.2	62.9	63.6	63.9	1.0	0.3	Yes
R568(O197)	Office	66.9	67.6	67.8	0.9	0.2	62.8	63.5	63.8	1.0	0.3	Yes
R569(O712)	Medical	66.6	67.3	67.5	0.9	0.2	62.5	63.2	63.5	1.0	0.3	Yes
R570(O391)	Restaurant/Bar	65.7	66.5	67.0	1.3	0.5	67.1	67.9	68.6	1.5	0.7	Yes
R571(O786)	Office	65.7	66.5	67.1	1.4	0.6	67.1	67.9	68.8	1.7	0.9	Yes
R572(O495)	Office	72.0	72.9	N/A	N/A	N/A	72.6	73.5	N/A	N/A	N/A	N/A
R573(O713)	Office	71.6	72.5	N/A	N/A	N/A	71.8	72.6	N/A	N/A	N/A	N/A
R574(O98)	Multi-family	65.8	66.7	67.3	1.5	0.6	67.7	68.5	69.4	1.7	0.9	Yes
R575(O606)	Residential/Commercial	55.0	55.8	54.4	-0.6	-1.4	55.8	56.7	55.1	-0.7	-1.6	No
R576(O152 R-35)	Commercial	70.8	70.9	72.1	1.3	1.2	71.4	71.5	73.3	1.9	1.8	Yes
R577(O233)	Office	70.8	71.7	71.2	0.4	-0.5	71.5	72.5	72.4	0.9	-0.1	Yes
R578(O95)	Residential/Commercial	52.2	53.2	52.1	-0.1	-1.1	53.5	54.5	53.0	-0.5	-1.5	No
R579(O396)	Office	53.4	54.1	54.0	0.6	-0.1	51.6	52.4	52.0	0.4	-0.4	No
R580(O397)	Office	65.0	65.9	67.1	2.1	1.2	68.2	69.1	69.5	1.3	0.4	Yes
R581(O288)	Office	49.1	50.0	49.6	0.5	-0.4	50.1	51.1	50.4	0.3	-0.7	No
M-14(O664)	Office	70.0	70.9	69.5	-0.5	-1.4	69.7	70.5	70.0	0.3	-0.5	Yes
R582(O194)	Office	51.3	52.1	51.9	0.6	-0.2	50.8	51.6	51.1	0.3	-0.5	No
R583(O291 R-34)	Office	60.9	61.7	62.8	1.9	1.1	63.2	64.0	65.1	1.9	1.1	No

