

TRAFFIC NOISE ANALYSIS
US 52 (Jefferson Street) from River
Road to Houbolt Road
Will County, Illinois

US 52 (Jefferson Street)
Job No.: P-91-019-19

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GLOSSARY OF ACRONYMS

ADT	Average Daily Traffic
CFR	Code of Federal Regulations
CNE	Common Noise Environment
dB	Decibel
dB(A)	Decibels, A-Weighted
DHV	Design Hourly Volume
FHWA	Federal Highway Administration
IDOT	Illinois Department of Transportation
mph	Miles per Hour
NAC	Noise Abatement Criteria
TNM	Traffic Noise Model
TNM 2.5	FHWA Traffic Noise Model Version 2.5

1.0 INTRODUCTION

A traffic noise analysis was completed for the proposed improvements to US 52 from River Road to Houbolt Road. This project is located in the western central portion of Will County, Illinois within the Village of Shorewood and in the City of Joliet. Approximate study limits include US 52 from just west of River Road (approximately 750 feet) to just east of Houbolt Road, approximately 930 feet, see Exhibit A.

The proposed work includes the widening of US 52 from River Road to IL 59 from two lanes to four lanes, the construction of a raised curb and center median from River Road to Houbolt Road, and major intersection improvements at the US 52 intersection with IL 59, the I-55 interchange ramps, and at Houbolt Road. The design year for the proposed project is 2050.

The purpose of this report is to document the selection of sensitive noise receptors, the noise monitoring methodology, the traffic noise impact analysis, and the traffic noise abatement evaluation.

1.1 Existing Land Use

The western portion of the project area is a mix of residential, commercial, and institutional uses. The central portion of the project area, near the I-55/US 52 interchange, consists of commercial and residential uses. The eastern portion of the project area consists of the Joliet Regional Airport, a cemetery, and commercial and institutional facilities. Exhibit B, Land Use Map depicts land use based on field reviews and available aerial photography.

1.2 Zoning and Comprehensive Land Use Plan Designations

The Will County comprehensive plan [*Will Connects 2040 Long Range Transportation Plan* (adopted March 2017)] identifies the intersection capacity improvements at IL 59 and US 52^[1], which is included in the US 52 from River Road to Houbolt Road study.

According to the Shorewood Community Comprehensive Plan, the Village of Shorewood's planning boundary runs along the west side of I-55, thus only containing a portion of the project area ^[2]. The existing land use map depicts single-family residential, agricultural/rural residential/undeveloped land, commercial, industrial, government/institutional, manufactured home park, and open space west of the I-55/US 52 interchange. The proposed land use map indicates most of the land along US 52, west of the I-55 interchange as being commercial, residential, business park, government/institutional, and open space/park. The City of Joliet does not have any planning documents for this portion of the city.

2.0 NOISE BACKGROUND AND REGULATIONS

2.1 Noise Background

Noise is generally defined as unwanted sound and is measured in terms of sound pressure level expressed in decibels (dB) that is composed of different frequencies. The human ear is less sensitive to higher and lower frequencies than mid-range frequencies. To compensate for low-end and high-end frequency insensitivity and render noise levels readings more meaningful, an "A-weighting" scale is used to approximate the response of the human ear. The A-weighted decibel (dB(A)) unit measures perceptible sound energy and factors out low- and high-end fringe frequencies.

Noise decreases with distance from a noise source. The noise level from a line source, such as moving traffic on a road will decrease between 3 and 4.5 dB(A) with every doubling of distance. Research has indicated that a difference of 10 dB(A) is perceived half as loud, or twice as loud, to an average listener. Typically, an observer can barely perceive an increase of sound level of 3 dB(A).

The Federal Highway Administration's (FHWA) Traffic Noise Model Version 2.5 (TNM 2.5) represents noise levels as $L_{eq(h)}$. The L_{eq} is defined as the equivalent steady-state sound level which, in a stated period of time, contains the same acoustic energy as the time-varying sound level during the same period. The $L_{eq(h)}$ is the hourly value of L_{eq} measured in dB(A). Noise levels referred to in this report are stated as hourly-equivalent sound pressure levels $L_{eq(h)}$ in terms of dB(A).

2.2 Federal Regulations

The Federal Aid Highway Act of 1970 required the FHWA to develop noise standards and abatement requirements for highway traffic noise. These standards are contained in Title 23, Code of Federal Regulations (CFR), Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* ^[3]. This regulation applies to highway construction projects where a state department of transportation has requested Federal funding for participation in the project. FHWA has developed three "project types" to assess noise analysis applicability. Federal regulations apply to all Type I and Type II projects that require FHWA approval and/or receive Federal-aid funding. The implementation of a Type II program is optional and not mandatory. Type II projects are not considered for abatement in Illinois. Type III projects do not require a noise analysis. The proposed US 52 project is classified as a Type I project, as it includes the addition of through traffic lanes. Therefore, a traffic noise analysis is required for the project.

The FHWA regulations establish Noise Abatement Criteria (NAC) activity categories based on land use to assess potential traffic noise impacts as defined in 23 CFR 772. The FHWA NAC and description of activity categories are shown in Table 2.1. Traffic noise impacts occur when predicted design year noise levels under the build scenario approach, meet or exceed the NAC, or if there are substantial increases in traffic noise over existing conditions, independent of the NAC.

The FHWA NAC are used to identify locations where traffic noise impacts occur. The NAC are not used as goals for noise attenuation design criteria or design targets.

Table 2.1 – FHWA Noise Criteria Hourly “A-Weighted” Sound Level - Decibels (dB(A))

Activity Category	Noise Abatement Criteria dB(A)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B¹	67 (Exterior)	Residential.
C¹	67 (Exterior)	Active sports areas, amphitheatres, 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 stations, recording studios, schools, and television studios.
E¹	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D.
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.

¹Includes undeveloped lands permitted for this activity category.

Source: FHWA, 23 CFR, Part 772^[3]

2.3 Illinois Department of Transportation Policy

FHWA has deferred to the State agencies to define the noise level that “approaches” the NAC and to define a substantial increase in traffic noise levels. The Illinois Department of Transportation (IDOT) is the agency responsible for implementing the FHWA traffic noise regulation in Illinois and had developed a policy on highway noise ^[4]. IDOT defines noise impacts as follows:

- Design-year (typically 20 years into the future) traffic noise levels are predicted to approach, meet, or exceed the NAC, with approach defined as 1 dB(A) less than the NAC; or
- Design-year traffic noise levels are predicted to substantially increase (15 dB(A) or greater) over the existing traffic generated noise levels.

