Appendix D

APPENDIX D

NOISE ANALYIS
AND
TECHNICAL REPORT

U.S. Route 63 Environmental Impact Statement

Noise Technical Report

June, 2008

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ACRONYMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
dB	decibel
dBA	A-weighted decibel
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
L_{eq}	equivalent sound level
MoDOT	Missouri Department of Transportation
mph	miles per hour
NAC	noise abatement criteria
TNM	Traffic Noise Model

EXECUTIVE SUMMARY

The noise analysis prepared for the Draft Environmental Impact Statement (DEIS) for the Missouri Department of Transportation's (MoDOT) Route 63 Reconstruction Project (Project) used a simplified screening-level approach in conjunction with the Federal Highway Administration's (FHWA) Traffic Noise Model (TNM, Version 2.5) to assess potential traffic-related noise impacts. The distances from the highway within each proposed alignment corridor to the residential and commercial noise impact contours predicted for each project alternative are summarized in Table 1.

Table 1: Range of Distances to Noise Impact Contours from the Highway (Feet)

Project Alternative	Distance to Residential Noise Impact Contour (feet)	Distance to Commercial Noise Impact Contour (feet)
No Build Alternative	125 to 215	45 to 130
Build Alternatives 1, 2, and the Preferred Alternative	130 to 220	45 to 115

The number of potentially noise-impacted homes and businesses between the highway and the calculated noise contours were counted for each project alternative. Table 2 summarizes the estimated number of impacts under each project alternative.

Table 2: Estimated Number of Noise Impacts under Each Alternative

Project Alternative	Number of Residential Noise Impacts	Number of Commercial Noise Impacts
No Build Alternative	234	16
Alternative 1	43	1
Alternative 2	77	5
Preferred Alternative	53	0

Results of the screening-level analysis show that, of the three Build Alternatives, Alternative 2 has the greatest potential to cause noise impacts with an estimated 77 residential impacts and five commercial impacts; Build Alternative 1 has the least potential to cause noise impacts with an estimated 43 residential impacts and 1 commercial impact. The No Build Alternative has the greatest overall potential to cause noise impacts with an estimated 234 residential impacts and 16 commercial impacts because the existing alignment of U.S. Route 63 is where the majority of development in this area has occurred. The number of properties affected under Alternatives 1, 2, and the Preferred Alternative is much less than under the No Build Alternative because the new highway would be located in areas where there are currently far fewer homes and businesses compared to the existing highway location.

1.0 INTRODUCTION

1.1 Purpose and Need

The primary purpose of the U.S. Route 63 project is to improve the operational efficiency and safety of the existing roadway for both through and local traffic. Proposed improvements will take into account the needs of neighboring communities and residents, along with the consideration of social, environmental, and cultural resource impacts of these improvements.

Specifically, the project is needed to:

- Improve safety on U.S. Route 63.
- Improve traffic flow on U.S. Route 63.
- Improve north-south corridor continuity.

1.2 Project Description

U.S. Route 63 is a major north-south corridor through central Missouri. U.S. Route 63 extends from Wisconsin to Louisiana, passing through the cities of Kirksville, Macon, Moberly, Columbia, Jefferson City, Rolla, Houston, Cabool, Willow Springs, and West Plains in Missouri.

The portion of U.S. Route 63 being studied in this noise analysis is located in Osage, Maries, and Phelps Counties. The corridor study area begins south of the Route 50/Route 63 interchange in Osage County and ends near Rolla in Phelps County. Communities in this corridor include Westphalia, Freeburg, Vienna, and Vichy. The study area is approximately 47 miles long and ranges in width from one to three miles.

Four alternatives are evaluated in this analysis: a No Build Alternative and three Corridor Alternatives. The three Corridor Alternatives are shown in Figures 1 through 3. Note that in some locations, the three alternatives are proposed on the same alignment. Appendix A shows each corridor alignment separately.

1.3 Project Area Land Use

Land use in the project corridor area is primarily a mix of single family residential properties and small- to medium-sized commercial properties. Land uses in the towns along the alignments (Westphalia, Freeburg, Vienna, and Vichy) are a mix of small businesses and single family residential properties on small- to medium-sized lots. The areas between the towns are predominantly single family residential properties on large lots, as well as some larger commercial enterprises and heavy industrial land uses (e.g., the quarry near the southern boundary of the project area).

The project area is generally characterized by low development densities and large open areas of agricultural and silvicultural (forest) land.