Table 7. Alternative E Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approach/ Exceed NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R584(O496 R-33)	Office	69.0	69.7	72.4	3.4	2.7	68.9	69.7	72.7	3.8	3.0	Yes
R585(O676)	Office	51.0	51.8	51.7	0.7	-0.1	50.8	51.6	51.4	0.6	-0.2	No
R586(O99)	Office	61.0	61.9	64.5	3.5	2.6	64.6	65.5	67.7	3.1	2.2	Yes
R587(O714)	Multi-family	60.3	61.2	64.2	3.9	3.0	64.2	65.1	67.5	3.3	2.4	Yes
R588(O466)	Office	65.0	66.0	72.4	7.4	6.4	64.8	65.6	72.9	8.1	7.3	Yes
R589(O677)	Office	65.5	66.4	72.6	7.1	6.2	65.1	65.9	73.0	7.9	7.1	Yes
R590(O502)	Office	47.9	48.8	48.2	0.3	-0.6	49.0	50.0	49.1	0.1	-0.9	No
R591(O267)	Office	71.0	71.9	72.1	1.1	0.2	70.8	71.7	72.5	1.7	0.8	Yes
R592(O870)	Office	51.1	52.0	51.8	0.7	-0.2	51.2	52.0	51.7	0.5	-0.3	No
R593(O193)	Residential/Commercial	62.4	63.4	63.8	1.4	0.4	67.2	68.1	67.1	-0.1	-1.0	Yes
R594(O711)	Office	62.8	63.8	64.3	1.5	0.5	67.6	68.6	67.6	0.0	-1.0	Yes
R595(O393)	Office	58.6	59.6	63.3	4.7	3.7	63.1	64.1	66.7	3.6	2.6	Yes
R596(OP603)	Recreational (Bengals Practice Field)	66.8	67.7	68.4	1.6	0.7	66.5	67.3	68.3	1.8	1.0	Yes
R597(O266)	Office	62.5	63.5	64.2	1.7	0.7	67.3	68.3	67.5	0.2	-0.8	Yes
R598(O710)	Office	61.6	62.6	63.4	1.8	0.8	66.5	67.4	66.7	0.2	-0.7	Yes
R599(O195)	Office	70.1	71.0	71.9	1.8	0.9	71.0	71.8	72.9	1.9	1.1	Yes
R600(O94)	Residential	62.0	62.9	63.8	1.8	0.9	62.4	63.2	64.2	1.8	1.0	No
R601(O388)	Residential	60.0	60.8	61.4	1.4	0.6	61.6	62.3	62.8	1.2	0.5	No
R602(O390)	Residential	55.3	56.1	57.7	2.4	1.6	56.7	57.6	58.5	1.8	0.9	No
R603a(O387)	Residential	43.5	44.3	43.4	-0.1	-0.9	43.7	44.5	43.6	-0.1	-0.9	No
R603b(O387)	Residential	55.3	56.2	58.1	2.8	1.9	55.8	56.7	58.3	2.5	1.6	No
R604(O787)	Residential	58.2	59.0	60.5	2.3	1.5	58.2	58.9	60.4	2.2	1.5	No
R605(O716)	Office	73.8	74.7	75.7	1.9	1.0	74.3	75.2	76.2	1.9	1.0	Yes
M-13(O292)	Office	70.8	71.7	71.7	0.9	0.0	70.9	72.1	72.0	1.1	-0.1	Yes
R607(O290 R-36)	Recreational (Paul Brown Stadium)	66.1	67.0	68.0	1.9	1.0	65.4	66.2	67.6	2.2	1.4	Yes
R608(OP290)	Park (Paul Brown Stadium)	70.1	70.9	69.1	-1.0	-1.8	69.2	70.0	68.1	-1.1	-1.9	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R1(O212)	Multi-family	59.0	59.8	60.1	1.1	0.3	59.1	60.3	60.6	1.5	0.3	No
R2(O210)	Multi-family	58.9	59.8	59.8	0.9	0.0	59.0	60.2	60.4	1.4	0.2	No
R3(O623)	Residential	57.0	57.9	57.0	0.0	-0.9	57.2	58.4	57.5	0.3	-0.9	No
R4(O110)	Multi-family	61.0	61.8	61.9	0.9	0.1	61.2	62.4	62.5	1.3	0.1	No
R5(O322)	Single Family	61.7	62.5	62.3	0.6	-0.2	61.7	63.0	62.9	1.2	-0.1	No
R6(O37)	Single Family	61.4	62.3	62.2	0.8	-0.1	61.5	62.7	62.8	1.3	0.1	No
R7(O725)	School	70.6	71.5	72.0	1.4	0.5	70.5	71.7	72.3	1.8	0.6	Yes
R8(O411)	Single Family	64.5	65.3	65.1	0.6	-0.2	64.5	65.8	65.7	1.2	-0.1	No
R9(O324)	Multi-family	67.4	68.3	67.4	0.0	-0.9	67.4	68.7	67.8	0.4	-0.9	Yes
R10(O740)	Single Family	69.4	70.3	69.5	0.1	-0.8	69.0	70.4	69.9	0.9	-0.5	Yes
R11(O17)	Church	67.3	68.2	68.6	1.3	0.4	66.6	68.1	69.0	2.4	0.9	Yes
R12(O13)	Multi-family	57.9	58.7	57.3	-0.6	-1.4	57.9	58.9	57.6	-0.3	-1.3	No
R13(O125)	Daycare	68.9	69.8	69.2	0.3	-0.6	68.0	69.6	69.6	1.6	0.0	Yes
R14a(O438)	Recreational	69.0	69.9	69.5	0.5	-0.4	68.1	69.7	69.9	1.8	0.2	Yes
R15(O221)	Single Family	70.0	70.8	69.9	-0.1	-0.9	69.7	71.0	70.2	0.5	-0.8	Yes
R16(O101)	Single Family	70.6	71.4	70.6	0.0	-0.8	70.4	71.4	70.9	0.5	-0.5	Yes
R17(O313)	Office	65.2	65.6	64.9	-0.3	-0.7	65.3	65.9	65.5	0.2	-0.4	No
R18(O734)	Multi-family	71.1	72.0	70.8	-0.3	-1.2	70.8	72.2	71.0	0.2	-1.2	Yes
R19(O427)	Recreational	75.5	76.3	74.8	-0.7	-1.5	74.8	76.2	74.9	0.1	-1.3	Yes
R14b(O438)	Residential	70.3	71.2	67.0	-3.3	-4.2	69.4	71.1	67.2	-2.2	-3.9	Yes
R20(O615)	Office	65.2	65.3	65.2	0.0	-0.1	65.4	65.7	65.9	0.5	0.2	No
R21(O421)	Single Family	71.7	72.6	69.2	-2.5	-3.4	70.7	72.2	68.8	-1.9	-3.4	Yes
R23(O8)	Multi-family	66.6	67.1	66.2	-0.4	-0.9	66.3	66.9	66.4	0.1	-0.5	Yes
R24(O109)	Multi-family	67.7	68.5	67.3	-0.4	-1.2	67.1	68.2	67.2	0.1	-1.0	Yes
M-1(O314)	Multi-family	70.8	71.6	70.2	-0.6	-1.4	70.2	71.4	70.1	-0.1	-1.3	Yes
R26(O214)	Multi-family	68.8	69.7	68.3	-0.5	-1.4	68.2	69.4	68.2	0.0	-1.2	Yes
R27(OP422)	Park	66.1	66.6	66.7	0.6	0.1	65.9	66.4	66.9	1.0	0.5	Yes
R28(O613)	Office	73.7	74.6	74.4	0.7	-0.2	72.9	74.0	74.3	1.4	0.3	Yes
R29(O414)	Office	74.1	74.9	74.5	0.4	-0.4	73.5	74.3	74.6	1.1	0.3	Yes
R30(O422)	Office	71.2	71.0	72.6	1.4	1.6	71.2	70.7	72.8	1.6	2.1	Yes
R31(O124 R-1)	Multi-family	70.4	69.9	71.4	1.0	1.5	70.3	69.4	71.6	1.3	2.2	Yes
R32(O317)	Restaurant/Bar	74.9	75.7	78.1	3.2	2.4	73.8	74.6	77.9	4.1	3.3	Yes
R33(O1021)	Residential	75.6	76.2	75.1	-0.5	-1.1	76.5	77.2	75.6	-0.9	-1.6	Yes
R34(O1028)	Residential	75.2	75.7	74.6	-0.6	-1.1	76.1	76.6	75.2	-0.9	-1.4	Yes
R35(O1014)	Office	75.3	75.7	74.6	-0.7	-1.1	76.3	76.7	75.3	-1.0	-1.4	Yes
R36(O1025)	Residential	73.2	73.7	72.1	-1.1	-1.6	74.0	74.5	72.7	-1.3	-1.8	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R37(O16 R-2)	Commercial	70.2	70.3	69.3	-0.9	-1.0	69.5	69.4	69.0	-0.5	-0.4	Yes
R38(O1)	Office	73.7	74.1	75.0	1.3	0.9	74.8	75.2	76.1	1.3	0.9	Yes
R39(O1044)	Residential	71.6	72.3	71.8	0.2	-0.5	71.9	72.9	72.2	0.3	-0.7	Yes
R40(O1017)	Residential	71.2	71.9	71.6	0.4	-0.3	71.4	72.4	72.0	0.6	-0.4	Yes
M-2(O415)	Office	71.0	70.6	70.7	-0.3	0.1	72.8	72.1	72.7	-0.1	0.6	Yes
R42(O21)	Office	77.1	78.0	78.5	1.4	0.5	77.8	78.8	79.2	1.4	0.4	Yes
R43(O1007)	Office	69.3	69.0	69.1	-0.2	0.1	70.9	70.3	70.8	-0.1	0.5	Yes
R44(O620)	Office	71.4	71.0	71.1	-0.3	0.1	73.2	72.5	73.0	-0.2	0.5	Yes
R45(O1018)	Residential	68.8	69.6	68.6	-0.2	-1.0	68.9	69.9	68.5	-0.4	-1.4	Yes
R46(O76)	Office	74.6	75.2	74.9	0.3	-0.3	75.3	76.0	75.7	0.4	-0.3	Yes
R47(O1046)	Residential	68.6	69.4	69.0	0.4	-0.4	68.7	69.8	69.3	0.6	-0.5	Yes
R48(OV730)	Vacant-Residential	67.3	68.0	67.5	0.2	-0.5	67.5	68.5	67.9	0.4	-0.6	Yes
R49(O505)	Office	71.7	71.7	72.7	1.0	1.0	71.7	71.2	73.0	1.3	1.8	Yes
R50(O1024)	Residential	66.7	67.3	66.5	-0.2	-0.8	67.0	67.7	67.1	0.1	-0.6	Yes
R51(O417)	Residential	67.3	67.9	66.7	-0.6	-1.2	67.6	68.3	67.3	-0.3	-1.0	Yes
R52(O1019)	Residential	68.6	69.3	68.5	-0.1	-0.8	68.7	69.7	68.5	-0.2	-1.2	Yes
R53(O119)	Office	70.8	70.3	71.3	0.5	1.0	72.5	72.3	73.2	0.7	0.9	Yes
R54(O49)	Office	66.5	67.1	67.8	1.3	0.7	66.2	66.7	67.9	1.7	1.2	Yes
R55(O108)	Office	69.9	70.2	71.2	1.3	1.0	69.9	69.8	71.4	1.5	1.6	Yes
R56(O1043)	Residential	64.1	64.9	65.0	0.9	0.1	64.6	65.6	65.6	1.0	0.0	No
R57(O237 R-3)	Office	69.6	69.8	70.9	1.3	1.1	69.6	69.6	71.1	1.5	1.5	Yes
R58(O1004)	Residential	66.1	66.9	65.9	-0.2	-1.0	66.2	67.3	66.3	0.1	-1.0	Yes
R59(O1037)	Residential	69.5	70.3	70.1	0.6	-0.2	69.7	70.8	70.6	0.9	-0.2	Yes
R60(OV119)	Vacant-Commercial	69.8	69.4	70.4	0.6	1.0	71.5	70.9	72.0	0.5	1.1	Yes
R61(O426)	Residential	71.1	70.6	71.9	0.8	1.3	72.9	72.3	73.5	0.6	1.2	Yes
R62(O527)	Residential	70.8	70.2	71.4	0.6	1.2	72.7	71.9	73.2	0.5	1.3	Yes
R63(O316)	Residential	71.1	70.7	72.0	0.9	1.3	72.9	72.3	73.6	0.7	1.3	Yes
R64(O425)	Single Family	71.1	70.9	71.8	0.7	0.9	72.8	72.3	73.4	0.6	1.1	Yes
R65(O219)	Residential	70.8	70.3	71.9	1.1	1.6	72.6	71.9	73.5	0.9	1.6	Yes
R66(O548 R-4)	Commercial	72.1	72.5	72.7	0.6	0.2	71.9	72.1	72.9	1.0	0.8	Yes
R67(O1013)	Residential	72.2	72.9	72.4	0.2	-0.5	72.9	73.7	73.1	0.2	-0.6	Yes
R68(O220)	Residential	70.6	70.3	71.6	1.0	1.3	72.3	71.7	73.0	0.7	1.3	Yes
R69(O423)	Residential	68.8	68.6	69.8	1.0	1.2	70.3	69.9	71.1	0.8	1.2	Yes
R70(OV1048)	Vacant-Residential	73.6	74.1	74.4	0.8	0.3	74.3	75.0	75.2	0.9	0.2	Yes
R71(O22)	Office	66.1	66.3	66.5	0.4	0.2	67.0	66.9	67.5	0.5	0.6	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R72(O1030)	Residential	69.8	70.4	70.0	0.2	-0.4	70.4	71.2	70.7	0.3	-0.5	Yes
R73(OV563)	Vacant-Residential	73.3	73.9	74.4	1.1	0.5	74.2	74.8	75.2	1.0	0.4	Yes
R74(O1048)	Residential	73.6	74.2	74.4	0.8	0.2	74.3	75.0	75.2	0.9	0.2	Yes
R75(O1033)	Single Family	72.3	72.9	73.3	1.0	0.4	72.9	73.7	74.0	1.1	0.3	Yes
R76(O353)	Residential	73.3	73.8	74.4	1.1	0.6	74.1	74.7	75.2	1.1	0.5	Yes
R77(O1035)	Residential	64.1	64.9	63.6	-0.5	-1.3	64.1	64.9	63.9	-0.2	-1.0	No
R78(OP169)	Park	71.7	72.4	71.5	-0.2	-0.9	72.5	73.1	72.4	-0.1	-0.7	Yes
R79(OV353)	Vacant-Residential	71.8	72.2	73.7	1.9	1.5	72.8	73.3	74.6	1.8	1.3	Yes
R80(OV777)	Vacant-Commercial	73.5	74.2	72.2	-1.3	-2.0	74.6	75.2	73.4	-1.2	-1.8	Yes
R81a(O666)	Multi-family	67.5	68.3	68.4	0.9	0.1	67.6	68.7	68.8	1.2	0.1	Yes
R81b(O666)	Multi-family	66.5	67.3	67.6	1.1	0.3	66.7	67.8	68.1	1.4	0.3	Yes
R82a(O102)	Multi-family	60.8	61.6	60.7	-0.1	-0.9	61.0	61.9	61.0	0.0	-0.9	No
R83(O204)	Residential	68.4	69.2	69.1	0.7	-0.1	68.5	69.7	69.4	0.9	-0.3	Yes
R85a(O315)	Multi-family	60.9	61.7	61.8	0.9	0.1	61.2	62.1	62.3	1.1	0.2	No
R84(O261)	Residential	68.6	69.4	69.2	0.6	-0.2	68.7	69.8	69.6	0.9	-0.2	Yes
R86(O169)	Office	68.9	69.5	68.9	0.0	-0.6	69.4	70.0	69.6	0.2	-0.4	Yes
R88(OV565)	Vacant-Commercial	74.2	74.9	73.0	-1.2	-1.9	74.7	75.4	73.7	-1.0	-1.7	Yes
R87(O519)	Residential	68.2	68.9	68.2	0.0	-0.7	68.6	69.6	68.7	0.1	-0.9	Yes
R89(O512)	Office	61.7	62.0	69.7	8.0	7.7	61.7	62.1	69.1	7.4	7.0	Yes
R92(OV1003)	Vacant-Residential	69.7	69.8	70.9	1.2	1.1	70.9	70.6	72.0	1.1	1.4	Yes
R90(OV204)	Vacant-Residential	67.2	68.0	68.1	0.9	0.1	67.3	68.5	68.4	1.1	-0.1	Yes
R91(OV666)	Vacant-Residential	67.0	67.8	68.1	1.1	0.3	67.0	68.2	68.5	1.5	0.3	Yes
R93(OV565)	Vacant-Commercial	74.3	75.1	74.0	-0.3	-1.1	75.2	75.9	75.0	-0.2	-0.9	Yes
R94(OV565)	Vacant-Commercial	73.8	74.6	72.8	-1.0	-1.8	74.4	75.2	73.4	-1.0	-1.8	Yes
R82b(O102)	Multi-family	60.8	61.5	61.7	0.9	0.2	61.1	61.9	61.8	0.7	-0.1	No
R95(O2)	Residential	68.8	69.6	69.3	0.5	-0.3	69.0	70.1	69.6	0.6	-0.5	Yes
R96(O1039)	Residential	64.5	65.2	64.6	0.1	-0.6	64.4	65.1	64.8	0.4	-0.3	No
R97(OV565)	Vacant-Commercial	73.4	74.2	72.3	-1.1	-1.9	74.0	74.8	72.8	-1.2	-2.0	Yes
R98(OV1003)	Vacant-Residential	69.8	69.8	70.8	1.0	1.0	70.7	70.5	71.7	1.0	1.2	Yes
R85b(O315)	Multi-family	62.4	63.2	63.1	0.7	-0.1	62.7	63.8	63.6	0.9	-0.2	No
R99(O514)	Residential	60.8	61.6	62.0	1.2	0.4	61.2	61.9	62.2	1.0	0.3	No
R100(O402)	Residential	63.2	63.8	64.4	1.2	0.6	63.2	63.7	64.9	1.7	1.2	No
R101(O311)	Residential	61.7	62.3	63.2	1.5	0.9	61.8	62.4	63.5	1.7	1.1	No
R102(O507)	Residential	62.7	63.4	63.6	0.9	0.2	62.7	63.4	63.9	1.2	0.5	No
R103(O733)	Residential	63.7	64.4	63.6	-0.1	-0.8	63.7	64.4	63.9	0.2	-0.5	No
R104(O128)	Residential	69.3	70.1	69.7	0.4	-0.4	69.5	70.6	70.0	0.5	-0.6	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R105(O207)	Residential	62.2	63.0	63.1	0.9	0.1	62.3	63.1	63.3	1.0	0.2	No
R106(O297)	Residential	69.8	70.6	70.1	0.3	-0.5	70.0	71.1	70.5	0.5	-0.6	Yes
R107(O745)	Office	69.4	69.9	70.2	0.8	0.3	70.1	70.5	70.7	0.6	0.2	Yes
R108(O205)	Residential	63.2	64.0	63.5	0.3	-0.5	63.2	64.0	63.7	0.5	-0.3	No
R109(O11)	Residential	63.9	64.7	63.8	-0.1	-0.9	63.9	64.7	64.0	0.1	-0.7	No
R110(O739)	Residential	63.5	64.3	63.9	0.4	-0.4	63.5	64.2	64.1	0.6	-0.1	No
R112(OV72)	Vacant-Residential	73.3	74.0	72.2	-1.1	-1.8	73.8	74.5	72.6	-1.2	-1.9	Yes
R111(O7)	Residential	58.0	58.9	59.6	1.6	0.7	58.0	59.2	60.1	2.1	0.9	No
R113(O24)	Residential	64.4	65.2	64.2	-0.2	-1.0	64.4	65.2	64.4	0.0	-0.8	No
R114(OV1049)	Vacant-Residential	64.1	64.9	64.2	0.1	-0.7	64.1	64.9	64.5	0.4	-0.4	No
R115(OV25)	Vacant-Residential	62.1	62.7	62.7	0.6	0.0	62.5	63.0	63.3	0.8	0.3	No
R116(OV72)	Vacant-Residential	72.9	73.6	72.1	-0.8	-1.5	73.3	74.1	72.6	-0.7	-1.5	Yes
R117(O222)	Residential	71.5	72.2	70.2	-1.3	-2.0	71.9	72.7	70.6	-1.3	-2.1	Yes
R122(OV1051)	Vacant-Residential	69.9	69.7	71.4	1.5	1.7	71.2	70.7	72.8	1.6	2.1	Yes
R118(O775)	Residential	70.7	71.2	71.9	1.2	0.7	71.3	72.0	72.7	1.4	0.7	Yes
R119(O304)	Residential	68.8	69.6	69.0	0.2	-0.6	69.1	70.2	69.5	0.4	-0.7	Yes
R120(OV1039)	Vacant-Residential	62.9	63.6	62.7	-0.2	-0.9	62.7	63.5	63.0	0.3	-0.5	No
R121(OV733)	Vacant-Residential	61.5	62.2	60.1	-1.4	-2.1	61.4	62.1	60.5	-0.9	-1.6	No
R123(O253)	Residential	70.2	70.7	71.5	1.3	0.8	70.8	71.5	72.3	1.5	0.8	Yes
R124(O20)	Residential	69.5	70.2	70.9	1.4	0.7	70.2	71.0	71.7	1.5	0.7	Yes
R125(O10)	Residential	68.6	69.4	69.2	0.6	-0.2	68.8	69.9	69.6	0.8	-0.3	Yes
R126(O1001)	Residential	70.1	70.4	70.9	0.8	0.5	70.8	70.9	71.6	0.8	0.7	Yes
R127(O418)	Residential	68.5	69.2	69.9	1.4	0.7	69.2	70.0	70.6	1.4	0.6	Yes
R128(O72)	Residential	72.2	73.0	72.6	0.4	-0.4	72.6	73.3	73.1	0.5	-0.2	Yes
R129(OV10)	Vacant-Residential	69.2	70.0	69.8	0.6	-0.2	69.5	70.6	70.2	0.7	-0.4	Yes
R130(OV434)	Vacant-Residential	70.5	71.3	69.9	-0.6	-1.4	70.9	71.7	70.3	-0.6	-1.4	Yes
R133(OV1051)	Vacant-Residential	69.8	69.5	71.4	1.6	1.9	71.2	70.7	72.9	1.7	2.2	Yes
R131(O199)	Residential	68.5	69.3	68.8	0.3	-0.5	68.9	69.9	69.3	0.4	-0.6	Yes
R132(OV704)	Vacant-Commercial	77.9	78.7	77.0	-0.9	-1.7	78.7	79.4	77.8	-0.9	-1.6	Yes
R134(O428)	Residential	67.7	68.4	69.2	1.5	0.8	68.3	69.2	69.9	1.6	0.7	Yes
R135(O1003)	Residential	69.2	69.7	70.0	0.8	0.3	69.7	70.1	70.4	0.7	0.3	Yes
R136(OV10)	Vacant-Residential	68.3	69.1	69.1	0.8	0.0	68.5	69.6	69.5	1.0	-0.1	Yes
R137(O206)	Multi-family	60.1	60.7	61.3	1.2	0.6	60.0	60.6	61.8	1.8	1.2	No
R138(O413)	Residential	55.2	55.8	57.8	2.6	2.0	55.2	55.7	58.0	2.8	2.3	No
R139(O202)	Residential	66.2	66.9	68.1	1.9	1.2	66.9	67.7	68.8	1.9	1.1	Yes
R140(O38)	Residential	65.6	66.3	66.9	1.3	0.6	66.0	67.0	67.6	1.6	0.6	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R141(O403)	Residential	67.8	68.6	68.1	0.3	-0.5	68.2	69.2	68.6	0.4	-0.6	Yes
R142(O300)	Residential	65.6	66.3	66.8	1.2	0.5	66.1	67.0	67.5	1.4	0.5	Yes
R143(O306)	Residential	56.9	57.7	58.3	1.4	0.6	56.9	58.1	58.8	1.9	0.7	No
R144(O511)	Residential	68.1	68.9	68.4	0.3	-0.5	68.5	69.5	68.9	0.4	-0.6	Yes
R145(O412)	Residential	67.4	68.2	67.9	0.5	-0.3	67.8	68.9	68.5	0.7	-0.4	Yes
R146(O434)	Residential	68.7	69.5	69.6	0.9	0.1	69.1	69.8	70.0	0.9	0.2	Yes
R147(OV260)	Vacant-Residential	59.7	60.5	60.2	0.5	-0.3	60.0	61.1	60.7	0.7	-0.4	No
R148(O42)	Residential	68.6	69.1	69.7	1.1	0.6	69.0	69.4	70.0	1.0	0.6	Yes
R149(O727)	Residential	69.6	69.9	70.7	1.1	0.8	70.2	70.3	71.3	1.1	1.0	Yes
R150(O647)	Residential	64.3	64.9	62.9	-1.4	-2.0	64.8	65.3	63.6	-1.2	-1.7	No
R151(OV428)	Vacant-Residential	66.4	67.1	68.5	2.1	1.4	67.0	67.9	69.1	2.1	1.2	Yes
R152(O229)	Residential	67.8	68.6	68.7	0.9	0.1	68.2	68.9	69.1	0.9	0.2	Yes
M-3(O70)	Residential	76.9	77.7	78.1	1.2	0.4	77.5	78.2	78.6	1.1	0.4	Yes
R154(O328)	Residential	64.4	65.2	65.4	1.0	0.2	64.6	65.4	65.7	1.1	0.3	No
R155(OV328)	Vacant-Commercial	52.6	52.7	51.6	-1.0	-1.1	53.4	53.2	52.5	-0.9	-0.7	No
R156(O43)	Residential	66.7	67.4	67.5	0.8	0.1	67.0	67.7	67.9	0.9	0.2	Yes
R157(O116)	Residential	69.2	69.5	70.4	1.2	0.9	69.8	69.9	71.0	1.2	1.1	Yes
R158(O103)	Residential	67.2	67.9	69.2	2.0	1.3	67.6	68.2	69.5	1.9	1.3	Yes
R159(OV38)	Vacant-Residential	66.0	66.8	67.3	1.3	0.5	66.4	67.5	67.9	1.5	0.4	Yes
R160(O1049)	Single Family	62.6	63.5	61.2	-1.4	-2.3	62.4	63.4	61.5	-0.9	-1.9	No
R161(OV1051)	Vacant-Residential	70.3	70.2	71.4	1.1	1.2	71.4	71.1	72.6	1.2	1.5	Yes
R162(O1005)	Residential	66.8	67.5	69.3	2.5	1.8	67.1	67.8	69.5	2.4	1.7	Yes
R163(O1008)	Residential	67.1	67.7	69.4	2.3	1.7	67.5	67.9	69.7	2.2	1.8	Yes
R164(O260)	Single Family	46.7	47.4	46.4	-0.3	-1.0	47.0	47.9	46.8	-0.2	-1.1	No
R165(O768)	Office	68.1	67.5	69.3	1.2	1.8	68.6	67.7	69.7	1.1	2.0	Yes
R166(O463)	Residential	75.2	76.0	76.2	1.0	0.2	75.7	76.4	76.6	0.9	0.2	Yes
R167(O766)	Office	63.3	63.8	63.9	0.6	0.1	63.6	64.1	63.9	0.3	-0.2	No
R168(O750)	Residential	65.8	66.6	66.6	0.8	0.0	66.1	66.8	67.0	0.9	0.2	Yes
R169(O213)	Residential	52.1	52.9	52.3	0.2	-0.6	52.1	53.3	52.6	0.5	-0.7	No
R170(O107)	Office	65.3	66.0	67.3	2.0	1.3	65.6	66.3	67.2	1.6	0.9	Yes
R171(O653 R-6)	Commercial	71.7	72.2	72.0	0.3	-0.2	70.8	71.5	71.5	0.7	0.0	Yes
R172(O134)	Residential	64.6	65.4	65.5	0.9	0.1	64.9	65.6	65.9	1.0	0.3	No
R173(O443 R-5)	Residential	65.2	65.6	64.2	-1.0	-1.4	65.9	66.0	65.0	-0.9	-1.0	No
R174(O671)	Residential	74.7	75.5	75.7	1.0	0.2	75.1	75.9	76.1	1.0	0.2	Yes
R175(O617)	Office	62.6	63.3	63.3	0.7	0.0	63.1	63.8	63.4	0.3	-0.4	No
R176(O1010)	Residential	64.9	65.7	68.0	3.1	2.3	65.0	65.7	68.2	3.2	2.5	Yes



Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R177(O672)	Residential	73.9	74.7	74.9	1.0	0.2	74.3	75.1	75.2	0.9	0.1	Yes
R178(O784)	Residential	70.5	71.3	71.4	0.9	0.1	70.8	71.6	71.8	1.0	0.2	Yes
R179(O760)	Residential	63.9	64.7	65.0	1.1	0.3	64.1	64.9	65.3	1.2	0.4	No
R180(O1009)	Residential	67.9	68.7	68.6	0.7	-0.1	68.2	69.0	68.8	0.6	-0.2	Yes
R181(O644)	Residential	75.6	76.4	76.6	1.0	0.2	76.1	76.8	77.0	0.9	0.2	Yes
R182(O1020)	Residential	66.2	67.0	67.2	1.0	0.2	66.2	67.0	67.4	1.2	0.4	Yes
R183(O447)	Office	71.5	72.1	71.9	0.4	-0.2	70.7	71.4	71.4	0.7	0.0	Yes
R184(O129)	Residential	67.6	68.4	68.4	0.8	0.0	67.8	68.6	68.6	0.8	0.0	Yes
R185(O627)	Vacant-Commercial	64.9	65.7	68.4	3.5	2.7	65.0	65.9	68.6	3.6	2.7	Yes
R186(O762)	Residential	63.2	64.0	64.3	1.1	0.3	63.3	64.1	64.6	1.3	0.5	No
R187(OV436)	Vacant-Commercial	78.2	79.0	77.1	-1.1	-1.9	79.0	79.7	77.9	-1.1	-1.8	Yes
R188(O167)	Residential	71.5	72.3	72.4	0.9	0.1	71.8	72.6	72.8	1.0	0.2	Yes
R189(O111)	Multi-family	58.4	59.2	56.0	-2.4	-3.2	58.2	59.2	56.3	-1.9	-2.9	No
R190(O804)	Residential	67.6	68.4	68.1	0.5	-0.3	67.8	68.6	68.3	0.5	-0.3	Yes
R191(O1045)	Residential	51.7	52.4	51.3	-0.4	-1.1	51.9	52.8	51.5	-0.4	-1.3	No
R192(OV407)	Vacant-Residential	59.3	60.1	60.7	1.4	0.6	59.2	60.4	60.9	1.7	0.5	No
R193(O168)	Residential	70.4	71.2	71.4	1.0	0.2	70.7	71.5	71.7	1.0	0.2	Yes
R194(O1038)	Residential	66.4	67.1	67.2	0.8	0.1	66.3	67.1	67.4	1.1	0.3	Yes
R195(O1006)	Single Family	66.7	67.0	68.9	2.2	1.9	67.8	68.2	69.8	2.0	1.6	Yes
R196(OV521)	Vacant-Commercial	65.8	64.9	66.7	0.9	1.8	67.6	66.8	68.5	0.9	1.7	Yes
R197(O130)	Vacant-Residential	73.3	74.1	74.3	1.0	0.2	73.7	74.5	74.7	1.0	0.2	Yes
R198(O252)	Single Family	64.0	64.1	66.8	2.8	2.7	65.5	65.6	67.9	2.4	2.3	Yes
R199(O521)	Vacant-Commercial	64.3	63.9	65.9	1.6	2.0	66.0	65.6	67.4	1.4	1.8	Yes
R200(O724)	Residential	59.2	60.1	61.6	2.4	1.5	59.2	60.4	62.0	2.8	1.6	No
R201(O135)	Residential	58.0	57.9	56.7	-1.3	-1.2	58.8	58.4	57.7	-1.1	-0.7	No
R202(OV775)	Vacant-Residential	66.8	67.4	68.4	1.6	1.0	67.3	68.2	69.1	1.8	0.9	Yes
R205(OV775)	Vacant-Residential	64.9	65.5	66.6	1.7	1.1	65.4	66.2	67.3	1.9	1.1	Yes
R203(O661)	Church	64.9	65.4	67.9	3.0	2.5	66.2	66.6	68.7	2.5	2.1	Yes
R204(O301)	Residential	68.5	69.3	69.6	1.1	0.3	68.8	69.9	70.1	1.3	0.2	Yes
R206(OV312)	Vacant-Residential	60.8	61.6	61.2	0.4	-0.4	60.5	61.3	61.4	0.9	0.1	No
R207(O517)	Residential	62.1	62.8	63.4	1.3	0.6	62.6	63.5	64.1	1.5	0.6	No
R208(O133)	Residential	63.8	64.5	64.0	0.2	-0.5	64.1	64.7	64.4	0.3	-0.3	No
R209(O208)	Vacant-Commercial	62.2	63.0	60.8	-1.4	-2.2	62.0	63.0	60.8	-1.2	-2.2	No
R210(O147)	Office	58.6	59.0	62.4	3.8	3.4	59.3	59.7	62.5	3.2	2.8	No
R211(O622)	Residential	61.9	62.7	62.9	1.0	0.2	62.0	63.2	63.3	1.3	0.1	No
R212(O407)	Residential	60.0	60.9	61.2	1.2	0.3	60.2	61.3	61.6	1.4	0.3	No

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R213(O719)	Residential	60.1	60.9	61.4	1.3	0.5	60.2	61.4	61.9	1.7	0.5	No
R214(O346)	Residential	67.3	68.2	68.0	0.7	-0.2	67.5	68.6	68.3	0.8	-0.3	Yes
R215(O71)	Residential	70.1	70.9	71.0	0.9	0.1	70.4	71.2	71.3	0.9	0.1	Yes
R216(O325)	Residential	59.5	60.1	60.9	1.4	0.8	60.2	60.9	61.7	1.5	0.8	No
R217(OV296)	Vacant-Residential	63.2	64.0	64.8	1.6	0.8	63.6	64.7	65.3	1.7	0.6	No
R218(O665)	Residential	67.4	68.2	68.0	0.6	-0.2	67.5	68.6	68.3	0.8	-0.3	Yes
R219(O131)	Residential	63.1	63.7	63.9	0.8	0.2	63.4	63.9	64.3	0.9	0.4	No
R224a(O12)	Multi-family	53.8	54.5	54.0	0.2	-0.5	53.9	54.7	54.0	0.1	-0.7	No
R220(O296)	Residential	62.4	63.2	63.8	1.4	0.6	62.8	63.8	64.4	1.6	0.6	No
R221(O40)	Residential	64.0	64.6	65.8	1.8	1.2	64.6	65.4	66.5	1.9	1.1	Yes
R222(O122)	Residential	59.7	60.3	62.2	2.5	1.9	60.6	61.3	63.0	2.4	1.7	No
R223(O1002)	Residential	59.9	60.8	61.6	1.7	0.8	59.9	61.1	61.8	1.9	0.7	No
R225(O3)	Residential	61.3	61.8	63.3	2.0	1.5	62.1	62.8	64.1	2.0	1.3	No
R226(O1047)	Residential	66.8	67.7	67.5	0.7	-0.2	66.9	68.1	67.8	0.9	-0.3	Yes
R227(O5)	Residential	70.0	69.9	71.1	1.1	1.2	71.1	70.8	72.3	1.2	1.5	Yes
R228(O444)	Residential	69.1	69.3	70.0	0.9	0.7	69.8	69.8	70.8	1.0	1.0	Yes
R229(OV611)	Vacant-Residential	62.8	63.7	64.5	1.7	0.8	63.2	64.3	65.0	1.8	0.7	No
R230(O855)	Office	71.0	71.4	71.3	0.3	-0.1	70.3	70.7	70.8	0.5	0.1	Yes
R231(O761)	Residential	62.7	63.5	64.0	1.3	0.5	62.8	63.6	64.3	1.5	0.7	No
R232(O634)	Residential	63.3	64.0	62.9	-0.4	-1.1	63.6	64.2	63.3	-0.3	-0.9	No
R233(OV321)	Vacant-Residential	71.7	72.5	72.6	0.9	0.1	72.2	72.9	73.0	0.8	0.1	Yes
R234(OV223)	Vacant-Residential	63.3	64.0	63.8	0.5	-0.2	63.5	64.2	64.2	0.7	0.0	No
R235(O209)	Residential	68.6	69.0	69.7	1.1	0.7	69.2	69.4	70.3	1.1	0.9	Yes
R236(O722)	Residential	62.0	62.8	62.6	0.6	-0.2	62.3	63.4	63.1	0.8	-0.3	No
R237(O611)	Multi-family	68.6	69.4	69.7	1.1	0.3	68.7	69.9	70.1	1.4	0.2	Yes
R238(OV135)	Vacant-Residential	61.9	62.5	62.4	0.5	-0.1	62.3	62.7	62.9	0.6	0.2	No
R239(O436 R-7)	Residential	77.4	78.2	76.3	-1.1	-1.9	78.1	78.8	77.0	-1.1	-1.8	Yes
R240(OV562)	Vacant-Residential	64.0	64.8	65.4	1.4	0.6	63.8	64.6	65.5	1.7	0.9	No
R241(O562)	Residential	62.8	63.6	63.1	0.3	-0.5	62.6	63.4	63.3	0.7	-0.1	No
R242(O1034)	Residential	65.0	65.8	65.5	0.5	-0.3	65.2	66.3	65.9	0.7	-0.4	No
R243(O866)	Office	63.9	64.1	64.6	0.7	0.5	63.8	63.9	64.4	0.6	0.5	No
R244(O309)	Residential	55.5	56.3	56.3	0.8	0.0	55.6	56.4	56.6	1.0	0.2	No
R245(O652)	Residential	75.9	76.7	74.8	-1.1	-1.9	76.5	77.2	75.5	-1.0	-1.7	Yes
R246(O140)	Residential	63.0	63.7	63.2	0.2	-0.5	63.3	63.9	63.5	0.2	-0.4	No
R247(O539)	Residential	68.0	68.8	69.2	1.2	0.4	68.3	69.4	69.7	1.4	0.3	Yes
R248(O218)	Residential	59.1	59.9	58.9	-0.2	-1.0	58.7	59.6	59.1	0.4	-0.5	No