Based on the approach definition determined by IDOT, Table 2.2 provides the noise levels at which a traffic noise impact would occur and would require consideration of traffic noise abatement for the design year.

Table 2.2 – IDOT Noise Criteria Hourly “A-Weighted” Abatement Evaluation

Activity Category	IDOT Approach Criteria dB(A)	Description of Activity Category
A	56 (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	66 (Exterior)	Residential.
C	66 (Exterior)	Active sports areas, amphitheatres, 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	51 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio stations, recording studios, schools, and television studios.
E	71 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D.
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: IDOT Highway Traffic Noise Assessment Manual^[4]

3.0 NOISE RECEPTOR SELECTION

IDOT defines a receptor as a discrete or representative location of a common noise environment (CNE) for any of the activities listed in Table 2.2. Primary consideration should be given to exterior areas where frequent human use occurs for activity categories A, B, C, and E. Consideration should be given to activity category D land uses only if no exterior uses are identified.

Sensitive noise receptors with similar characteristics such as land use, topography, and roadway geometrics can be grouped into CNEs. One worst-case noise receptor within each CNE is considered representative of the entire CNE for the purposes of noise impact screening. This receptor is called a representative receptor. Typical CNE groupings include commercial areas, residential areas, recreational areas/lands, and cemeteries.

Existing land uses within the study corridor are generally described in Section 1.1. Land uses within 500 feet of the edges of the project area were reviewed for use as CNEs. This distance of 500 feet is based on FHWA’s 2010 performance evaluation of the TNM, which found that highway traffic noise typically does not cause impacts at distances greater than 500 feet from heavily traveled freeways or more than 100 to 200 feet from lightly traveled roads. This traffic noise study grouped the study area into 33 CNEs. A total of 33 representative receptors (labeled US52-R1

through US52-R33 in Table 3.1), were chosen to represent the study area. These were evaluated to determine the existing conditions representing current geometries, features, and traffic data, the No-Build (2050), and the Build (2050) scenarios. Per IDOT Noise Policy guidance, 25 to 50 percent of representative receptors must be field monitored for TNM model validation; therefore, nine noise sensitive receptors were field monitored (shown in **bold** in Table 3.1). Section 4 of the report discusses the field noise measurements. The location of all the CNEs and the receptor sites are shown on Exhibit C. Table 3.1 lists a description of the representative receptor, the activity category, number of receptors in the CNE, and the IDOT approach criterion associated with each CNE.

Table 3.1 – Noise Receptor Descriptions

CNE / Representative Receptor ID¹	Representative Receptor Description	Activity Category	IDOT Approach Criterion dB(A)	No. of Receptors in CNE
1/US52-R1	Residential – Multi-Family Back Yard	B	66	17
2/US52-R2	Commercial – Restaurant Bench/Table	E	71	3
3/US52-R3	Residential – Single-Family Front Yard	B	66	16
4/US52-R4	Residential – Multi-Family Back Yard	B	66	44
5/US52-R5	Commercial – Dentist Office Patio	E	71	1
6/US52-R6	Residential – Single-Family Back Yard	B	66	12
7/US52-R7	Residential – Single-Family Back Yard	B	66	20
8/US52-R8	Residential – Single-Family Front Yard	B	66	4
9/US52-R9	Residential – Single-Family Back Yard	B	66	6
10/US52-R10	Commercial – Shopping Complex Gazebo	E	71	2
11/US52-R11	Commercial – Restaurant Bench	E	71	4
12/US52-R12	Residential – Single-Family Back Yard	B	66	8
13/US52-R13	Residential – Single-Family Front Yard	B	66	41 ²
14/US52-R14	Commercial – Coffee Shop Bench	E	71	2
15/US52-R15	Residential – Single-Family Front Yard	B	66	5
16/US52-R16	Residential – Single-Family Front Yard	B	66	1
17/US52-R17	Residential – Single-Family Back Yard	B	66	3
18/US52-R18	Residential – Mobile Home Back Yard (IL 59)	B	66	96
19/US52-R19	Residential – Mobile Home Back Yard (US 52)	B	66	39
20/US52-R20	Church Basketball Court	C	66	1
21/US52-R21	Forest Preserve - Recreational Area Bench	C	66	3
22/US52-R22	Residential – Single-Family Back Yard	B	66	7
23/US52-R23	Residential – Single-Family Front Yard	B	66	6
24/US52-R24	Law Firm Patio	E	71	1
25/US52-R25	Playground	C	66	1
26/US52-R26	Hotel – Bench	E	71	2
27/US52-R27	Commercial – Bar and Grill Patio	E	71	2
28/US52-R28	Cemetery Bench	C	66	5
29/US52-R29	Residential – Single-Family Front Yard	B	66	4
30/US52-R30	Church – Outdoor Facilities	C	66	1

CNE / Representative Receptor ID ¹	Representative Receptor Description	Activity Category	IDOT Approach Criterion dB(A)	No. of Receptors in CNE
31/US52-R31	Commercial – Restaurant Patio	E	71	1
32/US52-R32	Church - Gazebo	C	66	1
33/US52-R33	Residential – Single-Family Front Yard	B	66	1

¹ **Bold** indicates noise sensitive receptor field measured for model validation.

² This analysis assumes that four receptors within CNE 13 will be displaced in the future proposed conditions.

4.0 FIELD NOISE MEASUREMENTS

4.1 Purpose

The assessment of traffic noise impacts requires the use of predictive models to quantify the likely noise levels for a variety of scenarios. To use numerical modeling to predict traffic noise levels, it must first be demonstrated that the use of approved noise prediction methods satisfactorily estimates the noise levels. This is accomplished by comparing field measured values to predicted values. The measure of satisfactory comparison is if the measured and predicted values differ by no more than 3 dB(A). A favorable comparison indicates the noise source is predominantly from highways (at least at the time of the measurements), and the model results represent valid predictions suitable for use in assessing impacts. This section describes the field monitoring and model validation conducted for the project.

4.2 Field Noise Measurement Methodology

The current FHWA approved model for prediction of traffic noise, TNM 2.5, was used for the comparison to the measured data, and for all other modeling in the noise study.

Existing noise levels were monitored at nine locations along the study corridor using a Quest SoundPro DL-2-1/3 noise meter. These locations are shown in Exhibit C. Noise monitoring was conducted on July 24, 2019, between the hours of 8 am to 12 pm and 1 pm to 6 pm in an attempt to monitor the peak-hour noise conditions.