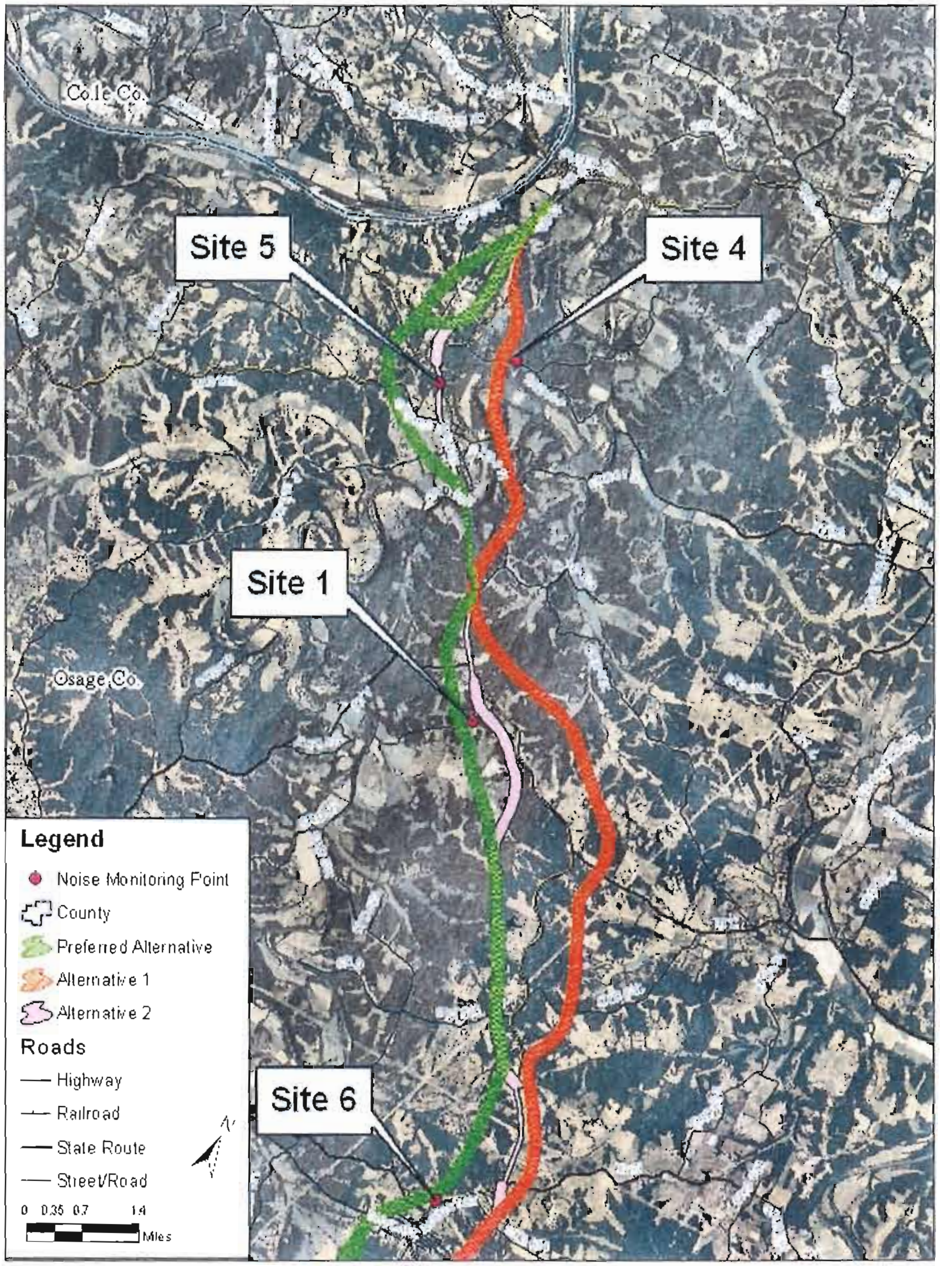

Figure 1

Existing Noise Monitoring Locations - North Portion

U.S. Route 63
Environmental Impact Statement

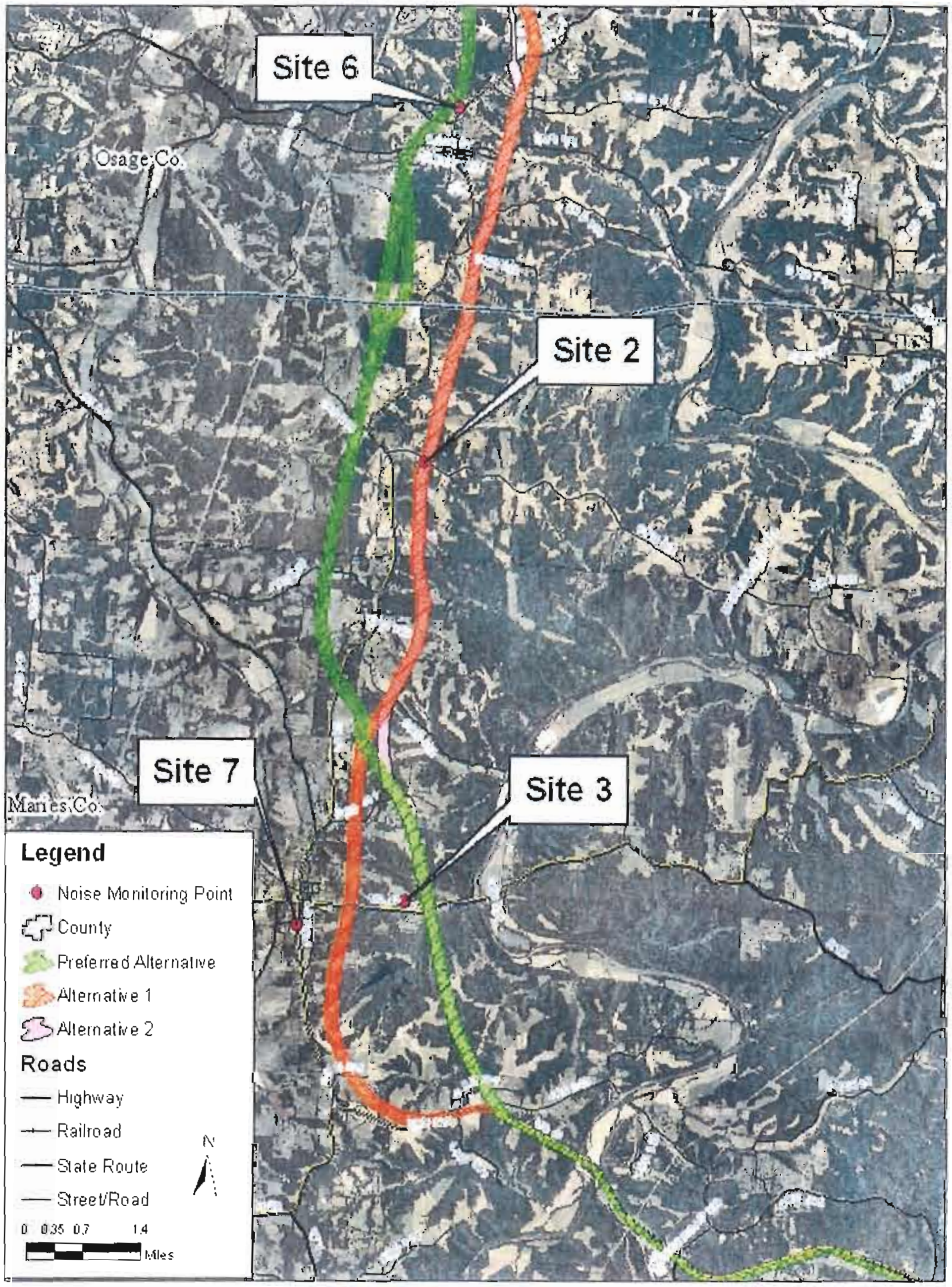

Figure 2

Existing Noise Monitoring Locations - Central Portion

U.S. Route 63
Environmental Impact Statement

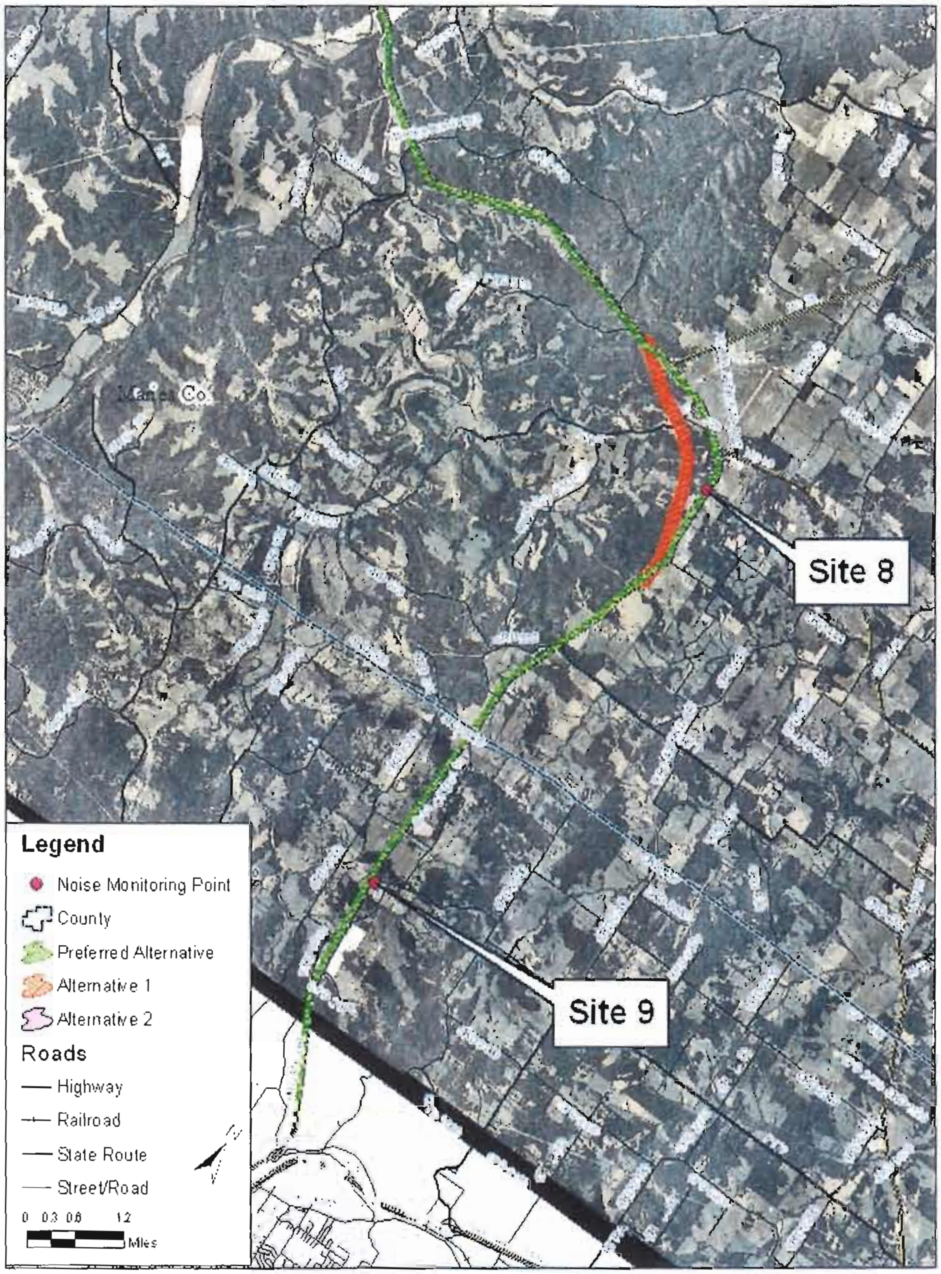

Figure 3

Existing Noise Monitoring Locations - South Portion

U.S. Route 63
Environmental Impact Statement

2.0 METHODOLOGY AND DATA SOURCES

2.1 Introduction

Noise is generally defined as unwanted sound and is a fluctuating sound pressure wave. Noise is measured in terms of sound pressure level expressed in decibels (dB). The number of fluctuation cycles or pressure waves per second of a particular sound is the frequency of the sound. The human ear is less sensitive to higher and lower frequencies than to mid-range frequencies; therefore, sound level meters used to measure environmental noise generally incorporate a filtering system that discriminates against higher and lower frequencies in a manner similar to the human ear. This produces noise measurements that approximate the normal human perception of sound. Measurements made using this filtering system are termed "A-weighted decibels," (dBA). Noise levels referred to in this report are stated as hourly-equivalent sound pressure levels (L_{eq}) in terms of dBA.