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R249(O530)	Residential	68.8	69.6	69.7	0.9	0.1	69.2	69.9	70.0	0.8	0.1	Yes
R250(O200)	Residential	62.0	62.8	63.7	1.7	0.9	62.3	63.4	64.3	2.0	0.9	No
R224b(O12)	Multi-family	54.9	55.7	55.2	0.3	-0.5	54.7	55.5	55.1	0.4	-0.4	No
R251(O673)	Single Family	68.8	69.5	69.6	0.8	0.1	69.0	69.8	69.8	0.8	0.0	Yes
R252a(O118)	Multi-family	64.2	65.0	64.9	0.7	-0.1	64.3	65.1	65.0	0.7	-0.1	No
R253(O516)	Residential	47.9	48.7	46.7	-1.2	-2.0	48.2	49.2	47.0	-1.2	-2.2	No
R254(O409)	Residential	50.5	51.2	49.8	-0.7	-1.4	50.6	51.5	50.2	-0.4	-1.3	No
R255(O769)	Residential	74.4	75.2	74.1	-0.3	-1.1	74.9	75.7	74.7	-0.2	-1.0	Yes
R256(O1050)	Residential	69.3	69.3	70.3	1.0	1.0	70.2	70.0	71.4	1.2	1.4	Yes
R257a(O75)	Multi-family	64.8	65.6	66.7	1.9	1.1	65.2	66.2	67.3	2.1	1.1	Yes
R258(O1061)	Residential	60.5	61.3	59.2	-1.3	-2.1	60.2	61.0	59.2	-1.0	-1.8	No
R259(O515)	Residential	57.7	58.6	57.8	0.1	-0.8	57.5	58.4	57.9	0.4	-0.5	No
R257b(O75)	Multi-family	64.4	65.2	66.4	2.0	1.2	64.8	65.8	66.9	2.1	1.1	Yes
R260(OV721)	Vacant-Commercial	63.9	64.6	66.6	2.7	2.0	64.7	65.5	67.3	2.6	1.8	Yes
R261(O806)	Residential	62.6	63.2	67.9	5.3	4.7	62.6	63.3	68.0	5.4	4.7	Yes
R262(O1042)	Residential	69.4	69.4	70.5	1.1	1.1	70.6	70.3	71.9	1.3	1.6	Yes
R263(O158)	Residential	63.7	64.4	65.6	1.9	1.2	64.1	65.1	66.2	2.1	1.1	Yes
R264(O117)	Residential	57.2	58.0	57.8	0.6	-0.2	57.2	58.0	57.9	0.7	-0.1	No
R265(O464)	Residential	59.9	60.7	61.8	1.9	1.1	60.0	60.7	62.1	2.1	1.4	No
R266(O1016)	Residential	61.6	62.4	67.8	6.2	5.4	61.6	62.4	68.0	6.4	5.6	Yes
R268a(O360)	Residential	62.9	63.5	68.0	5.1	4.5	62.9	63.5	68.1	5.2	4.6	Yes
R267(O923)	Residential	61.9	62.7	63.1	1.2	0.4	62.0	62.8	63.5	1.5	0.7	No
R269(O419)	Residential	62.8	63.6	64.8	2.0	1.2	63.3	64.2	65.4	2.1	1.2	No
R270(O571)	Residential	73.4	74.2	73.6	0.2	-0.6	73.8	74.5	74.2	0.4	-0.3	Yes
R271(O1012)	Residential	65.4	66.1	67.5	2.1	1.4	65.5	66.2	67.7	2.2	1.5	Yes
R272(O607 R-8)	Office	69.8	70.4	70.8	1.0	0.4	69.4	70.0	70.5	1.1	0.5	Yes
R273(O113)	Residential	55.1	56.0	50.7	-4.4	-5.3	54.8	55.7	50.6	-4.2	-5.1	No
R252b(O118)	Multi-family	58.2	59.0	55.0	-3.2	-4.0	58.0	59.2	55.0	-3.0	-4.2	No
R274(O747)	Residential	58.0	58.8	67.3	9.3	8.5	57.9	58.6	67.4	9.5	8.8	Yes
R277(OV360)	Vacant-Residential	63.3	64.1	67.8	4.5	3.7	63.4	64.1	67.9	4.5	3.8	Yes
R275(O572)	Residential	58.9	59.7	60.9	2.0	1.2	58.9	59.7	61.2	2.3	1.5	No
R276(O226)	Residential	61.0	61.8	62.4	1.4	0.6	61.0	61.8	62.7	1.7	0.9	No
R278(O997)	Residential	59.9	60.6	67.5	7.6	6.9	60.0	60.6	67.6	7.6	7.0	Yes
R279(O542)	Residential	58.9	59.5	67.2	8.3	7.7	58.7	59.3	67.3	8.6	8.0	Yes
R280(O146)	Residential	61.8	62.1	62.8	1.0	0.7	62.4	62.6	63.6	1.2	1.0	No
R283(OV360)	Vacant-Residential	62.9	63.5	67.6	4.7	4.1	62.8	63.4	67.7	4.9	4.3	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R281(O217)	Residential	46.8	47.6	44.7	-2.1	-2.9	46.9	47.9	44.9	-2.0	-3.0	No
R282(O506)	Residential	58.7	59.2	67.1	8.4	7.9	58.6	59.1	67.3	8.7	8.2	Yes
R284(O890)	Residential	59.1	59.9	60.0	0.9	0.1	59.4	60.1	60.3	0.9	0.2	No
R285(O978)	Residential	63.9	64.7	65.0	1.1	0.3	64.2	65.0	65.3	1.1	0.3	No
R286(O352)	Residential	58.0	58.8	60.1	2.1	1.3	58.0	58.8	60.3	2.3	1.5	No
R287(O674)	Residential	65.3	66.1	66.2	0.9	0.1	65.7	66.4	66.5	0.8	0.1	Yes
R288(O785)	Residential	64.7	65.5	65.7	1.0	0.2	65.0	65.7	66.0	1.0	0.3	Yes
R289(O406)	Residential	69.2	69.0	70.3	1.1	1.3	70.5	70.1	71.8	1.3	1.7	Yes
R290(O416)	Residential	63.1	63.9	65.2	2.1	1.3	63.4	64.4	65.7	2.3	1.3	No
R291(O1011)	Residential	57.6	58.0	61.5	3.9	3.5	57.6	57.9	61.7	4.1	3.8	No
R292(O718)	Residential	58.6	59.3	66.8	8.2	7.5	58.4	59.0	67.0	8.6	8.0	Yes
R293(O752)	Residential	59.9	60.7	61.7	1.8	1.0	60.0	60.7	62.0	2.0	1.3	No
R294(O1031)	Residential	52.4	52.8	57.9	5.5	5.1	52.9	53.2	58.4	5.5	5.2	No
R268b(O360)	Recreational	63.0	63.6	67.1	4.1	3.5	63.0	63.6	67.2	4.2	3.6	Yes
R298(O999)	Residential	59.4	60.3	65.8	6.4	5.5	59.6	60.4	65.9	6.3	5.5	No
R299(O1055)	Residential	58.5	59.3	65.2	6.7	5.9	58.7	59.5	65.2	6.5	5.7	No
R300(O1054)	Residential	57.2	57.9	64.2	7.0	6.3	57.2	57.9	64.2	7.0	6.3	No
R301(O1052)	Office	54.3	55.0	63.3	9.0	8.3	54.2	54.9	63.3	9.1	8.4	No
R302(O1000)	Residential	57.4	58.2	58.7	1.3	0.5	57.5	58.6	59.2	1.7	0.6	No
R303(O97)	Office	66.4	65.2	67.5	1.1	2.3	66.6	65.1	67.0	0.4	1.9	Yes
R304(O1053)	Residential	56.3	57.1	63.2	6.9	6.1	56.0	56.8	63.2	7.2	6.4	No
R305(O998)	Residential	56.0	56.8	57.2	1.2	0.4	56.1	57.1	57.7	1.6	0.6	No
R306(O225)	Residential	62.5	63.2	63.4	0.9	0.2	62.6	63.4	63.6	1.0	0.2	No
R307(O298)	Residential	69.1	69.0	70.2	1.1	1.2	70.4	69.9	71.7	1.3	1.8	Yes
R308(OV155)	Vacant-Residential	62.2	62.8	61.1	-1.1	-1.7	62.6	63.0	61.6	-1.0	-1.4	No
R309(O232)	Residential	46.6	47.1	47.0	0.4	-0.1	47.0	47.4	47.6	0.6	0.2	No
R310(O856)	Residential	67.4	68.1	68.0	0.6	-0.1	67.7	68.5	68.4	0.7	-0.1	Yes
R311(O1026)	Residential	52.3	53.1	53.4	1.1	0.3	52.5	53.4	53.8	1.3	0.4	No
R312(O32)	Residential	57.9	58.6	59.1	1.2	0.5	58.0	58.7	59.4	1.4	0.7	No
R313(O888)	Residential	57.9	58.7	59.9	2.0	1.2	58.0	58.7	60.2	2.2	1.5	No
R314(O1022)	Residential	53.9	54.6	54.6	0.7	0.0	54.0	54.8	54.8	0.8	0.0	No
R315(O619)	Residential	53.5	53.6	56.5	3.0	2.9	54.6	54.5	57.3	2.7	2.8	No
R316a(O1029)	Residential	56.1	56.9	57.6	1.5	0.7	56.1	56.9	57.8	1.7	0.9	No
R316b(O1029)	Recreational	57.0	57.8	57.8	0.8	0.0	56.8	57.5	57.8	1.0	0.3	No
R317(O833)	Residential	49.1	49.8	49.5	0.4	-0.3	49.2	49.8	49.8	0.6	0.0	No
R318(O736)	Residential	59.6	60.4	59.4	-0.2	-1.0	59.2	60.1	59.5	0.3	-0.6	No

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R319(OP1052)	Recreational (Park)	63.5	64.3	63.5	0.0	-0.8	63.6	64.5	63.7	0.1	-0.8	No
R320(O567)	Residential	58.2	59.0	59.5	1.3	0.5	58.3	59.0	59.8	1.5	0.8	No
R321(O460)	Residential	49.4	50.1	49.5	0.1	-0.6	49.4	50.0	49.9	0.5	-0.1	No
R322(O670)	Residential	48.9	49.6	49.5	0.6	-0.1	49.0	49.7	49.8	0.8	0.1	No
R323(O166)	Residential	49.0	49.7	49.5	0.5	-0.2	49.2	49.8	49.8	0.6	0.0	No
R324(O889)	Residential	47.0	47.7	47.4	0.4	-0.3	47.2	47.9	47.8	0.6	-0.1	No
R325(O570)	Residential	50.9	51.7	48.8	-2.1	-2.9	50.3	51.0	49.2	-1.1	-1.8	No
R326(O265)	Residential	61.6	62.4	62.7	1.1	0.3	62.0	62.8	63.0	1.0	0.2	No
R327(O404)	Residential	62.1	62.7	64.9	2.8	2.2	62.0	62.7	65.0	3.0	2.3	No
R328(OV465)	Vacant-Residential	62.3	62.8	61.4	-0.9	-1.4	62.7	63.0	62.0	-0.7	-1.0	No
R329(O773)	Office	72.2	72.8	72.6	0.4	-0.2	71.6	72.2	72.3	0.7	0.1	Yes
R330(O1036)	Residential	57.8	58.0	59.2	1.4	1.2	58.9	58.8	60.3	1.4	1.5	No
R331(O28)	Recreational	63.3	64.2	64.0	0.7	-0.2	63.4	64.3	64.1	0.7	-0.2	No
R332(OV833)	Vacant-Residential	55.0	55.8	56.0	1.0	0.2	55.0	55.8	55.9	0.9	0.1	No
R333(O164)	Residential	58.2	58.9	58.7	0.5	-0.2	58.3	59.0	59.1	0.8	0.1	No
R334(O655 R-23)	Commercial	60.3	58.3	59.0	-1.3	0.7	61.6	59.4	59.9	-1.7	0.5	No
R335(O148)	Residential	62.6	62.9	63.4	0.8	0.5	63.4	63.5	64.3	0.9	0.8	No
R336(OV164)	Vacant-Residential	56.5	57.2	55.0	-1.5	-2.2	56.8	57.5	55.4	-1.4	-2.1	No
R337(O389 R-10)	Office	71.4	71.9	72.1	0.7	0.2	70.8	71.4	71.9	1.1	0.5	Yes
R338(O920)	Single Family	61.8	62.6	63.0	1.2	0.4	61.9	62.6	63.2	1.3	0.6	No
R339(O330)	Office	58.7	59.4	58.6	-0.1	-0.8	58.4	59.1	58.7	0.3	-0.4	No
R340(O115)	Residential	57.8	58.4	58.5	0.7	0.1	57.9	58.5	58.7	0.8	0.2	No
R341(OP976)	Recreational (Park)	66.4	66.5	67.4	1.0	0.9	67.4	67.2	68.6	1.2	1.4	Yes
R342(O318)	Residential	61.4	62.1	63.5	2.1	1.4	61.3	62.0	63.5	2.2	1.5	No
R343(O720)	Church	64.5	65.0	64.6	0.1	-0.4	65.1	65.4	65.3	0.2	-0.1	No
R344(O4)	Residential	59.3	60.0	59.8	0.5	-0.2	59.4	60.0	60.0	0.6	0.0	No
R345(O236)	Residential	59.6	60.2	60.4	0.8	0.2	59.8	60.3	60.6	0.8	0.3	No
R346a(O451 R-30)	Commercial	63.3	63.1	63.4	0.1	0.3	60.7	59.9	60.8	0.1	0.9	No
R347(OV720)	Vacant-Residential	64.0	64.5	64.0	0.0	-0.5	64.4	64.9	64.6	0.2	-0.3	No
R348(O531)	Residential	56.0	56.7	56.0	0.0	-0.7	56.2	57.0	56.3	0.1	-0.7	No
R349(O772)	Residential	59.9	60.5	60.7	0.8	0.2	60.1	60.7	61.0	0.9	0.3	No
R350(O763)	Office	61.9	61.6	62.4	0.5	0.8	61.6	61.3	62.3	0.7	1.0	No
R351(OV58)	Vacant-Residential	62.2	62.9	63.1	0.9	0.2	62.4	63.1	63.4	1.0	0.3	No
R353a(O931 R-14)	Commercial	66.3	67.1	67.6	1.3	0.5	66.2	67.0	67.3	1.1	0.3	Yes
R352(O764)	Residential	60.5	61.2	61.1	0.6	-0.1	60.8	61.4	61.4	0.6	0.0	No
R354(OV149)	Vacant-Residential	63.4	64.0	63.5	0.1	-0.5	63.8	64.3	64.1	0.3	-0.2	No