The $L_{eq(h)}$ levels were recorded for a 15-minute interval. During the noise measurement, the noise meter was tripod-mounted, and the microphone was located approximately five feet above the ground surface. The meter was calibrated with the manufacturer-supplied standard noise calibrator before use, and also was checked before each sound level measurement session. No adjustments to the calibration were required during any of the monitoring. A foam windscreen (supplied by the manufacturer) was used during all sound measurements.

In addition to noise monitoring, traffic volume and composition during the monitoring period were recorded based on field observation. Noise sources other than traffic noise were also noted. All weather parameters were within acceptable ranges for conducting noise measurements.

4.3 Field Noise Monitoring Results

Measured and predicted noise levels are shown in Table 4.1. The difference in the measured and predicted value noise levels fell within 3 dB(A) for all nine locations. TNM model output files for model validation are presented in Exhibit D. Based on this comparison, the TNM 2.5 model developed for the US 52 noise study area was found to accurately predict highway traffic noise in this area.

Table 4.1 – Model Validation Summary

Location ¹	Validation Points	Distance from Existing Edge of Pavement (ft)	General Propagation Path Characteristics	2019 Measured Sound Level / 2019 TNM 2.5 Model Validation Sound Level (dB(A))	Variation (dB(A))
V-7	Side Yard	16 ²	No Obstructions	72 / 70	-2
V-13	Front Yard	18 ²	No Obstructions	70 / 69	-1
V-19	Back Yard	17 ²	No Obstructions	68 / 68	0
V-25	Outdoor Play Area	37 ³	No Obstructions	63 / 61	-2
V-26	Bench	41 ⁴	No Obstructions	59 / 62	+3
V-27	Outdoor Seating Area	102 ²	No Obstructions	64 / 63	-1
V-28	Cemetery Bench	146 ²	No Obstructions	61 / 60	-1
V-30	Outdoor Area	119 ⁵	No Obstructions	56 / 56	0
V-32	Gazebo	208 ²	Direct sightline blocked by trees.	55 / 57	+2

¹See Exhibit C for model validation location.

²From US 52 edge of pavement.

³From Channahon Street edge of pavement.

⁴From SE Frontage Road edge of pavement.

⁵From Houbolt Road edge of pavement.

5.0 NOISE ANALYSIS METHODOLOGY

Traffic noise levels were predicted with FHWA's TNM 2.5, the current approved noise model software for predicting and analyzing traffic noise. Three scenarios, existing conditions, No-Build Alternative, and the Build Alternative were analyzed. The existing condition was defined as current roadway geometry with existing traffic characteristics and the No-Build scenario uses current roadway geometry with forecasted (2050) traffic characteristics. The Build scenario is the prediction of traffic noise levels if the proposed improvements are constructed with projected traffic volumes (2050). Data inputs into TNM 2.5 included roadway geometry, physical features (ground elevation, tree zones, water, buildings, etc.), traffic data and traffic control (stop signs, traffic lights, etc.), and receptor location and elevation.

5.1 Roadway Geometry and Physical Features

Roadway geometry (existing and proposed) was obtained from project geometric plans. Ground zones, building location, and elevation data were obtained from project specific mapping, aerial photography, and field reconnaissance.

5.2 Traffic Volume, Composition, and Speeds

Existing and forecasted (2050) traffic volumes, speeds, and vehicle classifications (automobile, medium truck, and heavy truck) were obtained from forecasts developed for the proposed project. Traffic control devices generally consist of stop signs, traffic signals, speed limits, etc. Traffic speed was the speed limit posted at various points throughout the study corridor, with the exception of those who were making turns and decelerated.

The IDOT Highway Traffic Noise Assessment Manual states “the objective of the traffic noise analysis is to predict the worst hour traffic noise conditions”. This is typically represented by design hourly volume (DHV). Table 5.1 illustrates the DHV and the composition (cars, medium trucks, and heavy trucks), which was calculated from the average daily traffic (ADT) and used in the TNM 2.5 noise model.

The roadways used in the TNM model include:

- US 52 – Study Limit to River Road
- US 52 – River Road to Brookshore Drive
- US 52 – Brookshore Drive to IL 59
- US 52 – IL 59 to West Frontage Road
- US 52 – West Frontage Road to SB I-55 Ramps
- US 52 – SB I-55 Ramps to NB I-55 Ramps
- US 52 – NB I-55 Ramps to East Frontage Road
- US 52 – East Frontage Road to McDonald Avenue
- US 52 – McDonald Avenue to Airport Drive
- US 52 – Airport Drive to Houbolt Road
- US 52 – Houbolt Road to Study Limit
- River Road (from US 52 north to Home Court and from US 52 south to Huntington Drive)
- Brookshore Road (from US 52 to north of Woodbrook Court and from US 52 south to Garden Terrace)
- IL 59 (from US 52 to north of Summer Street and from US 52 south to Channahon Street)
- West Frontage Road (from US 52 to the north 1,200 feet and from US 52 to the south 650 feet)
- SB I-55 Ramps (Exit Ramp and Entrance Ramp)
- NB I-55 Ramps (Exit Ramp and Entrance Ramp)
- I-55 Mainline Lanes
- East Frontage Road (from US 52 to the north 900 feet and from US 52 to the south 1300 feet)
- McDonald Avenue (from US 52 to the south 500 feet)
- Airport Drive (from US 52 to the south 500 feet)
- Houbolt Road (from US 52 to the north 500 feet and from US 52 to the south 650 feet)