Noise levels decrease with distance from a noise source. The L_{eq} noise level from a line source, such as a road, will decrease by 3 dBA for every doubling of distance (3 dBA/DD). Subjectively, a 10 dBA change in noise level is perceived by most people to be approximately a two-fold change in loudness (e.g., an increase from 50 dBA to 60 dBA causes the perceived loudness to double). Generally, 3 dBA is the minimum change in outdoor sound levels that can be perceived by a person with normal hearing. Sound levels produced by common noise sources are listed in Table 3.

2.2 Noise Impact Criteria

Table 4 lists the FHWA noise abatement criteria (NAC). MoDOT, which is responsible for implementing the FWHA regulations in Missouri, considers an "absolute" traffic noise impact to occur if predicted noise levels are within 1 dBA of the FHWA criteria. This accounts for the 1 dBA difference between the federal abatement criteria and the state impact levels shown in Table 4. A "relative" noise impact is considered to occur if predicted noise levels substantially exceed existing noise levels. MoDOT considers a 15 dBA increase over existing noise levels to be substantial.

For this analysis, noise impacts were identified using the MoDOT noise impact criteria, which are based on the FHWA NAC. The criteria are applied to the peak noise impact hour. The impact criteria are evaluated at outdoor areas of frequent human use.

Table 3: Sound Levels of Common Sources and Noise Environments

Thresholds/Noise Sources	Sound Level (dBA)	Subjective Evaluations	Possible Effects on Humans
Human threshold of pain Carrier jet takeoff (50 ft)	140	Deafening	Continuous exposure can cause hearing damage
Siren (100 ft) Jackhammer, power drill	130		
Loud rock band Auto horn (3 ft)	120		
Busy video arcade Baby crying	110		
Lawn mower (3 ft) Noisy motorcycle (50 ft)	100	Very Loud	
Heavy truck at 40 mph (50 ft) Shouted conversation	90		
Kitchen garbage disposal (3 ft) Busy urban street, daytime	80	Loud	
Normal automobile at 65 mph (25 ft) Vacuum cleaner (3 ft)	70		Speech interference
Large air conditioning unit (20 ft) Normal conversation (3 ft)	60	Moderate	
Quiet residential area Light auto traffic (100 ft)	50		Sleep interference
Library Quiet home	40	Faint	
Soft whisper (15 ft)	30		
Broadcasting studio	20	Very Faint	
Threshold of human hearing	0-10		
Note: Both subjective evaluations and physiological responses are continuous, without true threshold boundaries. Consequently, there are overlaps among categories of response that depend on the sensitivity of the noise receptors.			