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R355(O723)	Residential	57.8	58.4	61.6	3.8	3.2	57.8	58.3	61.7	3.9	3.4	No
R356(O990)	Residential	59.9	60.6	62.6	2.7	2.0	60.1	60.6	62.8	2.7	2.2	No
R357(O992)	Residential	60.8	61.5	63.0	2.2	1.5	61.0	61.6	63.2	2.2	1.6	No
R358(O264)	Residential	55.7	56.5	57.5	1.8	1.0	56.2	56.9	57.8	1.6	0.9	No
R359(O284)	Office	66.0	66.7	69.0	3.0	2.3	66.2	66.9	68.9	2.7	2.0	Yes
R360(O618)	Residential	61.2	61.9	63.2	2.0	1.3	61.4	62.0	63.3	1.9	1.3	No
R361(O995)	Residential	60.9	61.6	61.4	0.5	-0.2	61.2	61.8	61.7	0.5	-0.1	No
R362(OV93)	Vacant-Commercial	73.2	73.7	75.1	1.9	1.4	74.1	74.5	75.8	1.7	1.3	Yes
R363(O993)	Residential	61.3	62.0	62.3	1.0	0.3	61.6	62.2	62.5	0.9	0.3	No
R364(O240)	Residential	57.0	57.8	56.7	-0.3	-1.1	57.4	58.2	56.9	-0.5	-1.3	No
R365(O994)	Residential	61.6	62.3	62.4	0.8	0.1	61.9	62.5	62.6	0.7	0.1	No
R366(O93 R-9)	Single Family	72.5	73.0	74.6	2.1	1.6	73.2	73.7	75.1	1.9	1.4	Yes
R367(O610)	Residential	64.1	64.8	64.6	0.5	-0.2	64.2	65.0	64.8	0.6	-0.2	No
R368(O1015)	Residential	61.2	61.9	62.8	1.6	0.9	61.3	61.9	62.9	1.6	1.0	No
R369(O991)	Residential	61.5	62.2	62.2	0.7	0.0	61.8	62.4	62.5	0.7	0.1	No
R370(OP535)	Recreational (Park)	67.6	68.1	68.4	0.8	0.3	67.4	67.9	68.7	1.3	0.8	Yes
R371(O729)	Residential	61.4	62.1	62.1	0.7	0.0	61.7	62.3	62.3	0.6	0.0	No
R372(OV248)	Vacant-Recreational	58.9	59.6	60.0	1.1	0.4	59.1	59.8	60.2	1.1	0.4	No
R373(OV946)	Vacant-Residential	66.4	65.4	68.4	2.0	3.0	68.5	67.3	70.5	2.0	3.2	Yes
R374(OV93)	Vacant-Commercial	70.0	70.6	72.3	2.3	1.7	70.9	71.4	72.7	1.8	1.3	Yes
R353b(O931 R-13)	Commercial	73.1	73.7	73.6	0.5	-0.1	72.8	73.4	73.3	0.5	-0.1	Yes
R375(O559)	Vacant-Commercial	69.0	69.6	69.6	0.6	0.0	69.4	70.0	70.0	0.6	0.0	Yes
R376(O493)	Residential	66.8	67.5	69.1	2.3	1.6	67.6	68.2	69.4	1.8	1.2	Yes
R377(O92)	Residential	70.3	70.9	72.7	2.4	1.8	71.1	71.7	73.1	2.0	1.4	Yes
R378(O637 R-21)	Office	64.3	64.0	64.9	0.6	0.9	64.0	63.7	64.8	0.8	1.1	No
R379(O895)	Residential	72.4	72.9	74.8	2.4	1.9	73.3	73.8	75.4	2.1	1.6	Yes
R380(O602)	Residential	70.5	71.2	72.9	2.4	1.7	71.4	71.9	73.4	2.0	1.5	Yes
R381(O843)	Vacant-Recreational	57.7	58.5	57.3	-0.4	-1.2	58.1	58.8	58.1	0.0	-0.7	No
R382(O755)	Office	68.4	69.1	69.4	1.0	0.3	68.0	68.7	69.8	1.8	1.1	Yes
R383(O41 R-19)	Commercial	66.1	66.5	67.9	1.8	1.4	65.7	66.0	68.2	2.5	2.2	Yes
R384(OV92)	Vacant-Residential	64.2	64.9	65.9	1.7	1.0	64.8	65.4	66.2	1.4	0.8	Yes
R385(O262)	Residential	69.0	69.4	69.9	0.9	0.5	69.5	69.9	69.8	0.3	-0.1	Yes
R386(O984)	Multi-family	71.5	72.1	73.7	2.2	1.6	72.4	72.9	74.3	1.9	1.4	Yes
R387(O88)	Multi-family	63.0	63.6	63.6	0.6	0.0	63.4	64.0	63.8	0.4	-0.2	No
M-6(O560)	Office	73.0	73.6	75.9	2.9	2.3	73.1	73.7	75.8	2.7	2.1	Yes
R389(O91)	Multi-family	65.4	65.8	66.1	0.7	0.3	65.7	66.1	66.2	0.5	0.1	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R390(O90)	Multi-family	64.1	64.7	64.7	0.6	0.0	64.4	65.0	64.9	0.5	-0.1	No
R391(O356)	Single Family	61.9	62.6	62.1	0.2	-0.5	62.2	62.9	62.5	0.3	-0.4	No
R392(O590)	Multi-family	62.2	62.9	62.6	0.4	-0.3	62.6	63.2	62.9	0.3	-0.3	No
R393(O355)	Single Family	61.4	62.2	61.8	0.4	-0.4	61.8	62.5	62.3	0.5	-0.2	No
R394(O357)	Multi-family	61.3	62.0	61.8	0.5	-0.2	61.8	62.4	62.1	0.3	-0.3	No
R395(O450)	Residential	67.0	67.7	67.0	0.0	-0.7	67.3	68.0	67.3	0.0	-0.7	Yes
R396(O453)	Residential	67.7	68.5	67.9	0.2	-0.6	68.0	68.7	68.2	0.2	-0.5	Yes
R397(O455)	Vacant-Residential	67.4	67.9	67.8	0.4	-0.1	67.7	68.1	67.9	0.2	-0.2	Yes
R398(O341)	Vacant-Residential	67.2	67.8	67.7	0.5	-0.1	67.6	68.1	67.9	0.3	-0.2	Yes
R399(OV455)	Vacant-Residential	67.1	67.5	67.5	0.4	0.0	67.4	67.8	67.7	0.3	-0.1	Yes
R400(OV341)	Vacant-Residential	66.4	67.1	67.1	0.7	0.0	66.9	67.5	67.4	0.5	-0.1	Yes
R401(OV450)	Vacant-Residential	65.7	66.4	66.0	0.3	-0.4	66.0	66.7	66.4	0.4	-0.3	Yes
R402(OV358)	Vacant-Recreational	54.2	54.9	54.8	0.6	-0.1	54.3	54.9	54.9	0.6	0.0	No
R403(O767)	Residential	64.0	63.6	64.3	0.3	0.7	63.8	63.3	64.1	0.3	0.8	No
R404(OV767)	Vacant-Residential	59.5	60.2	60.6	1.1	0.4	59.8	60.4	60.7	0.9	0.3	No
R405(O340)	Residential	60.1	58.5	59.3	-0.8	0.8	59.6	57.3	58.6	-1.0	1.3	No
R406(O244)	Residential	55.9	54.1	55.0	-0.9	0.9	55.4	52.8	54.1	-1.3	1.3	No
R407(O343)	School	69.2	69.9	70.9	1.7	1.0	69.8	70.5	71.1	1.3	0.6	Yes
R408(OP453)	Recreational (Park)	61.6	62.3	61.4	-0.2	-0.9	62.0	62.7	61.8	-0.2	-0.9	No
R409(O338)	Residential	61.1	59.8	60.6	-0.5	0.8	60.6	58.8	60.1	-0.5	1.3	No
R410(OP343)	Recreational (Park)	69.9	70.6	71.7	1.8	1.1	70.7	71.3	72.1	1.4	0.8	Yes
R411(OV338)	Vacant-Commercial	52.1	50.6	51.1	-1.0	0.5	51.6	49.6	50.4	-1.2	0.8	No
R412(O283 R-11)	Residential	70.7	71.3	71.8	1.1	0.5	71.4	71.9	72.3	0.9	0.4	Yes
M-4(O494)	Residential	67.3	68.1	68.4	1.1	0.3	67.9	68.6	68.7	0.8	0.1	Yes
R414(OV175)	Vacant-Residential	58.4	58.9	60.2	1.8	1.3	58.7	59.2	60.3	1.6	1.1	No
R415(O801)	Residential	63.9	64.6	65.5	1.6	0.9	64.6	65.3	65.9	1.3	0.6	No
R416(O554)	Office	65.1	63.0	65.1	0.0	2.1	66.5	64.4	66.4	-0.1	2.0	Yes
R417(OV156)	Vacant-Residential	58.1	58.7	59.0	0.9	0.3	58.5	59.1	59.2	0.7	0.1	No
R418(O684)	Residential	59.1	59.9	60.5	1.4	0.6	59.8	60.5	60.8	1.0	0.3	No
R419(O633)	Multi-family	69.9	70.4	71.5	1.6	1.1	70.8	71.3	72.2	1.4	0.9	Yes
R420(O433)	Multi-family	69.3	69.9	70.7	1.4	0.8	70.1	70.7	71.4	1.3	0.7	Yes
R421(O748)	Multi-family	70.3	70.7	72.3	2.0	1.6	71.2	71.7	73.1	1.9	1.4	Yes
R422(O682)	Residential	69.0	68.5	69.4	0.4	0.9	69.8	69.2	70.0	0.2	0.8	Yes
R423(O282)	Residential	60.3	61.1	61.1	0.8	0.0	60.7	61.4	61.4	0.7	0.0	No
R424(O504)	Residential	60.7	61.3	61.5	0.8	0.2	61.2	61.7	61.7	0.5	0.0	No
R425(O854 R-15)	Multi-family	69.4	70.1	73.4	4.0	3.3	70.1	70.8	73.8	3.7	3.0	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R426(O800)	Residential	56.7	57.5	57.9	1.2	0.4	57.3	58.0	58.2	0.9	0.2	No
R427(O754)	Multi-family	61.6	62.3	62.5	0.9	0.2	62.5	63.1	63.0	0.5	-0.1	No
R428(O831)	Multi-family	71.6	72.3	74.5	2.9	2.2	72.3	73.0	74.9	2.6	1.9	Yes
R429(O541)	Multi-family	62.7	63.5	64.9	2.2	1.4	63.8	64.5	65.6	1.8	1.1	No
R430(O227)	Multi-family	65.7	66.4	69.8	4.1	3.4	66.5	67.2	70.2	3.7	3.0	Yes
R431(O875)	Multi-family	74.3	75.0	75.8	1.5	0.8	74.3	75.0	76.2	1.9	1.2	Yes
R432(O336)	Multi-family	71.5	72.3	73.9	2.4	1.6	72.0	72.8	74.1	2.1	1.3	Yes
M-7(O819)	Multi-family	70.8	71.4	72.4	1.6	1.0	70.1	70.7	72.3	2.2	1.6	Yes
R434(O331)	Multi-family	71.2	72.0	73.8	2.6	1.8	71.7	72.4	74.1	2.4	1.7	Yes
R435(O600 R-12)	Residential	60.3	60.4	60.4	0.1	0.0	61.0	61.1	60.8	-0.2	-0.3	No
M-5(O683)	Multi-family	70.8	71.5	73.5	2.7	2.0	71.2	71.9	73.7	2.5	1.8	Yes
R437(O799)	Multi-family	70.3	71.1	73.3	3.0	2.2	70.6	71.3	73.4	2.8	2.1	Yes
R438(O821)	Multi-family	71.9	72.7	72.8	0.9	0.1	71.5	72.3	73.2	1.7	0.9	Yes
R439(O863)	Multi-family	63.6	63.8	63.5	-0.1	-0.3	63.8	64.1	63.7	-0.1	-0.4	No
R440(O881)	Multi-family	60.0	60.7	62.1	2.1	1.4	60.8	61.5	62.5	1.7	1.0	No
R441(O829)	Multi-family	59.1	59.9	61.3	2.2	1.4	60.1	60.8	61.8	1.7	1.0	No
R442(O820 R-17)	Multi-family	73.4	74.2	74.7	1.3	0.5	73.4	74.2	75.2	1.8	1.0	Yes
R443(O958)	Multi-family	56.8	57.6	62.2	5.4	4.6	57.2	58.0	62.4	5.2	4.4	No
R444(O864)	Multi-family	57.2	58.0	62.4	5.2	4.4	57.6	58.4	62.6	5.0	4.2	No
R445(O894)	Multi-family	57.2	58.0	62.4	5.2	4.4	57.8	58.6	62.5	4.7	3.9	No
R446(O255)	Multi-family	57.5	58.2	60.6	3.1	2.4	57.8	58.5	60.5	2.7	2.0	No
R346b(O451 R-26)	Commercial	65.0	63.0	65.0	0.0	2.0	64.2	62.4	64.3	0.1	1.9	No
R447(O359)	Multi-family	51.1	51.9	51.7	0.6	-0.2	51.5	52.2	52.0	0.5	-0.2	No
R448(O858)	Multi-family	70.6	71.4	71.6	1.0	0.2	70.3	71.1	72.1	1.8	1.0	Yes
R449(OP494)	Recreational (Park)	61.4	61.6	61.2	-0.2	-0.4	62.2	62.4	61.7	-0.5	-0.7	No
R450(O802)	Multi-family	54.8	55.5	54.6	-0.2	-0.9	54.9	55.5	54.8	-0.1	-0.7	No
R451(O922)	Multi-family	72.1	72.9	73.3	1.2	0.4	72.0	72.8	74.0	2.0	1.2	Yes
R452(O828)	Multi-family	62.3	62.3	61.8	-0.5	-0.5	62.4	62.5	62.0	-0.4	-0.5	No
R453(O979)	Multi-family	55.8	56.5	57.1	1.3	0.6	55.4	56.1	57.5	2.1	1.4	No
R454(O825 R-16)	Office	64.9	65.6	67.5	2.6	1.9	65.1	65.7	67.5	2.4	1.8	Yes
R455(O893)	Multi-family	52.5	53.2	53.0	0.5	-0.2	52.7	53.4	53.2	0.5	-0.2	No
R456(O891)	Multi-family	71.7	72.4	73.3	1.6	0.9	71.5	72.0	74.0	2.5	2.0	Yes
R457(O703)	Multi-family	59.9	60.6	61.4	1.5	0.8	60.1	60.7	61.6	1.5	0.9	No
R458(O957)	Residential	55.2	56.0	59.4	4.2	3.4	55.9	56.7	59.5	3.6	2.8	No
R459(O955)	Multi-family	51.6	52.4	52.5	0.9	0.1	52.0	52.7	52.6	0.6	-0.1	No
R460(O986)	Residential	48.6	48.4	45.5	-3.1	-2.9	48.7	48.4	45.8	-2.9	-2.6	No



Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R461(O987)	Residential	54.8	55.1	54.0	-0.8	-1.1	55.2	55.5	54.3	-0.9	-1.2	No
R462(O892)	Multi-family	48.3	49.0	50.0	1.7	1.0	48.7	49.4	50.2	1.5	0.8	No
R463(O257)	Multi-family	55.2	56.0	57.0	1.8	1.0	54.9	55.6	56.9	2.0	1.3	No
R464(O256)	Multi-family	52.4	53.2	55.1	2.7	1.9	53.0	53.7	55.1	2.1	1.4	No
R465(O675 R-18)	Multi-family	69.5	70.3	71.0	1.5	0.7	69.0	69.6	71.5	2.5	1.9	Yes
R466(O897)	Office	54.4	55.0	57.2	2.8	2.2	55.0	55.6	57.3	2.3	1.7	No
R467(O956)	Multi-family	54.1	54.8	55.5	1.4	0.7	54.6	55.2	55.8	1.2	0.6	No
R468(O170)	Multi-family	57.5	58.1	58.8	1.3	0.7	57.7	58.2	58.8	1.1	0.6	No
R469(OP643)	Recreational (Park)	53.9	54.6	54.6	0.7	0.0	54.3	55.0	54.8	0.5	-0.2	No
R470(O859)	Multi-family	61.9	62.7	62.5	0.6	-0.2	61.2	62.0	63.1	1.9	1.1	No
R471(O925)	Multi-family	58.6	59.3	59.9	1.3	0.6	57.9	58.4	60.1	2.2	1.7	No
R472(O461)	Multi-family	52.9	53.7	54.5	1.6	0.8	52.4	53.1	54.9	2.5	1.8	No
M-8(O951)	Multi-family	70.3	71.1	72.0	1.7	0.9	69.9	70.6	72.5	2.6	1.9	Yes
R474(O977)	Multi-family	55.6	56.3	57.0	1.4	0.7	55.2	55.9	57.6	2.4	1.7	No
R475(O844)	Multi-family	46.1	46.8	45.8	-0.3	-1.0	45.9	46.6	45.9	0.0	-0.7	No
R476(O568)	Church	51.6	52.2	52.8	1.2	0.6	51.8	52.4	52.9	1.1	0.5	No
R477(O949)	Multi-family	53.3	54.0	54.6	1.3	0.6	52.9	53.7	55.2	2.3	1.5	No
R478(O950)	Multi-family	58.9	59.7	58.9	0.0	-0.8	58.1	58.8	59.2	1.1	0.4	No
R479(O783)	Multi-family	51.1	51.6	52.2	1.1	0.6	50.8	51.3	52.1	1.3	0.8	No
R480(O860)	Multi-family	58.5	59.3	58.1	-0.4	-1.2	58.4	59.3	58.4	0.0	-0.9	No
R481(O862)	Multi-family	45.9	46.7	46.2	0.3	-0.5	45.9	46.7	46.5	0.6	-0.2	No
R482(O770 R-24)	Office	68.8	69.6	69.0	0.2	-0.6	68.6	69.4	68.8	0.2	-0.6	Yes
R483(O948)	Multi-family	42.4	43.1	42.4	0.0	-0.7	42.5	43.2	42.7	0.2	-0.5	No
R484(O981)	Multi-family	43.7	44.4	43.6	-0.1	-0.8	43.8	44.5	43.9	0.1	-0.6	No
R485(O462)	Restaurant/Bar	54.4	55.0	54.5	0.1	-0.5	54.2	54.8	54.6	0.4	-0.2	No
R486(O345)	Recreational	71.9	72.8	72.1	0.2	-0.7	72.1	73.0	72.5	0.4	-0.5	Yes
R487(O834)	Multi-family	56.2	57.0	55.9	-0.3	-1.1	56.0	56.8	56.0	0.0	-0.8	No
R488(O429)	Recreational	63.6	64.5	64.4	0.8	-0.1	63.3	64.2	64.5	1.2	0.3	No
R489(OP345)	Recreational (Park)	73.5	74.4	73.9	0.4	-0.5	73.7	74.7	74.2	0.5	-0.5	Yes
R490(O902)	Residential	51.1	49.9	47.4	-3.7	-2.5	51.7	50.0	48.1	-3.6	-1.9	No
R491(O667 R-20)	Residential	65.3	63.6	63.7	-1.6	0.1	66.1	63.9	64.3	-1.8	0.4	No
R492(O363)	Residential	65.4	63.9	63.9	-1.5	0.0	66.1	64.1	64.5	-1.6	0.4	No
R493(O73)	Residential	66.0	65.3	65.3	-0.7	0.0	66.6	65.5	65.8	-0.8	0.3	No
R494(O836)	Residential	50.2	49.2	46.4	-3.8	-2.8	50.9	49.4	47.0	-3.9	-2.4	No
R495(O576)	Residential	65.8	65.0	64.8	-1.0	-0.2	66.4	65.2	65.3	-1.1	0.1	No
R496(O499)	Residential	65.5	64.2	64.2	-1.3	0.0	66.3	64.5	64.8	-1.5	0.3	No

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R497(O500)	Residential	65.7	64.7	64.6	-1.1	-0.1	66.4	65.0	65.1	-1.3	0.1	No
R498(O501)	Residential	65.9	65.3	65.3	-0.6	0.0	66.4	65.5	65.8	-0.6	0.3	No
M-9(O578)	Residential	66.2	65.9	66.5	0.3	0.6	66.7	66.0	66.9	0.2	0.9	Yes
R500(O173)	Residential	66.3	65.8	66.1	-0.2	0.3	66.8	66.0	66.5	-0.3	0.5	Yes
R501(O903)	Residential	49.5	48.6	45.8	-3.7	-2.8	50.0	48.7	46.3	-3.7	-2.4	No
R502(O937)	Residential	48.9	48.2	45.5	-3.4	-2.7	49.5	48.3	46.0	-3.5	-2.3	No
R503(O44)	Office	76.1	77.0	77.0	0.9	0.0	76.8	77.6	77.8	1.0	0.2	Yes
R504(O845)	Residential	62.4	63.0	64.9	2.5	1.9	62.4	63.1	65.1	2.7	2.0	No
R505(O900 R-22)	Residential	62.1	62.8	64.6	2.5	1.8	62.2	62.9	64.8	2.6	1.9	No
R506(O362)	Residential	61.8	62.5	64.3	2.5	1.8	61.8	62.5	64.4	2.6	1.9	No
R507(O815)	Residential	61.0	61.8	63.8	2.8	2.0	61.1	61.9	64.0	2.9	2.1	No
R508(O908)	Residential	60.9	61.6	63.7	2.8	2.1	61.0	61.7	63.8	2.8	2.1	No
R509(O909)	Residential	60.9	61.7	63.5	2.6	1.8	61.0	61.7	63.7	2.7	2.0	No
R510(O910)	Residential	60.8	61.5	63.4	2.6	1.9	60.8	61.6	63.6	2.8	2.0	No
R511(O899)	Residential	60.6	61.4	63.3	2.7	1.9	60.7	61.4	63.5	2.8	2.1	No
R512(O144)	School	66.9	67.0	66.2	-0.7	-0.8	67.1	66.9	66.5	-0.6	-0.4	Yes
R513(O911)	Residential	60.5	61.2	63.2	2.7	2.0	60.5	61.3	63.3	2.8	2.0	No
R514(OP362)	Recreational (Park)	74.2	75.1	76.1	1.9	1.0	74.6	75.3	76.7	2.1	1.4	Yes
R514A (OP362)	Recreational (Park)	67.5	68.3	71.7	4.2	3.4	67.5	68.3	72.1	4.6	3.8	Yes
R514B (OP362)	Recreational (Park)	68.5	69.3	74.1	5.6	4.8	68.8	69.6	74.5	5.7	4.9	Yes
R514C(OP362)	Recreational (Park)	65.2	66.0	70.9	5.7	4.9	65.3	66.1	71.3	6.0	5.2	Yes
R514D(OP362)	Recreational (Park)	66.0	66.9	73.8	7.8	6.9	66.3	67.2	74.3	8.0	7.1	Yes
R515(O963)	Residential	60.3	61.1	63.0	2.7	1.9	60.4	61.2	63.2	2.8	2.0	No
R516(O778)	Residential	60.2	60.9	62.9	2.7	2.0	60.2	61.0	63.1	2.9	2.1	No
R517(O551)	Office	63.7	63.5	62.4	-1.3	-1.1	63.5	63.1	62.3	-1.2	-0.8	No
R518(O191)	Office	61.4	60.1	61.4	0.0	1.3	61.0	59.9	60.9	-0.1	1.0	No
R519(O373)	Residential	60.2	61.0	64.1	3.9	3.1	60.4	61.0	64.3	3.9	3.3	No
R520(O487)	Residential	55.9	56.6	58.2	2.3	1.6	55.9	56.6	58.4	2.5	1.8	No
R521(O271)	Residential	47.6	48.3	47.5	-0.1	-0.8	47.7	48.3	47.7	0.0	-0.6	No
R522(O366)	Residential	53.8	54.6	55.3	1.5	0.7	53.7	54.5	55.6	1.9	1.1	No
R523(O86)	Residential	60.6	61.3	64.4	3.8	3.1	60.7	61.4	64.6	3.9	3.2	No
M-12(O604)	Office	66.5	64.9	66.9	0.4	2.0	67.2	65.2	67.8	0.6	2.6	Yes
R525(O695)	Residential	61.1	61.8	64.5	3.4	2.7	61.2	61.9	64.8	3.6	2.9	No
R526(O582)	Residential	60.3	61.1	64.0	3.7	2.9	60.4	61.1	64.3	3.9	3.2	No
R527(O488)	Residential	62.9	63.8	65.6	2.7	1.8	63.0	63.8	65.9	2.9	2.1	No
R528(O269)	Residential	63.6	64.5	65.5	1.9	1.0	63.7	64.5	65.8	2.1	1.3	No