Table 5.1 – Traffic Design Hourly Volume, Composition, and Speed Limit

Roadway Segment / Vehicle Type	Existing DHV		Existing Speed Limit (mph)	Projected DHV (2050)		Future Speed Limit (mph)
	EB	WB		EB	WB	
US 52						
Study Limit to River Road	EB	WB		EB	WB	
Auto	423	533	45	587	1028	45
Medium Truck	10	12	45	14	22	45
Heavy Truck	10	12	45	14	22	45
River Road to Brookshore Drive	EB	WB		EB	WB	
Auto	704	726	35	798	1431	35
Medium Truck	16	17	35	18	31	35
Heavy Truck	16	17	35	18	31	35
Brookshore Drive to IL 59	EB	WB		EB	WB	
Auto	724	1041	35	889	1584	35
Medium Truck	17	23	35	20	33	35
Heavy Truck	17	23	35	20	33	35
IL 59 to West Frontage Road	EB	WB		EB	WB	
Auto	829	1395	40	884	1544	40
Medium Truck	19	30	40	20	33	40
Heavy Truck	11	16	40	10	18	40
West Frontage Road to SB I-55 Ramps	EB	WB		EB	WB	
Auto	925	1337	40	966	1598	40
Medium Truck	20	29	40	21	35	40
Heavy Truck	10	16	40	11	18	40
SB I-55 Ramps to NB I-55 Ramps	EB	WB		EB	WB	
Auto	1184	1105	40	1209	1539	40
Medium Truck	26	24	40	25	33	40
Heavy Truck	13	13	40	13	17	40
NB I-55 Ramps to East Frontage Road	EB	WB		EB	WB	
Auto	1184	1410	40	1539	689	40
Medium Truck	26	30	40	34	15	40
Heavy Truck	14	15	40	18	8	40
East Frontage Road and McDonald Avenue	EB	WB		EB	WB	
Auto	1054	1193	40	1359	2058	40
Medium Truck	23	27	40	29	43	40
Heavy Truck	12	14	40	15	23	40

Table 5.1 – Traffic Design Hourly Volume, Composition, and Speed Limit

Roadway Segment / Vehicle Type	Existing DHV		Existing Speed Limit (mph)	Projected DHV (2050)		Future Speed Limit (mph)
	EB	WB		EB	WB	
McDonald Avenue to Airport Drive						
Auto	1063	1194	40	1359	1979	40
Medium Truck	23	26	40	29	41	40
Heavy Truck	12	14	40	15	21	40
Airport Drive to Houbolt Road						
Auto	1030	1194	40	1325	1999	40
Medium Truck	23	26	40	29	42	40
Heavy Truck	12	14	40	15	22	40
Houbolt Road to Study Limit						
Auto	1157	1060	45	1853	2160	45
Medium Truck	24	23	45	39	46	45
Heavy Truck	12	13	45	20	24	45
River Road						
North Leg (from US 52 to north)						
Auto	486	519	25	827	759	25
Medium Truck	0	0	25	0	0	25
Heavy Truck	5	7	25	9	9	25
South Leg (from US 52 to south)						
Auto	401	439	25	527	619	25
Medium Truck	0	0	25	0	0	25
Heavy Truck	6	5	25	6	7	25
Brookshore Drive						
North Leg (from US 52 to north)						
Auto	64	111	25	103	164	25
Medium Truck	1	3	25	2	3	25
Heavy Truck	1	3	25	2	3	25
South Leg (from US 52 to south)						
Auto	107	121	25	154	196	25
Medium Truck	3	2	25	3	2	25
Heavy Truck	3	2	25	3	2	25
IL 59						
North Leg (from US 52 to north)						
Auto	1380	1015	40	1882	1407	40

Table 5.1 – Traffic Design Hourly Volume, Composition, and Speed Limit

Roadway Segment / Vehicle Type	Existing DHV		Existing Speed Limit (mph)	Projected DHV (2050)		Future Speed Limit (mph)
Medium Truck	29	23	40	40	30	40
Heavy Truck	29	23	40	40	30	40
South Leg (from US 52 to south)	NB	SB		NB	SB	
Auto	1018	888	40	1581	1157	40
Medium Truck	23	19	40	34	25	40
Heavy Truck	23	19	40	34	25	40
West Frontage Road						
North Leg (from US 52 to north)	NB	SB		NB	SB	
Auto	18	14	30	30	10	30
Medium Truck	1	2	30	1	1	30
Heavy Truck	1	2	30	1	1	30
South Leg (from US 52 to south)	NB	SB		NB	SB	
Auto	86	53	30	114	74	30
Medium Truck	2	1	30	2	1	30
Heavy Truck	2	1	30	2	1	30
SB I-55 Ramps						
North Leg (Exit to US 52)	NB	SB		NB	SB	
Auto	N/A	817	30	N/A	736	30
Medium Truck	N/A	36	30	N/A	33	30
Heavy Truck	N/A	27	30	N/A	25	30
South Leg (Entrance to I-55 SB)	NB	SB		NB	SB	
Auto	N/A	355	50	N/A	447	50
Medium Truck	N/A	16	50	N/A	20	50
Heavy Truck	N/A	12	50	N/A	15	50
NB I-55 Ramps						
North Leg (Entrance to I-55 NB)	NB	SB		NB	SB	
Auto	576	N/A	45	935	N/A	45
Medium Truck	25	N/A	45	41	N/A	45
Heavy Truck	19	N/A	45	31	N/A	45
South Leg (Exit to US 52)	NB	SB		NB	SB	
Auto	295	N/A	30	647	N/A	30
Medium Truck	13	N/A	30	29	N/A	30
Heavy Truck	11	N/A	30	22	N/A	30

Table 5.1 – Traffic Design Hourly Volume, Composition, and Speed Limit

Roadway Segment / Vehicle Type	Existing DHV		Existing Speed Limit (mph)	Projected DHV (2050)		Future Speed Limit (mph)
East Frontage Road						
North Leg (from US 52 to north)	NB	SB		NB	SB	
Auto	273	264	45	500	340	45
Medium Truck	3	4	45	6	5	45
Heavy Truck	3	4	45	6	5	45
South Leg (from US 52 to south)	NB	SB		NB	SB	
Auto	162	76	45	211	118	45
Medium Truck	4	1	45	4	2	45
Heavy Truck	4	1	45	4	2	45
McDonald Avenue						
South Leg (from US 52 to south)	NB	SB		NB	SB	
Auto	65	30	30	10	25	30
Medium Truck	0	0	30	0	0	30
Heavy Truck	2	1	30	1	1	30
Airport Drive						
South Leg (from US 52 to south)	NB	SB		NB	SB	
Auto	15	49	30	25	64	30
Medium Truck	2	1	30	2	1	30
Heavy Truck	2	1	30	2	1	30
Houbolt Road						
North Leg (from US 52 to north)	NB	SB		NB	SB	
Auto	19	16	45	30	25	45
Medium Truck	1	3	45	1	3	45
Heavy Truck	1	3	45	1	3	45
South Leg (from US 52 to south)	NB	SB		NB	SB	
Auto	770	516	45	1204	830	45
Medium Truck	18	11	45	26	18	45
Heavy Truck	10	6	45	14	9	45
I-55						
Mainline	NB	SB		NB	SB	
Auto	2041	1994	65	3474	2991	65
Medium Truck	197	193	65	335	289	65
Heavy Truck	222	217	65	377	325	65

Notes: N/A = Not available

5.3 Receptors

As discussed in Section 3.0, 33 representative receptors were chosen to represent the common noise environments located within the study area. Receptors included residential, commercial, and institutional areas. Receptor locations were based on review of aerial photography, topographic mapping, and field reconnaissance. In order to generate conservative values and be more protective of the noise sensitive receptors, receptor locations were placed on ground floor outdoor gathering spaces where most outdoor activity is assumed to occur.