Table 4: Noise Abatement/Impact Criteria by Land Use (L_{eq} - dBA)

Land Use - Primary Activity	FHWA Noise Abatement Criteria	MoDOT Noise Impact Criteria
Residential, Recreation, Churches, Schools, Hotels (Exterior Levels)	67	66
Commercial, Industrial (Exterior Levels)	72	71
Residential, Recreation, Churches, Schools, Hotels (Interior Levels)	52	51

2.3 Ambient Noise Monitoring

Existing noise levels were monitored at nine locations in the project corridor to document general existing ambient noise levels. Traffic noise from the existing highway is the main source of noise in the area.

The monitoring locations are shown in Figures 1 to 3. A series of one hour measurements were taken at each monitoring site to establish the average noise levels ($L_{eq}(h)$) during the morning and afternoon peak noise hour at locations both adjacent to the existing alignment of U.S. Route 63, as well as at locations further from U.S. Route 63 in quieter areas closer to one or more of the proposed alternative alignments. Recorded daily peak hour noise levels at each location are shown in Table 5.

Table 5: Peak Hour Noise Monitoring Results and Distance from U.S. Route 63

Monitoring Location	Distance from Route 63 (feet)	Morning Peak Hour Noise Level (dBA)	Afternoon Peak Hour Noise Level (dBA)
Site #1	1,700	54	52
Site #2	2,150	54	56
Site #3	6,900	49	51
Site #4	3,250	50	50
Site #5	75	71	70
Site #6	80	66	65
Site #7	80	68	68
Site #8	75	61	62
Site #9	250	59	63

The results show that noise levels at locations within approximately 250 feet of Route 63 are currently between 62 dBA and 71 dBA during the loudest hour of the day. Locations further away from the existing highway have noise levels between 50 dBA and 56 dBA during the loudest hour of the day. The results in Table 5 show how the highest average noise levels generally decrease with distance from the existing highway.

2.4 Traffic Noise Modeling

The traffic noise analysis conducted for the DEIS used a simplified screening-level approach in conjunction with FHWA's Traffic Noise Model (TNM, Version 2.5). The simplified screening-level analysis assumes the project area is completely flat and calculates noise levels at specified distances from the roadway. The simplified screening-level analysis does not take into account hills and other features that can block noise. The analysis was performed for each of the future (2036) Build and No Build Alternatives only. An existing (2008) traffic noise screening-level analysis was not included in this analysis. The screening analysis is designed to help understand project area noise levels at a planning level; provide a method of determining the potential for noise impacts; and allow for a side-by-side comparison of the proposed project alternatives. The screening-level analysis is not intended to provide accurate noise level predictions at each property.

Calculating the distance from the roadway to the residential (66 dBA) and commercial (71 dBA) noise impact contour for each alternative, and estimating the number of properties that are between the road and those contours identifies the range of potential noise impacts for each alternative. At this stage of the design process, no highway centerlines or preliminary design files are available that would allow for more detailed noise modeling. The project alternatives analyzed are corridor alignments that are approximately 300 feet wide in most locations. Typical future highway cross-sections for U.S. Route 63 were supplied by MoDOT and were used to determine the distance between travel directions in the two-dimensional screening model. Typical cross-sections are shown in Appendix B. For the purposes of this screening-level analysis, it was assumed that the future centerline of U.S. Route 63 would be generally in the center of each proposed project alternative corridor. For the purposes of estimating numbers of noise impacts associated with each project alternative, it was assumed that properties within the future highway right-of-way width (based on the typical sections provided) would be relocated as part of the project. These assumed relocations were therefore not counted in the project-impact property estimates.

The distance from the roadway to the point where traffic noise levels decline to below the noise impact criteria was calculated for nine sections of each highway alternative alignment, including the No Build Alternative. The nine sections were calculated separately to account for changes in the general amount of traffic in different sections and changes in the posted speed limits, both of which will affect how much traffic noise is generated.

Inputs to the model include vehicle volumes for several types of vehicles (e.g., cars, medium trucks, and heavy trucks), and vehicle speeds. Average annual daily traffic (AADT) volumes and conversion factors to derive future (2036) daily peak hour traffic volumes were supplied for use in the analysis by MoDOT. A summary of traffic data used in the analysis is provided in Appendix C. As directed by MoDOT, the same future 2036 traffic data were used for all alternatives, including the No Build Alternative. No alternative specific traffic data were available at the time of the analysis.