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R529(O368)	Residential	62.5	63.4	64.3	1.8	0.9	62.4	63.2	64.6	2.2	1.4	No
R530(O491)	Residential	52.2	52.5	55.8	3.6	3.3	53.5	53.4	56.4	2.9	3.0	No
R531(O383)	Residential	52.9	53.0	57.3	4.4	4.3	54.7	54.3	58.1	3.4	3.8	No
R532(O401)	Residential	55.9	56.0	60.6	4.7	4.6	57.7	57.3	61.5	3.8	4.2	No
M-10(O490)	Residential	67.1	67.7	70.5	3.4	2.8	68.1	68.1	71.5	3.4	3.4	Yes
R534(O483)	Residential	53.4	54.1	55.2	1.8	1.1	54.0	54.5	55.8	1.8	1.3	No
R535(O456 R-27)	Office	61.8	61.9	63.0	1.2	1.1	61.6	61.6	62.8	1.2	1.2	No
R536(O179)	Residential	55.0	55.7	56.2	1.2	0.5	55.4	55.9	56.6	1.2	0.7	No
R537(O689)	Residential	56.7	57.4	58.8	2.1	1.4	56.9	57.5	59.0	2.1	1.5	No
R538(OP456)	Recreational (Park)	65.3	65.6	66.5	1.2	0.9	65.1	65.4	66.2	1.1	0.8	Yes
R539(O85)	Residential	55.0	55.7	58.3	3.3	2.6	55.3	55.8	58.7	3.4	2.9	No
R540(O478)	Residential	56.8	57.5	59.7	2.9	2.2	57.0	57.6	59.9	2.9	2.3	No
R541(O87)	Residential	53.6	54.1	56.3	2.7	2.2	54.3	54.4	57.0	2.7	2.6	No
R542(O580)	Residential	52.3	52.6	55.3	3.0	2.7	53.7	53.5	56.2	2.5	2.7	No
M-11(O151)	Office	68.6	69.1	70.8	2.2	1.7	68.4	69.0	70.8	2.4	1.8	Yes
R544(O80)	Residential	53.1	53.2	56.4	3.3	3.2	54.7	54.4	57.4	2.7	3.0	No
R545(O281)	Residential	55.0	55.2	58.4	3.4	3.2	56.5	56.3	59.3	2.8	3.0	No
R546(O189)	Residential	55.1	55.0	58.9	3.8	3.9	57.5	56.8	60.1	2.6	3.3	No
R547(O794)	Single Family	55.3	55.0	57.6	2.3	2.6	59.2	58.1	59.3	0.1	1.2	No
R548(O492)	Residential	56.8	56.7	61.0	4.2	4.3	59.4	58.6	62.3	2.9	3.7	No
R549(O484)	Residential	55.8	55.1	57.8	2.0	2.7	60.3	58.8	59.7	-0.6	0.9	No
R550(O599)	Residential	59.2	59.2	63.2	4.0	4.0	61.8	61.1	64.5	2.7	3.4	No
R551(O380 R-25)	Residential	63.1	63.4	65.8	2.7	2.4	65.0	64.6	67.1	2.1	2.5	Yes
R552(O77)	Residential	57.7	56.9	60.6	2.9	3.7	62.2	60.7	62.2	0.0	1.5	No
R553(O536 R-32)	Office	61.3	60.3	61.5	0.2	1.2	63.1	61.7	62.5	-0.6	0.8	No
R554(O67 R-28)	Office	64.9	65.4	67.4	2.5	2.0	64.0	64.6	67.0	3.0	2.4	Yes
R555(O566)	Office	59.4	59.7	63.3	3.9	3.6	59.4	59.5	63.6	4.2	4.1	No
R556(O467)	Office	60.8	61.1	62.9	2.1	1.8	58.5	58.9	62.0	3.5	3.1	No
R557(O707 R-29)	Church	55.1	55.5	66.9	11.8	11.4	56.5	56.7	67.6	11.1	10.9	Yes
R558(O398)	Office	65.5	65.8	66.1	0.6	0.3	61.4	61.8	62.7	1.3	0.9	Yes
R559(O399)	Residential	65.1	65.4	67.0	1.9	1.6	67.4	67.4	67.8	0.4	0.4	Yes
R560(O803 R-31)	Public Meeting Rooms	66.5	66.7	67.2	0.7	0.5	69.2	68.9	68.3	-0.9	-0.6	Yes
M-15(O664)	Office	62.4	60.2	62.1	-0.3	1.9	62.4	59.6	62.1	-0.3	2.5	No
M-16(O756)	Residential	64.5	65.2	65.8	1.3	0.6	64.6	65.0	66.0	1.4	1.0	Yes
R563(O384)	Office	65.9	66.7	66.5	0.6	-0.2	66.6	67.4	66.8	0.2	-0.6	Yes
R564(O605)	Multi-family	67.3	68.0	67.2	-0.1	-0.8	63.8	64.5	64.0	0.2	-0.5	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R565(O198)	Office	66.8	67.5	66.5	-0.3	-1.0	62.9	63.6	63.0	0.1	-0.6	Yes
R566(O100)	Office	66.8	67.5	66.5	-0.3	-1.0	62.8	63.5	62.9	0.1	-0.6	Yes
R567(O715)	Office	66.9	67.6	66.6	-0.3	-1.0	62.9	63.6	62.8	-0.1	-0.8	Yes
R568(O197)	Office	66.9	67.6	66.6	-0.3	-1.0	62.8	63.5	62.8	0.0	-0.7	Yes
R569(O712)	Medical	66.6	67.3	66.3	-0.3	-1.0	62.5	63.2	62.5	0.0	-0.7	Yes
R570(O391)	Restaurant/Bar	65.7	66.5	65.7	0.0	-0.8	67.1	67.9	66.6	-0.5	-1.3	Yes
R571(O786)	Office	65.7	66.5	65.6	-0.1	-0.9	67.1	67.9	66.7	-0.4	-1.2	Yes
R572(O495)	Office	72.0	72.9	N/A	N/A	N/A	72.6	73.5	N/A	N/A	N/A	N/A
R573(O713)	Office	71.6	72.5	N/A	N/A	N/A	71.8	72.6	N/A	N/A	N/A	N/A
R574(O98)	Multi-family	65.8	66.7	65.6	-0.2	-1.1	67.7	68.5	67.5	-0.2	-1.0	Yes
R575(O606)	Residential/Commercial	55.0	55.8	55.7	0.7	-0.1	55.8	56.7	56.4	0.6	-0.3	No
R576(O152 R-35)	Commercial	70.8	70.9	70.5	-0.3	-0.4	71.4	71.5	71.4	0.0	-0.1	Yes
R577(O233)	Office	70.8	71.7	64.8	-6.0	-6.9	71.5	72.5	66.6	-4.9	-5.9	Yes
R578(O95)	Residential/Commercial	52.2	53.2	53.4	1.2	0.2	53.5	54.5	54.2	0.7	-0.3	No
R579(O396)	Office	53.4	54.1	52.9	-0.5	-1.2	51.6	52.4	52.3	0.7	-0.1	No
R580(O397)	Office	65.0	65.9	66.0	1.0	0.1	68.2	69.1	70.9	2.7	1.8	Yes
R581(O288)	Office	49.1	50.0	51.4	2.3	1.4	50.1	51.1	52.5	2.4	1.4	No
M-14(O664)	Office	70.0	70.9	69.1	-0.9	-1.8	69.7	70.5	69.7	0.0	-0.8	Yes
R582(O194)	Office	51.3	52.1	50.9	-0.4	-1.2	50.8	51.6	52.1	1.3	0.5	No
R583(O291 R-34)	Office	60.9	61.7	59.7	-1.2	-2.0	63.2	64.0	64.8	1.6	0.8	No
R584(O496 R-33)	Office	69.0	69.7	69.2	0.2	-0.5	68.9	69.7	69.5	0.6	-0.2	Yes
R585(O676)	Office	51.0	51.8	50.5	-0.5	-1.3	50.8	51.6	52.3	1.5	0.7	No
R586(O99)	Office	61.0	61.9	61.2	0.2	-0.7	64.6	65.5	67.2	2.6	1.7	Yes
R587(O714)	Multi-family	60.3	61.2	60.9	0.6	-0.3	64.2	65.1	67.1	2.9	2.0	Yes
R588(O466)	Office	65.0	66.0	71.7	6.7	5.7	64.8	65.6	72.4	7.6	6.8	Yes
R589(O677)	Office	65.5	66.4	N/A	N/A	N/A	65.1	65.9	N/A	N/A	N/A	N/A
R590(O502)	Office	47.9	48.8	49.4	1.5	0.6	49.0	50.0	50.3	1.3	0.3	No
R591(O267)	Office	71.0	71.9	71.8	0.8	-0.1	70.8	71.7	72.0	1.2	0.3	Yes
R592(O870)	Office	51.1	52.0	50.8	-0.3	-1.2	51.2	52.0	53.0	1.8	1.0	No
R593(O193)	Residential/Commercial	62.4	63.4	63.3	0.9	-0.1	67.2	68.1	70.4	3.2	2.3	Yes
R594(O711)	Office	62.8	63.8	63.8	1.0	0.0	67.6	68.6	71.0	3.4	2.4	Yes
R595(O393)	Office	58.6	59.6	60.0	1.4	0.4	63.1	64.1	66.8	3.7	2.7	Yes
R596(OP603)	Recreational (Bengals Practice Field)	66.8	67.7	67.5	0.7	-0.2	66.5	67.3	67.1	0.6	-0.2	Yes
R597(O266)	Office	62.5	63.5	63.7	1.2	0.2	67.3	68.3	70.9	3.6	2.6	Yes
R598(O710)	Office	61.6	62.6	62.8	1.2	0.2	66.5	67.4	70.0	3.5	2.6	Yes

Table 8. Alternative I Noise Levels

Receptor Number	Land Use	AM Peak Hour					PM Peak Hour					Approaches/ Exceeds NAC (Yes/No)
		2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	2010 Existing L <sub>eq</sub> (1-Hr) dB(A)	2035 No Build L <sub>eq</sub> (1-Hr) dB(A)	2035 Build L <sub>eq</sub> (1-Hr) dB(A)	Build Minus Existing (dB(A))	Build Minus No Build (dB(A))	
R599(O195)	Office	70.1	71.0	68.6	-1.5	-2.4	71.0	71.8	69.5	-1.5	-2.3	Yes
R600(O94)	Residential	62.0	62.9	61.4	-0.6	-1.5	62.4	63.2	61.7	-0.7	-1.5	No
R601(O388)	Residential	60.0	60.8	57.7	-2.3	-3.1	61.6	62.3	58.8	-2.8	-3.5	No
R602(O390)	Residential	55.3	56.1	55.2	-0.1	-0.9	56.7	57.6	59.1	2.4	1.5	No
R603a(O387)	Residential	43.5	44.3	42.5	-1.0	-1.8	43.7	44.5	43.2	-0.5	-1.3	No
R603b(O387)	Residential	55.3	56.2	55.3	0.0	-0.9	55.8	56.7	57.2	1.4	0.5	No
R604(O787)	Residential	58.2	59.0	56.1	-2.1	-2.9	58.2	58.9	57.1	-1.1	-1.8	No
R605(O716)	Office	73.8	74.7	72.6	-1.2	-2.1	74.3	75.2	73.2	-1.1	-2.0	Yes
M-13(O292)	Office	70.8	71.7	71.4	0.6	-0.3	70.9	72.1	72.0	1.1	-0.1	Yes
R607(O290 R-36)	Recreational (Paul Brown Stadium)	66.1	67.0	67.2	1.1	0.2	65.4	66.2	66.4	1.0	0.2	Yes
R608(OP290)	Recreational (Paul Brown Stadium)	70.1	70.9	70.4	0.3	-0.5	69.2	70.0	69.4	0.2	-0.6	Yes

## 6.0 NOISE ABATEMENT

The Ohio Department of Transportation (ODOT) requires that noise abatement measures be considered at locations where traffic related noise impacts are predicted to occur as a result of the project. The need to consider abatement is based on the potential for impacts at exterior areas where frequent human use occurs and lowered noise levels would be beneficial. In conformance with these requirements, abatement measures were evaluated in terms of their effectiveness to substantially reduce predicted design year noise levels at locations where impacts occur. Potential abatement measures include:

- Traffic management measures.
- Alteration of roadway horizontal or vertical alignments.
- Acquisition of real property or land to serve as a buffer zone to preempt development that would be adversely impacted from traffic noise.
- Noise insulation of Activity Category D land use facilities listed in Table 1.
- Construction of noise barriers including acquisition of property rights, either within or outside the highway right-of-way (ROW).

Traffic management measures involve restrictions on the speed and type of vehicles permitted to use a particular roadway. Traffic management measures such as placing restrictions on heavy truck movements and lowering operating speeds are not compatible with the purpose of interstate roadways. Alteration of horizontal and vertical alignments beyond what is presently proposed for the Build Alternatives is constrained by existing terrain, location of the existing transportation facilities and land uses, underlying geology, and other considerations. Due to the densely developed urban environment of the study area, acquisition of land to serve as a noise buffer zone is not a practical option. Therefore, the only remaining potential effective abatement measures are noise barriers.

Noise barriers reduce noise by blocking the path of sound between the source and the receiver. To be effective, a barrier should be located adjacent to either the noise source or the receiver. The noise wall must also be long, continuous and break the line-of-sight from the highway to the receiver. ODOT has defined criteria for determining the feasibility and reasonableness of constructing noise barriers. The determination of whether a noise barrier is feasible deals primarily with engineering considerations. For example:

- Can a barrier be constructed given the topography of the location?
- Can substantial noise reduction be achieved given determined control, drainage, safety or maintenance requirements which could result in discontinuities in the barrier?
- Will noise barriers be feasible given potential noise impacts from other noise sources in the study area?
- Can the noise barriers satisfy ODOT acoustic feasibility and cost reasonableness guidelines?

### 6.1 ODOT Noise Barrier Feasibility and Reasonableness Factors

To be considered feasible, in accordance with ODOT's *Standard Procedure for Analysis and Abatement of Highway Traffic Noise* (No. 417-001SP effective June 7, 2011), a proposed noise barrier must provide a minimum 5 decibels in a A-weighted noise level (dB(A)) noise reduction for 40 percent of the impacted receptors. Also, the noise barrier must meet safety requirements in accordance with ODOT's *Location and Design Manual, Volume 1, Section 600, Roadside*

*Design.* Other engineering and physical factors that need to be considered in establishing feasibility are: barrier height, topography, drainage, utilities, maintenance of abatement measure, maintenance access to adjacent properties, and access to adjacent properties (i.e. arterial widening projects).

To be considered reasonable, a combination of social, economic, and environmental factors must be considered in the evaluation of a proposed noise barrier. Specifically, the following factors must be satisfied to establish reasonableness:

- The noise barrier must meet the cost reasonable criterion of a maximum per dwelling cost of \$35,000 per benefiting receptor receiving a minimum noise reduction of five dB(A) in the predicted build noise level. A “benefited” receptor is any receptor receiving a 5 or more dB(A) noise reduction. ODOT currently uses a unit cost of \$25 per square foot to estimate the cost of noise barrier construction.
- The noise reduction design goal of seven dB(A) should be achieved at a minimum of one benefiting receptor behind a proposed noise barrier.

Once a proposed noise barrier satisfies the feasibility and reasonableness requirements described above, the solicitation of views of the affected property owners and residences is the final step in determining if a proposed noise barrier will be constructed. After the final noise study is completed, a public involvement meeting for each proposed noise barrier is required to solicit the views of the property owners and residences of the benefited receptors. A noise barrier will not be constructed if it does not have the support from benefited residences. For abatement to be designed and constructed, a minimum of 50 percent of the property owners and residences of the benefited receptors should respond in favor of the proposed noise wall by formal ballot voting.

## **6.2 Noise Barrier Analysis Findings**

A noise barrier analysis was completed utilizing the Federal Highway Administration (FHWA) Traffic Noise Model Version 2.5 (TNM) adjacent residential communities and other noise sensitive areas where noise impacts are predicted to occur in areas of frequent human use that a lowered noise level would be of benefit. Five potential noise wall locations were identified and evaluated for feasibility and reasonableness. Summaries of those findings are contained in Table 9 for Alternative E and Table 10 for Alternative I. Illustrations depicting the location of each proposed noise barrier are shown on Exhibits 4 through 9. Individual noise reduction levels achieved at each residential property behind each evaluated sound barrier are contained in Appendix D for Alternative E and Appendix E for Alternative I.

The abatement analysis findings indicate that all five proposed sound barriers satisfy ODOT feasibility and reasonableness requirements under both proposed Build Alternatives. The noise barrier analysis findings associated with Alternative E are labeled B1 through B5 in Table 9 and are depicted in Exhibits 4, 5 and 6. Similarly, the noise barrier analysis findings associated with Alternative I are labeled B6 through B10 in Table 10 and are depicted in Exhibits 7, 8 and 9.