The receptor position is defined by coordinates. The coordinates used in the model were obtained from the plan sheets for the project; thus, assuring the coordinate values used in the noise modeling are consistent with other project uses. Representative receptors are shown on Exhibit C and are listed on Tables 3.1 and 6.1.

5.4 Receptor Distances and Elevation

The representative noise receptors' elevations fluctuate between approximately 572 to 620 feet above sea level. Table 6.1 includes the distances of each representative noise sensitive receptor from the roadway edge-of-pavement for each scenario. Representative noise sensitive receptors for the existing conditions and No-Build (2050) scenarios range from 25 to 408 feet from the existing roadway edge-of-pavement. For the Build (2050) scenario, representative noise sensitive receptors are located at distances ranging from 25 to 401 feet from the modeled proposed roadway edge-of-pavement.

6.0 TNM RESULTS

As previously described, existing noise levels for sensitive receptors were determined by modeling. These values were used for comparison to models of proposed changes, to determine if predicted noise levels created by the Build scenario would approach, meet, or exceed the NAC. The TNM 2.5 model output data tables showing results from each of the TNM models are included in Exhibit D.

Table 6.1 summarizes the modeled noise levels for the existing conditions, No-Build (2050), and Build (2050) scenarios. Existing conditions scenario traffic noise levels range from 49 dB(A) at Representative Receptor US52-R12 to 68 dB(A) at Representative Receptor US52-R19. No-Build scenario traffic noise levels range from 50 dB(A) at Representative Receptor US52-R12 to 69 dB(A) at Representative Receptor US52-R19.

The Build scenario traffic noise levels range from 51 dB(A) at Representative Receptor US52-R12 to 70 dB(A) at Representative Receptor US52-R19. Five (US52-R7, US52-R9, US52-R13, US52-R18, and US52-R19) of the 33 representative receptors (representing 67 single-family residential receptors and 135 mobile-home residential receptors) approach, meet, or exceed the NAC and are therefore considered impacted under this scenario.

The range of increase in noise from the Existing to Build scenarios is 0 to 3 dB(A). An impact due to substantial increase (15 dB(A) or greater) does not occur.

Table 6.1 – Noise Impact Summary

CNE (Activity Category)	Description of Representative Receptor (Receptor ID)	IDOT Approach Criterion dB(A)	No. of Receptors Represented	Existing (2020)		No-Build (2050)	Build (2050)			Impact (Yes/No)
				Distance to Nearest Edge of Pavement (ft)	Noise Level dB(A)	Noise Level dB(A)	Distance to Nearest Edge of Pavement (ft)	Noise Level dB(A)	Increase Over Existing	
CNE 1 (B)	Multi-Family Back Yard (US52-R1)	66	17	64 ¹	59	60	64 ¹	60	1	No
CNE 2 (E)	Restaurant Outdoor (US52- R2)	71	3	178 ²	57	59	179 ²	58	1	No
CNE 3 (B)	Single-Family Front Yard (US 52-R3)	66	16	82 ²	60	61	83 ²	63	3	No
CNE 4 (B)	Multi-Family Back Yard (US52-R4)	66	44	75 ²	61	62	61 ²	64	3	No
CNE 5 (E)	Dentist Office Patio (US52-R5)	71	1	195 ²	55	56	178 ²	58	3	No
CNE 6 (B)	Single-Family Back Yard (US52-R6)	66	12	321 ²	51	52	314 ²	53	2	No
CNE 7 (B)	Single-Family Back Yard (US52-R7)	66	20	49 ²	64	65	42 ²	67	3	Yes
CNE 8 (B)	Single-Family Front Yard (US52-R8)	66	4	45 ³	55	56	45 ³	56	1	No
CNE 9 (B)	Single-Family Back Yard (US52-R9)	66	6	50 ²	64	65	44 ²	66	2	Yes
CNE 10 (E)	Shopping Complex Gazebo (US52- R10)	71	2	94 ²	60	61	87 ²	63	3	No
CNE 11 (E)	Restaurant Bench (US52- R11)	71	4	73 ²	62	63	62 ²	64	2	No

CNE (Activity Category)	Description of Representative Receptor (Receptor ID)	IDOT Approach Criterion dB(A)	No. of Receptors Represented	Existing (2020)		No-Build (2050)	Build (2050)			Impact (Yes/No)
				Distance to Nearest Edge of Pavement (ft)	Noise Level dB(A)	Noise Level dB(A)	Distance to Nearest Edge of Pavement (ft)	Noise Level dB(A)	Increase Over Existing	
CNE 12 (B)	Single-Family Back Yard (US52-R12)	66	8	408 ²	49	50	401 ²	51	2	No
CNE 13 (B)	Single-Family Front Yard (US52-R13)	66	41	49 ²	65	66	33 ²	66	1	Yes
CNE 14 (E)	Coffee Shop Bench (US52- R14)	71	2	318 ²	51	52	319 ²	52	1	No
CNE 15 (B)	Single-Family Front Yard (US 52-R15)	66	5	25 ⁴	62	63	25 ⁴	63	1	No
CNE 16 (B)	Single-Family Front Yard (US 52-R16)	66	1	35 ⁴	61	61	35 ⁴	62	1	No
CNE 17 (B)	Single-Family Back Yard (US52- R17)	66	3	86 ⁴	57	58	86 ⁴	59	2	No
CNE 18 (B)	Mobile Home Back Yard (US52- R18)	66	96	61 ⁴	65	66	59 ⁴	66	1	Yes
CNE 19 (B)	Mobile Home Back Yard (US52-R19)	66	39	36 ²	68	69	29 ²	70	2	Yes
CNE 20 (C)	Church Basketball Court (US52-R20)	66	1	391 ²	54	55	389 ²	55	1	No
CNE 21 (C)	Recreational Area Bench (US52- R21)	66	3	252 ²	56	57	253 ²	57	1	No
CNE 22 (B)	Single-Family Back Yard (US52- R22)	66	7	79 ²	60	61	80 ²	61	1	No
CNE 23 (B)	Single-Family Front Yard (US52- R23)	66	6	182 ²	58	59	183 ²	59	1	No