3.0 ENVIRONMENTAL CONSEQUENCES

A complete summary of the predicted distances to the residential and commercial noise impact contours, and a detailed count of estimated residential and commercial noise impacts under each alternative in each of the nine highway sections analyzed is included in Appendix D. Table 6 shows the range of calculated distances in feet from the centerline highway to the different noise impact contours in each of the nine sections of Route 63 included in the analysis.

Table 6: Range of Distances to Noise Impact Contours from the Highway (Feet)

Route 63 Analysis Section	No Build Alternative		Build Alternatives 1, 2 and the Preferred Alternative	
	Distance to Residential Noise Impact Contour (feet)	Distance to Commercial Noise Impact Contour (feet)	Distance to Residential Noise Impact Contour (feet)	Distance to Commercial Noise Impact Contour (feet)
Northern Project Limits to Westphalia City Limits (north end)	200	115	215	110
Westphalia City Limits (north end) to Westphalia City Limits (south end)	160	65	220*	115*
			130**	45**
Westphalia City Limits (south end) to Freeburg City Limits (north end)	190	105	205	100
Freeburg City Limits (north end) to Freeburg City Limits (south end)	125	45	190	85
Freeburg City Limits (south end) to Vienna City Limits (north end)	185	95	195	95
Vienna City Limits (north end) to Vienna City Limits (south end)	145	55	210	105
Vienna City Limits (south end) to Missouri Route 68	215	130	210	105
Missouri Route 68 to Phelps County Line	210	125	205	100
Phelps County Line to Southern Project Limits	205	125	200	95

* Distance for Alternative 1 and the Preferred Alternative
** Distance for Alternative 2

The number of potentially noise-impacted homes and businesses between the highway and the calculated noise contours were counted for each project alternative and are discussed below.

3.1 No Build Alternative

Table 7 summarizes the estimated number of impacts under each project alternative. Among the proposed alternatives, the No Build Alternative has the greatest overall potential to cause noise impacts with an estimated 234 residential impacts and 16 commercial impacts. This is because the existing alignment of U.S. Route 63 is where the majority of development in this area has occurred. The number of properties affected under Alternatives 1, 2, and the Preferred Alternative is much less than under the No Build Alternative because the new highway would be located on a new alignment in areas where there are currently far fewer homes and businesses compared to the existing highway location.

Table 7: Estimated Number of Noise Impacts under Each Alternative

Project Alternative	Number of Residential Noise Impacts	Number of Commercial Noise Impacts
No Build Alternative	234	16
Alternative 1	43	1
Alternative 2	77	5
Preferred Alternative	53	0

3.2 Build Alternative 1

As shown in Table 7, Build Alternative 1 has the least potential to cause noise impacts. Under Build Alternative 1 there would be approximately 43 residential impacts and 1 commercial impact. The number of properties affected under Build Alternatives 1 is relatively low because the new highway would be located in areas where there are few existing homes and businesses.

Some sections of Build Alternative 1 are located in areas where there is currently very little road noise. Monitoring locations #2, #4, and #9 are located close to the proposed alignment of Build Alternative 1. These areas, as shown in Table 5, have lower ambient noise levels than areas close to the existing highway. Properties in these quieter areas have the potential to be impacted by a substantial increase in noise. A substantial increase is defined by MoDOT as an increase of 15 dBA over existing noise levels. Depending on how close the future highway alignment comes to properties in these quieter areas, substantial noise increase impacts are possible. More detailed analysis of existing and future levels of noise would need to be performed to quantify the potential for substantial increase impacts.

3.3 Build Alternative 2

As shown in Table 7, Build Alternative 2 would result in approximately 77 residential impacts and 5 commercial impacts. Build Alternative 2 has the greatest potential to cause noise impacts among the three build alternatives.

Similar to Build Alternative 1, some sections of Build Alternative 2 are located in areas where there is currently very little road noise. Monitoring locations #1, #2, #3, #5, #8 and

#9 are located close to the proposed alignment of Build Alternative 2. These areas, as shown in Table 5, have lower ambient noise levels than areas close to the existing highway which could result in substantial noise increases depending on how close the future alignment is to nearby residences. More detailed analysis of existing and future levels of noise would need to be performed to quantify the potential for substantial increase impacts.

3.4 Preferred Alternative

As shown in Table 7, the Preferred Alternative would result in approximately 53 residential impacts.

Similar to Build Alternatives 1 and 2, some sections of the Preferred Alternative are located in areas where there is currently little road noise. Monitoring locations #1, #3, #6, and #9 are located close to the proposed alignment of the Preferred Alternative. These areas, as shown in Table 5, have lower ambient noise levels than areas close to the existing highway which could result in substantial noise increases depending on how close the future alignment is to nearby residences. More detailed analysis of existing and future levels of noise would need to be performed to quantify the potential for substantial increase impacts.