The recommended noise barriers for both Build Alternatives provide abatement to the same residential areas. In addition, the recommended height for barriers B1 to B3 under Alternative E and B6 to B8 for Alternative I are the same for both Build Alternatives, but they vary slightly in the number of benefiting receptors, unit cost per benefiting receptor and acoustic feasibility. The other two recommended sound barriers vary in height due primarily to traffic volumes and

roadway geometrics of the Build Alternatives. For example, under Alternative E, noise barrier B4A and B4B (at a height of 20 feet) would provide abatement to 168 equivalent benefiting receptors with a maximum noise reduction of 13.5 dB(A) at a unit cost of \$2,789 and a total cost of \$468,500. A similar noise barrier located at the same general location under Alternative I (identified as Barrier B9A and 9B in Table 10) at a height of 14 feet would provide abatement to 180 equivalent receptors with a maximum noise reduction achieved of 14 dB(A) and a unit cost of \$1,822 and a total cost of \$327,950. The lower number of benefiting dwelling associated with Alternative E for Barrier B4A and B4B is a direct result of slightly lower (4.9 dB(A)) noise reductions achieved at receptor R477, resulting in 12 fewer equivalent benefiting dwellings at one modeled receptor location.

Noise barrier B5 (Alternative E) and B10 (Alternative I) shown in Exhibits 6 and 9 respectively, would provide acoustically feasible and reasonable noise abatement for the Queensgate Playground and Ball Fields. The unit cost for this proposed noise barrier would remain below the \$35,000 cost per benefiting receptor and provide five dB(A) or greater noise reduction to greater than 40 percent of the representative impacted modeling locations. However, under the Alternative I build design, Barrier B10 would need to extend to 24 feet (the practical barrier design height limit ODOT will consider) to provide sufficient noise reduction to remain below the \$35,000 limit.

Total construction cost of all recommended noise barriers satisfying ODOT feasibility and reasonableness criteria varies from \$2,462,150 under Alternative E to \$2,355,950 under Alternative I. The higher total cost associated with Alternative E is due to the taller wall height needed with barrier B4A/4B to achieve adequate noise reduction.

### **6.3 Parallel Barrier Consideration**

The *FHWA Highway Noise Barrier Design Handbook* defines parallel barriers as two barriers which face each other on opposite sides of a roadway. Sound reflected between reflective parallel barriers may cause degradations in each barrier's performance due to multiple reflections that diffract over the individual barriers. To categorize parallel noise barriers and the insertion-loss degradation values, a width-to-height ratio is used. The separation distance width-to-barrier-height ratio ( $w/h$ ) is the ratio of the total distance between parallel barriers and the average height of the two barriers. Significant insertion loss degradation of greater than three dB(A) will occur when width-to-height ratios are less than 10:1. Within the study area there are no parallel barrier configurations which would warrant quantification of sound barrier performance degradation.

### **6.4 Noise Abatement Likelihood Statement**

Based on the results of the noise barrier analysis, a total of 435 equivalent benefiting receptors are identified under Alternative E and 450 under Alternative I in accordance with ODOT feasibility and reasonableness criteria. The study findings indicate that noise abatement is warranted, at all five proposed locations depicted in Exhibits 4 through 9 at a total unit cost of less than \$6,000 per equivalent benefiting dwelling. A refinement of the noise analysis will occur during final highway design phase of the project. If during final design it has been determined that conditions have changed such that noise abatement is no longer feasible and reasonable, the abatement measures may not be implemented. The final decision on the installation of any abatement measure will be determined in coordination with local officials and residents of the impacted properties during the public involvement process.



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Table 9. Summary of Noise Abatement Analysis Findings for Alternative E

Barrier #	Maximum Noise Reduction Achieved <sup>(1)</sup> dB(A)	Percentage of Impacted Receptors that Receive 5 dB(A) or Greater Noise Reduction (%)	Barrier Description					Number Of Benefited Receptors	Estimated Cost Per Benefiting Receptor (\$)	Noise Barrier Effectiveness			ODOT Noise Abatement Criteria Satisfied (Yes/No)
			Length (feet) <sup>2</sup>	Beginning Point and Highway Direction	Ending Point and Highway Direction	Noise Barrier Height (feet)	Estimated Cost <sup>(3)</sup> (\$)			Design Goal Achieved <sup>(4)</sup>	Acoustic Feasibility Achieved <sup>(5)</sup> (Yes/No)	Reasonable Cost Effective Achieved <sup>(6)</sup> (Yes/No)	
B1	11.2	72.1	804	Sta. 105+67	Sta. 113+96	18	361,800	55	6,578	Yes	Yes	Yes	Yes
B2	8.5	58.6	883	Sta. 92+00	Sta. 100+60	22	485,650	42	11,563	Yes	Yes	Yes	Yes
B3	12.4	55.2	1,397	Sta. 89+08	Sta. 90+87	22	768,350	151	5,088	Yes	Yes	Yes	Yes
B4A & B4B	13.5	72.4	937	Sta. 76+20	Sta. 86+80	20	468,500	168	2,789	Yes	Yes	Yes	Yes
B5	16.6	66.7	687	Sta. 60+06	Sta. 66+93	22	377,850	19	19,887	Yes	Yes	Yes	Yes
<b>Total Cost of Recommended Noise Barriers =</b>							<b>\$2,462,150</b>	<b>435</b>	<b>\$5,660</b>				

<sup>(1)</sup> Insertion loss shown is maximum value at the most benefited property.

<sup>(2)</sup> Barrier length was obtained from the "Barrier Description Table" tab in TNM.

<sup>(3)</sup> Estimated cost of the barriers is based on the surface area cost of \$25 per square foot of barrier wall.

<sup>(4)</sup> A design goal of seven dB(A) noise reduction at a minimum of one benefiting receptor is required.

<sup>(5)</sup> An Acoustically feasible noise barrier provides a minimum noise reduction of five dB(A) or greater at 40 percent of the impacted receptors.

<sup>(6)</sup> Reasonableness cost was based on a maximum unit cost of \$35,000 per benefiting receptor. A benefiting receptor is defined as a receptor receiving a minimum noise reduction of five dB(A) in the Build Alternative predicted noise level.

Table 10. Summary of Noise Abatement Analysis for Alternative I

Barrier #	Maximum Noise Reduction Achieved <sup>(1)</sup> dB(A)	Percentage of Impacted Receptors that Receive 5 dB(A) or Greater Noise Reduction (%)	Barrier Description					Number Of Benefited Receptors	Estimated Cost Per Benefiting Receptor (\$)	Noise Barrier Effectiveness			ODOT Noise Abatement Criteria Satisfied (Yes/No)
			Length (feet) <sup>2</sup>	Beginning Point and Highway Direction	Ending Point and Highway Direction	Noise Barrier Height (feet)	Estimated Cost <sup>(3)</sup> (\$)			Design Goal Achieved <sup>(4)</sup>	Acoustic Feasibility Achieved <sup>(5)</sup> (Yes/No)	Reasonable Cost Effective Achieved <sup>(6)</sup> (Yes/No)	
B6	10.5	71.2	804	Sta. 104+86	Sta. 113+14	18	361,800	52	6,958	Yes	Yes	Yes	Yes
B7	8.3	56.2	883	Sta. 91+19	Sta. 99+79	22	485,650	42	11,563	Yes	Yes	Yes	Yes
B8	12.3	90.0	1,397	Sta. 76+56	Sta. 90+05	22	768,350	159	4,832	Yes	Yes	Yes	Yes
B9A & B9B	14	82.8	937	Sta. 63+69	Sta. 74+28	14	327,950	180	1,822	Yes	Yes	Yes	Yes
B10	19.8	83.3	687	Sta. 47+57	Sta. 54+38	24	412,200	17	24,247	Yes	Yes	Yes	Yes
<b>Total Cost of Recommended Noise Barriers =</b>							<b>\$2,355,950</b>	<b>450</b>	<b>\$5,235</b>				

<sup>(1)</sup> Insertion loss shown is maximum value at the most benefited property.

<sup>(2)</sup> Barrier length was obtained from the "Barrier Description Table" tab in TNM.

<sup>(3)</sup> Estimated cost of the barriers is based on the surface area cost of \$25 per square foot of barrier wall.

<sup>(4)</sup> A design goal of seven dB(A) noise reduction at a minimum of one benefiting receptor is required.

<sup>(5)</sup> An Acoustically feasible noise barrier provides a minimum noise reduction of five dB(A) or greater at 40 percent of the impacted receptors.

<sup>(6)</sup> Reasonableness cost was based on a maximum unit cost of \$35,000 per benefiting receptor. A benefiting receptor is defined as a receptor receiving a minimum noise reduction of five dB(A) in the Build Alternative predicted noise level.

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## 7.0 HIGHWAY CONSTRUCTION-RELATED NOISE

Generally, annoyance effects can be expected during construction at sites within 250 feet of the activity. Actual distances at which noise impacts would occur depend on a number of factors including the type and number of construction equipment in site and their duration of usage.

### 7.1 Noise Effects during Construction

Noise from construction activities will add to the average noise level during the construction phase. Construction activities are temporary in nature and all activities are expected to occur during normal daytime waking hours; however, noise from construction could result in annoyance or disruption of sleep if nighttime operations should occur. In any case, construction operations should adhere to any local construction noise ordinances. Noise may also be generated by increases in heavy truck traffic to and from the project area.

Construction activities within the I-75 corridor would have short-term noise effects on receptors in the immediate vicinity of the area. Effects on community noise levels during construction would result from equipment and delivery vehicles traveling to and from the area. The level of effect would depend on the noise characteristics of the equipment and activities involved, such as, the duration of the activity, the construction schedule, and the distance from receptors. Resultant noise levels at a given receptor location would depend on the type and number of pieces of construction equipment being operated and the distance from the construction site. Noise levels from construction activities can vary widely, depending on the phase of construction, which include land clearing and excavation, construction of new roadways and retaining walls. Noise generated from construction activity would be highest typically during the first year when excavation and heavy daily truck traffic would occur.

Typical noise levels from construction equipment, which may be employed during the construction period, are presented in Table 11. Noise levels measured at 50 feet from the construction equipment range from 81 dB(A) for generators to 101 dB(A) for pile drivers. The total hourly average sound energy [ $L_{eq}$  (1-hr) dB(A)] at a distance of 50 feet from the construction site boundary is in the order of 80 to 85 dB(A). Noise levels at receptors located at known distances from the construction site boundary can be conservatively estimated by assuming a six dB(A) drop-off per doubling of distance from each type of construction equipment and by combining the noise contributions from all of the construction equipment at the receptor site.

### 7.2 Construction Noise Abatement Measures

Although increases in the noise levels due to the construction of the project are temporary, measures should be taken to minimize impacts noise. Recommended standard measures include the following:

- Informing the public when work is going to be performed,
- Limit the number and duration of idling equipment on site,
- Install mufflers on equipment and maintain all construction equipment in good repair,
- Reduce noise from all stationary equipment by utilizing suitable enclosures,
- Minimize the use of back-up alarms,
- Schedule and space truck loading and unloading operations to minimize noise impacts,
- Limit operation of heavy equipment and other noisy procedures to daylight hours whenever possible, and

- Locate equipment and vehicle staging areas as far from noise sensitive areas as possible.

**Table 11. Typical Roadway Construction Equipment Noise Levels**

Equipment	Typical Noise Level (dB(A) at 50 feet from Source)*
Air Compressor	81
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane Derrick	88
Crane Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pile Driver (Impact)	101
Pile Driver (Sonic)	96
Pneumatic Tool	85
Pump	76
Rail Saw	90
Rock Drill	98
Roller	74
Saw	76
Scarifier	83
Scraper	89
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Truck	88

**Source:** Environmental Protection Agency (EPA) Report: *Construction Noise Technology Initiative* (Report 1789, September 1980).

## **8.0 CONCLUSIONS AND RECOMMENDATIONS**

The Traffic Noise Model (TNM) analysis for the two Build Alternatives yielded similar predicted future (2035) noise level estimates, with Alternative I resulting in slightly higher levels of noise exposure under the peak PM time period. The noise analysis indicates that under Alternative E a total of 278 properties would experience noise levels at or above the noise abatement criteria (NAC) impact thresholds established by the Federal Highway Administration. These consist of 204 Activity Category B land uses, 28 Category C uses, one Category D use and 45 Category E properties. The noise analysis indicates that for Alternative I, a total of 283 properties would experience noise levels at or above the NAC. These include 210 Activity Category B land uses, 27 Category C uses, one Category D use and 45 Category E properties.

A noise abatement analysis was completed for impacted communities where the construction of noise walls was determined to be feasible (i.e., where there were no driveway or roadway accessibility restrictions preventing the construction of the barriers).

The abatement analysis findings indicate that for both build alternatives, five noise barriers would satisfy the Ohio Department of Transportation's (ODOT) feasibility and reasonableness requirements for cost and acoustic effectiveness. The five recommended sound barriers consist of a total combined length of approximately 4,700 linear feet of barrier wall ranging in height from 14 to 24 feet.

For Alternatives E and I, noise barriers are recommended along Winchell Avenue between Bank and York streets, Findlay and West Liberty streets, and West Liberty Street and approximately Ezzard Charles Drive, and between Ezzard Charles Drive and approximately West Court Street. The final recommended barrier would be located adjacent to the Queensgate Playground and Ball Fields between Linn and Cutter streets.

Under the Alternative E build design, 435 equivalent residential dwelling would receive benefit at a total cost of approximately \$2.5 million. Under Alternative I build design, 450 equivalent residential dwellings would receive benefit at a total cost of approximately \$2.4 million. The overall unit cost for abatement for both build alternatives would be less than \$6,000 per equivalent benefiting receptor.

## **9.0 REFERENCES**

*Brent Spence Bridge Noise Screening Report* (PID No 75119, HAM-71/75-0.00/0.22, KYTC Project Item No. 5-17), February 2009.

*Highway Traffic Noise Analysis and Abatement*, Federal Highway Administration, 23 CFR 772. June 1995.

*Measurement of Highway Noise Related Noise*, Federal Highway Administration (Report No. FHWA-DP-45-1R) August 1996.

*Standard Procedure for Analysis and Abatement of Highway Traffic Noise*, Ohio Department of Transportation (Standard Procedures No. 417-001SP), February 2010.