CNE (Activity Category)	Description of Representative Receptor (Receptor ID)	IDOT Approach Criterion dB(A)	No. of Receptors Represented	Existing (2020)		No-Build (2050)	Build (2050)			Impact (Yes/No)
				Distance to Nearest Edge of Pavement (ft)	Noise Level dB(A)	Noise Level dB(A)	Distance to Nearest Edge of Pavement (ft)	Noise Level dB(A)	Increase Over Existing	
CNE 24 (E)	Law Firm Patio (US52-R24)	71	1	235 ²	58	60	233 ²	59	1	No
CNE 25 (C)	Outdoor Playset (US52-R25)	66	1	171 ²	60	61	167 ²	61	1	No
CNE 26 (E)	Hotel Bench (US52-R26)	71	2	78 ⁵	60	61	76 ⁵	61	1	No
CNE 27 (E)	Bar and Grill Patio (US52- R27)	71	2	114 ²	63	64	110 ²	63	0	No
CNE 28 (C)	Cemetery Bench (US52-R28)	66	5	201 ²	58	59	214 ²	59	1	No
CNE 29 (B)	Single-Family Front Yard (US52-30)	66	4	138 ²	61	62	149 ²	62	1	No
CNE 30 (C)	Church Outdoor Facilities (US52- R30)	66	1	199 ²	57	58	199 ²	59	2	No
CNE 31 (E)	Outdoor Restaurant Seating (US52- R31)	71	1	52 ⁶	57	58	52 ⁶	59	2	No
CNE 32 (C)	Church Gazebo (US52-R32)	66	1	209 ²	58	59	207 ²	60	2	No
CNE 33 (B)	Single-Family Front Yard (US52-R33)	66	1	230 ²	58	59	230 ²	60	2	No

¹From River Road edge of pavement.

²From US 52 edge of pavement.

³From South Brookshore Drive edge of pavement.

⁴From IL 59 edge of pavement.

⁵From SE Frontage Road edge of pavement.

⁶From Houbolt Road edge of pavement.

7.0 ABATEMENT ANALYSIS

As shown on Table 6.1, potential traffic noise impacts were identified for five CNEs based on the 2050 Build scenario developed using TNM Version 2.5.

Per IDOT Noise Policy ^[4], noise abatement must be considered when traffic noise impacts are identified. In addition, any noise abatement measure must be determined to be both feasible and reasonable for implementation. Potential noise abatement measures include the following:

- Traffic management measures,
- Alteration of horizontal and vertical alignments,
- Acquisition of property rights for construction of noise barriers,
- Acquisition of undeveloped land for buffer zones,
- Noise insulation (only for Activity Category D), or
- Construction of noise barriers.

Construction of noise barriers is the most commonly used noise abatement measure. Due to the project conditions along the corridor, noise barriers are the most viable option.

Noise barriers are usually either noise walls or earth berms. Landscaped berms are the preferred abatement solution because of the relatively low cost and aesthetic nature of berms; however, available right-of-way along the US 52 corridor precludes the use of berms for noise abatement.

Noise walls placed adjacent to the roadway will attenuate traffic-related noise and are the most practical and commonly used measure to abate noise impacts. To be effective, a noise barrier must break the line of sight between the highest point of a noise source and a receiver. It also must be long enough to prevent sounds from passing around the ends, having no openings such as driveways, and be dense enough so the noise would not be transmitted through it.

7.1 Noise Abatement Criterion

IDOT policy identifies the following criteria that must be met before a noise barrier shall be recommended for implementation.

- *Feasibility.* In order to be considered acoustically feasible, a noise abatement measure must achieve the traffic noise reduction feasibility criterion of at least 5 dB(A) for at least **two impacted** receptors. Feasibility also addresses the engineering aspects of implementing a noise barrier such as considerations for safety, drainage, and utilities. If these factors cannot be accommodated in providing the minimum noise reduction, noise abatement will be deemed not feasible.
- *Reasonableness.* The following three reasonableness evaluation criteria must be met in order for noise abatement to be considered:
 1. *Noise Reduction Design Goal:* The noise abatement must achieve the noise reduction design goal of at least 8 dB(A) for at least **one benefited** receptor;
 2. *Cost Effectiveness:* The noise abatement must be cost effective (i.e., may not exceed the allowable noise abatement base cost per benefitted receptor).

The IDOT base cost per benefited receptor is \$30,000. Other factors considered to potentially adjust the allowable noise abatement base value include (Table 7.1):

- The absolute noise level of the benefited receptors in the design year build scenario before noise abatement;
- The incremental increase in noise level between the existing noise level at the benefited receptor and the predicted build noise level before noise abatement; and
- The date of development compared to the construction date of the highway.

Consideration of the three reasonableness adjustment factors results in a potential maximum allowable noise abatement cost of \$45,000 per benefited receptor. If the estimated build cost of noise abatement per benefited receptor is less than the adjusted allowable noise abatement cost per benefited receptor, then the noise abatement measure achieves the cost-effective reasonableness criterion.

Table 7.1 - Factors for Adjusting the Allowable Noise Abatement Cost per Benefited Receptor Base Value of \$30,000, Using other Reasonableness Factors

Absolute Noise Level Consideration	
Predicted Build Noise Level Before Noise Abatement	Dollars Added to Base Value Cost per Benefited Receptor
Less than 70 dB(A)	\$0
70 to 74 dB(A)	\$1,000
75 to 79 dB(A)	\$2,500
80 dB(A) or greater	\$5,000
Increase in Noise Level Consideration	
Incremental Increase in Noise Level Between the Existing Noise Level and the Predicted Build Noise Level Before Noise Abatement	Dollars Added to Base Value Cost per Benefited Receptor
Less than 5 dB(A)	\$0
5 to 9 dB(A)	\$1,000
10 to 14 dB(A)	\$2,500
15 dB(A) or greater	\$5,000
New Alignment / Construction Date Consideration	
Project is on New Alignment OR the Receptor Existed Prior to the Original Construction of the Highway	Dollars Added to Base Value Cost per Benefited Receptor
No for both	\$0
Yes for either	\$5,000

3. *Viewpoints Solicitation*: The noise abatement treatment must be deemed desired by the benefited receptors.