3.5 Cumulative Effects

Cumulative effects would vary between project alternatives based on the level of roadway system modification and additional roadway construction. Changes in the distribution of traffic volumes as a result of the project would increase future traffic noise levels in some areas and decrease traffic noise in others.

Changes in noise levels as a result of the project will occur in the context of the broader noise environment and would be cumulative relative to other changes that may occur. The general noise environment in the project area includes noise sources from U.S. Route 63 and local roadways in the area, industrial and commercial activities, as well as the residential development that has occurred in the area.

3.6 Construction Noise

Roadway construction activities that generate noise include clearing, cut-and-fill (grading) activities, removing old roadways, importing fill, and paving. These activities would result in unavoidable short-term increases in noise levels.

Construction vehicles and equipment engines will be the predominant source of noise during the construction phase of the project. Engine-powered equipment includes earthmoving, material-handling, and stationary equipment. Truck noise could also affect area residents because trucks will operate outside the project site. Other construction noise sources will include impact equipment and tools such as pile drivers.

Construction noise will be intermittent and construction noise levels will depend on the type, amount, and location of construction activities. The type of construction methods will establish the maximum noise levels of construction equipment used. The amount of construction activity will define how often construction noise will occur. The proximity of construction equipment to adjacent properties will affect the noise levels at specific properties. Maximum noise levels of construction equipment for the project will be similar to typical levels shown in Table 8.

Table 8: Typical Construction Equipment Noise (dBA)

Types of Activities	Types of Equipment	Range of Noise Levels at 50 feet
Material Handling	Concrete mixer	75-87
	Concrete pump	81-83
	Crane (movable)	76-87
	Crane (derrick)	86-88
Stationary Equipment	Pump	69-71
	Generator	71-82
	Compressor	74-87
Impact Equipment	Pneumatic wrench	83-88
	Rock drill	81-98
Land Clearing	Bulldozer	77-96
	Dump truck	82-94
Grading	Scraper	80-93
	Bulldozer	77-96
Paving	Paver	86-88
	Dump truck	82-94
Source: U. S. Environmental Protection Agency, 1971.		

4.0 EVALUATION OF NOISE ABATEMENT MEASURES

4.1 MoDOT Traffic Noise Abatement Policy

According to MoDOT's *Traffic Noise Policy*, traffic noise abatement will generally be considered whenever traffic noise impacts are identified. However, MoDOT will not normally provide abatement for commercial land uses or in areas of mixed land use that are dominated by or changing to commercial uses.

When noise impacts are identified, a number of possible noise abatement measures will be considered, including, but not limited to:

- Traffic management measures: modified speed limits, traffic control devices, time-use restrictions for certain vehicles, and prohibition of certain vehicle types.
- Changes in horizontal or vertical alignment to break the line of sight between receiver and source.
- Noise barriers or berms. A noise barrier or berm must provide a noise reduction of 5 decibels or more for first-row receivers.

Traffic noise abatement measures will be implemented on a highway project if found to be reasonable and feasible. The MoDOT traffic noise policy defines several reasonableness and feasibility criteria against which noise mitigation measures are evaluated.

4.1.1 Feasibility

Feasibility deals with the engineering considerations of noise abatement, e.g., topography, access, drainage, safety, maintenance, and whether other noise sources are present. Feasibility is the ability to provide abatement in a given location with consideration to the physical and acoustical limitations of the site. MoDOT requires at least a 5 dBA insertion loss for first-row receivers for noise abatement to be considered feasible.

4.1.2 Reasonableness

The reasonableness evaluation of proposed noise abatement mitigation measures is more subjective than evaluation of feasibility. Reasonableness implies use of common sense and good judgment and is based on a number of factors. Reasonableness factors for noise walls include, but are not limited to the following:

- Noise walls must provide noise reduction of at least 5 dBA for all primary receptors. Primary receptors are those closest to the highway.
- Noise walls must provide attenuation for more than one receptor.
- Noise walls must be 18 feet or less in height above normal grade.
- Noise walls must not interfere with normal access to the property.
- Noise walls must not pose a traffic safety hazard.
- Noise walls must not exceed a cost of $30,000 per benefited receptor. A benefited receptor is defined as one receptor that receives a noise reduction of 5 dBA or more.

- The majority of the affected residents (primary and benefited receptors) must concur that a noise wall is desired.

MoDOT has established that noise abatement will be considered reasonable if the cost to provide the abatement is $30,000 or less per benefited receptor. All receptors that will benefit from noise abatement will be included in the cost index. Benefited receptors are all residences, including those that are not first-row residences, but which receive a 5 dBA reduction in noise or greater due to the implementation of traffic noise abatement. Residences include all dwelling units such as homes, apartments, and mobile homes.