Viewpoints of benefited receptors must be considered for noise abatement measures that are determined to be feasible and achieve the first two reasonableness factors. The goal is to obtain responses from at least one-third (33%) of the potential number of votes for each noise abatement measure. If responses from one-third of the potential votes cast are not received after the first attempt, a second attempt shall be made. The voting result can be determined after viewpoints from at least one-third of the potential votes have been received or after two attempts have been made to obtain the responses. If after the second attempt there are still less than one-third of the potential votes received, the voting result will be determined based on the responses received. If no votes are received, the barrier will not be recommended for construction.

For noise abatement to be considered reasonable, more than 50 percent of the responses (weighted totals) must be in favor of the noise abatement measure. A response from front row benefited receptors (receptors or properties adjacent to a proposed barrier), the status of which will be reviewed by IDOT, will be counted and weighted compared to non-front row receptor responses, as shown in Table 7.2.

Table 7.2 – Votes Per Benefitted Receptor

<i>Receptor Location</i>	<i>Rental Property</i>		<i>Owner Occupied Property: Number of Votes Per Unit</i>
	<i>Owner: Number of Votes Per Unit</i>	<i>Renter: Number of Votes Per Unit</i>	
Front Row	2	2	4
Non-Front Row	1	1	2

The viewpoint solicitation process has been completed for Wall 7-9 but will be deferred until Phase II Design for Wall 18 as detailed in Section 7.3.

7.2 Abatement Alternatives

TNM 2.5 was used to perform the noise wall feasibility and reasonability analysis for impacted locations along the project corridor. Four barrier walls were assessed and analyzed for the five impacted CNEs (CNE 7, 9, 13, 18 and 19). The results are summarized in Table 7.3 and Table 7.4. Cost averaging (Table 7.5) was used to evaluate reasonableness for one of the potential barriers. The TNM output for the barrier analysis is in Exhibit E. The locations of the potential barriers are shown in Exhibit F.

Analysis for CNE 13 assumed that four receptors along US 52 will be displaced as part of the project.

7.3 Likelihood Statement

Based on the traffic noise analysis and the noise abatement evaluation conducted, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The noise barriers determined to meet the feasibility and reasonableness criteria are identified in Table 7.3.

The final reasonableness criterion, the viewpoints solicitation, for Wall 7-9 has been completed and results show as “in favor of the wall” so the noise wall will be implemented.

The viewpoints solicitation for Wall 18 will be deferred until Phase II Design. Construction of the potential noise wall (Wall 18) is complicated by the existing retaining wall located along the east side of IL 59 north of US 52. During the solicitation process the Imperial Mobile Home Community property owner requested additional detail including a better understanding of the impacts of the construction of Wall 18 to their property and their tenants. Detailed structural design in Phase II needs to be completed to determine these impacts. Once a detailed structural design concept is developed, Phase II should coordinate with the property owner to present the impacts and discuss next steps in the viewpoint solicitation process.

If it subsequently develops during final design that constraints not foreseen in the preliminary design or public input substantially change, the abatement measures may need to be modified or removed from the project plans. A final decision on the installation of abatement measure(s) will be made upon completion of the project’s final design and the public involvement process.

Table 7.3 – Barrier Assessment

Noise Wall ID	Impacted CNE(s)	Description of Receptors	Feasibility		Reasonableness				
			Is it Feasible?	# of Impacted Receptors Reduced by at Least 5 dB(A)	Criterion 1		Criterion 2		Criterion 3
					Noise Reduction Design Goal Achieved?	# Receptors Reduced by at Least 8 dB(A)	Economic Reasonableness Achieved?	Cost per Benefitted Receptor	Viewpoints of Benefitted Receptors
W7-9	7, 9	SF Residential	Yes	3	Yes	1	Yes ¹	\$37,049	In Favor
W13	13	SF Residential	No	1	N/A	N/A	N/A	N/A	N/A
W18	18, 19	Mobile Home Residential	Yes	7	Yes	4	Yes	\$23,160	TBD
W19	18, 19	Mobile Home Residential	No	1	N/A	N/A	N/A	N/A	N/A

¹Cost averaging was used to warrant reasonableness. See Table 7.5 – Cost Averaging Analysis.

Table 7.4 – Barrier Wall Analysis

Noise Wall ID	Impacted CNE(s)	Wall Height (ft)	Wall Length (ft)	Cost ¹	Benefitted Receptors	Cost per Benefitted Receptor	Adjusted Allowable Cost per Benefitted Receptor	Likely to be Implemented? ²
W7-9	7, 9	9.23 ³	669	\$185,246	5	\$37,049 ⁵	\$30,000	Yes
W18	18, 19	8 (18 ⁴)	772	\$185,280 ⁴	18	\$10,293	\$30,000	TBD ⁶

¹Noise wall cost based on \$30 per square foot construction cost.

²Likely to be implemented pending benefitted receptor viewpoint.

³This wall has a variable wall height between 4 and 12 feet and the average wall height is indicated.

⁴The total wall height, including the approximately 10 feet of existing retaining wall, is 18 feet. Per IDOT direction, the cost assumed is from the top of the existing retaining wall to the top of the proposed noise wall and the cost of the retaining wall is not included. Therefore, for cost-estimating purposes only the net increase in height (i.e., 8 feet) was used.

⁵Cost exceeds adjusted allowable cost per benefitted receptor and is not cost effective (stand alone). Wall is cost effective (cumulative) see Table 7.5.

⁶ Additional detailed structural design concept to be developed in Phase II to determine impacts to the Imperial Mobile Home Community property. Next steps in the viewpoint solicitation process will be discussed at that time.

Table 7.5 – Cost Averaging Analysis

CNE (Barrier Wall)	Total Benefited Receptors	Noise Wall Cost	Noise Wall Cost per Benefited Receptor	Adjusted Allowable Cost per Benefited Receptor	Ratio of Wall to Adjusted Allowable	Cumulative Estimated Build Cost Per Benefited Receptor	Cumulative Adjusted Allowable Cost Per Benefited Receptor	Result of Determination
W18	18	\$185,280.00	\$10,293.33	\$30,000	0.343	\$10,293.33	\$30,000	Cost Effective Stand Alone
W7-9	5	\$185,246.10	\$37,049.22	\$30,000	1.235	\$16,109.83	\$30,000	Cost Effective Cumulative

8.0 COORDINATION WITH LOCAL OFFICIALS FOR UNDEVELOPED LANDS

Noise contours were developed for undeveloped lands along the project corridor. A map depicting the noise contours will be provided to the appropriate planning/zoning officials for their use. A copy of the documentation available for local officials is included in Exhibit G.