Timing of development is an important factor in determining the reasonableness of noise abatement. In terms of providing noise mitigation, MoDOT's first priority is to provide reasonable and feasible mitigation to residential areas adjacent to newly constructed highways; to residential areas that were constructed before an existing highway was sited; and to residential areas that have been in place along an existing highway for an extended period of time. MoDOT does not automatically provide noise mitigation, even if it can be shown to be reasonable and feasible, in cases where new residential areas have developed along an existing highway, or after a new highway project's date of public knowledge, without proper consideration of traffic noise impacts by the local community or developer.

The views of impacted residents or organizations are a major factor in the consideration of noise abatement. This mainly applies to projects in which a noise barrier or berm is being considered for noise abatement. MoDOT will make every reasonable effort to solicit the views and opinions of impacted residents before making a final determination on the reasonableness and feasibility of noise abatement.

When considering the construction of noise abatement measures, MoDOT will also consider any potential negative effects on the natural environment, as well as potential positive effects of noise reduction during highway construction.

4.2 Traffic Noise Abatement Measures

The two-dimensional screening level analysis performed at this stage of the DEIS is not sufficient to evaluate noise mitigation measures against MoDOT's reasonableness and feasibility criteria; therefore, a detailed mitigation analysis was not conducted as part of this analysis. It is possible, however, to consider the likelihood that MoDOT's stated noise mitigation measures would be compatible with the project.

Traffic management measures such as modified speed limits, traffic control devices, time-use restrictions for certain vehicles, and prohibition of certain vehicle types are unlikely to be compatible with the U.S. Route 63 project because of the highways importance as a freight route.

Changes in horizontal or vertical alignment to break the line of sight between receiver and source may provide a reduction in traffic noise impacts at some properties. It should be noted that the two-dimensional screening level analysis performed for the DEIS does not take into account topographical shielding of receptors from the highway and so it is likely to overestimate the potential number of noise impacts. More detailed analysis of future noise levels and changes between the existing and future noise levels should be undertaken when detailed highway design files are available in order to evaluate the need for, and effectiveness of further noise mitigation measures.

For a noise wall to be considered cost effective (reasonable) under the MoDOT policy, it must be able to benefit more than one property, with no direct access (such as driveways) onto the highway dividing benefited properties. The low density of residential properties throughout the corridor makes it unlikely that enough noise-impacted properties could be benefited in one location to meet the allowable $30,000 per property reasonableness criteria of the MoDOT noise policy.

Walls with gaps to allow access are not effective at blocking noise and so are usually not able provide the minimum noise reduction needed to be considered reasonable. The proposed highway alignments (Alternatives 1, 2, and the Preferred Alternative) are located in areas where there are very few, spread-out properties that would still need to access the highway via driveways in many locations. The need for continued unrestricted access to the new facility makes it unlikely that sufficient insertion losses (noise reductions) could be achieved at noise-impacted residential properties to meet the feasibility criteria of the MoDOT noise policy.

Due to these limitations, areas where noise walls would be likely to be both effective and reasonable were not evident at the conclusion of the screening levels analysis presented here. A detailed three-dimensional noise analysis would be required once a final alternative alignment has been identified and preliminary engineering has been completed to confirm whether noise barrier abatement could be reasonably and feasibly constructed as part of this project in areas predicted to have future noise impacts.

4.3 Construction Noise Abatement Measures

To reduce the impacts of construction noise, MoDOT requires all contractors comply with applicable local, state, and federal laws and regulations relating to construction noise levels.

In an effort to reduce impacts during construction, MoDOT may require contractors to equip and maintain muffling equipment for trucks and other machinery to minimize noise levels. Contract specifications may also restrict excessively noisy construction activities to daytime working hours. Further, MoDOT will monitor project construction noise and may require extra measures to reduce noise in cases where noise standards are exceeded.

A number of noise reduction measures are available for consideration. Construction noise strategies that could be implemented may include:

- Wherever possible, sound walls and retaining walls would be built in their final locations as soon as possible to help mitigate the temporary noise impacts from construction.
- Restricting night operations for particularly loud construction practices.

- Using temporary noise mitigation screens in residential area impacts to reduce noise levels.

5.0 COORDINATION WITH LOCAL OFFICIALS

It is MoDOT's belief that highway traffic noise should be reduced through a program of shared responsibility. Local governments should use their authority to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that developments are planned, designed, and constructed so as to minimize noise impacts.

It is MoDOT policy to furnish the results of highway traffic noise analyses to local government officials. Local coordination will specifically be accomplished through the distribution of highway project environmental documents and noise study reports. MoDOT encourages local communities and developers to practice noise-compatible development.

6.0 REFERENCES

Missouri State Department of Transportation
1997 Traffic Noise Policy.