9.0 CONSTRUCTION NOISE

Trucks, heavy machinery, and other equipment used during construction produce noise which may affect some land uses and activities during the construction period. Residents along the alignment will at some time experience perceptible construction noise from implementation of the project. To minimize or eliminate the effect of construction noise on these receptors, mitigation measures have been incorporated into the IDOT Standard Specifications for Road and Bridge Construction as Article 107.35^[6].

10.0 SUMMARY

This traffic noise analysis has been conducted to evaluate potential traffic noise impacts for the proposed improvements to US 52 from River Road to Houbolt Road in the central portion of Will County, Illinois within the Village of Shorewood and the City of Joliet. Traffic noise was evaluated at a total of 33 modeled common noise environments within the project area. Traffic noise levels were evaluated for the existing conditions and projected (2050) traffic volumes for the No-Build and Build scenarios.

Projected build 2050 noise levels approached, met, or exceeded the NAC at five representative receptor locations – US52-R7, US52-R9, US52-R13, US52-R18, and US52-R19, due to the increase in traffic volumes and proposed improvements. None of the receptors had noise level increases equal to 15 dB(A) or greater, which is considered a substantial increase in traffic noise levels. Since the receptors are impacted in the build scenario, a noise barrier abatement analysis was performed. Four barrier walls were analyzed. Two of the barrier walls (Wall 7-9, Wall 18), based on the guidelines and definitions set forth in IDOT's *Highway Traffic Noise Assessment Manual*, May 2017, were found to meet feasibility and reasonableness criteria.

- The viewpoint solicitation results regarding Wall 7-9 indicate “in favor of the wall” so the noise wall will be implemented.
- The viewpoint solicitation results for Wall 18 will be determined following the development of a detailed structural design in Phase II and subsequent coordination with the property owner.

11.0 REFERENCES

- [1] Will Connects 2040 Long Range Transportation Plan, Will County, Illinois. Adopted by the County Board in March 2017.
- [2] Shorewood Community Comprehensive Plan, Village of Shorewood. February 2007.
- [3] Procedures for Abatement of Highway Traffic and Construction Noise, 23 CFR 772. Federal Highway Administration, July 13, 2010.
- [4] Highway Traffic Noise Assessment Manual, Illinois Department of Transportation, May 2017.
- [5] Standard Specifications for Road and Bridge Construction, Illinois Department of Transportation, 2016.

EXHIBIT A
LOCATION MAP

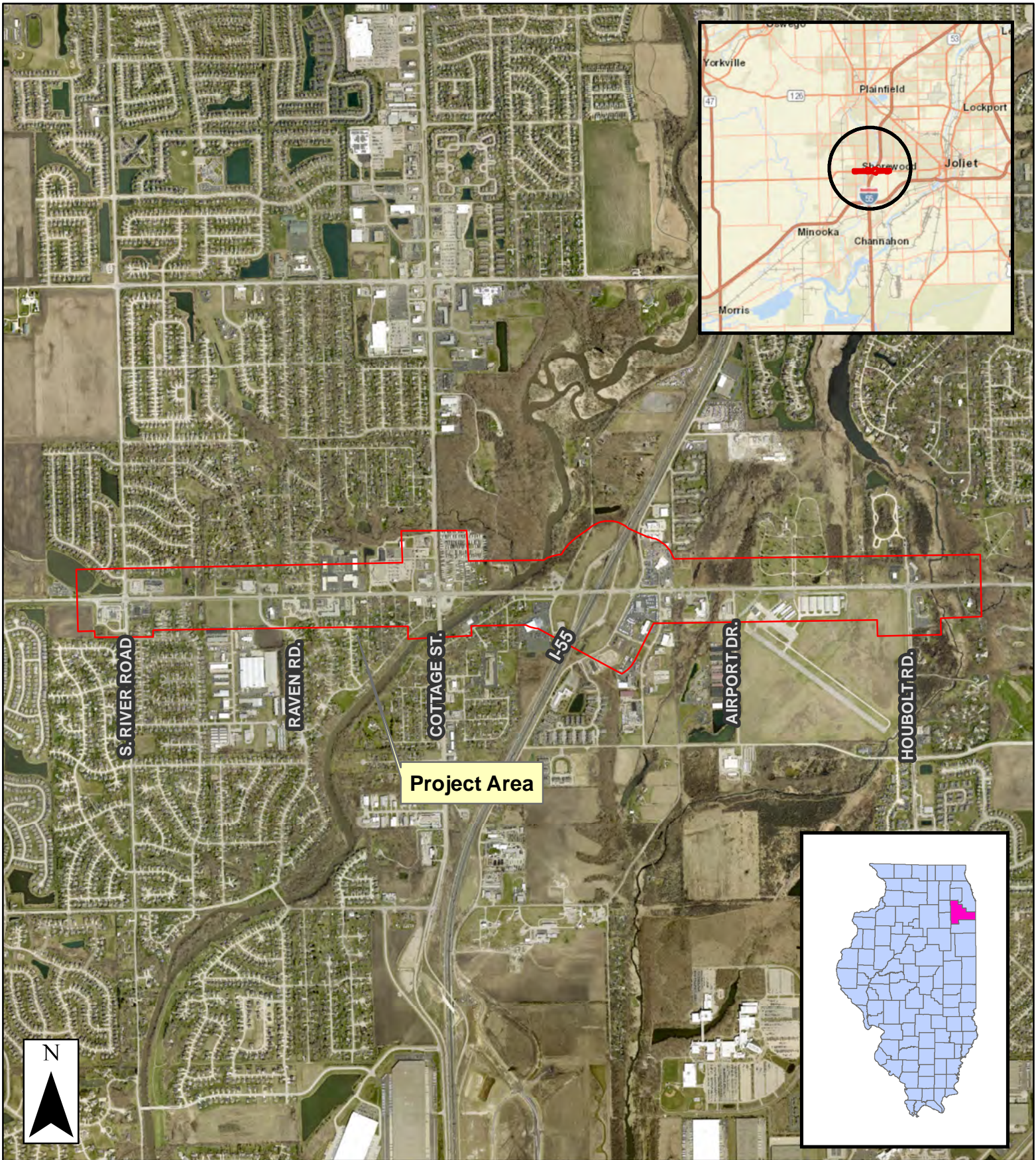


Exhibit A
Location Map
Noise Analysis
US 52 - From S. River Road
to Houbolt Road

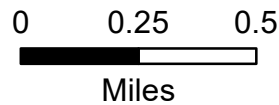
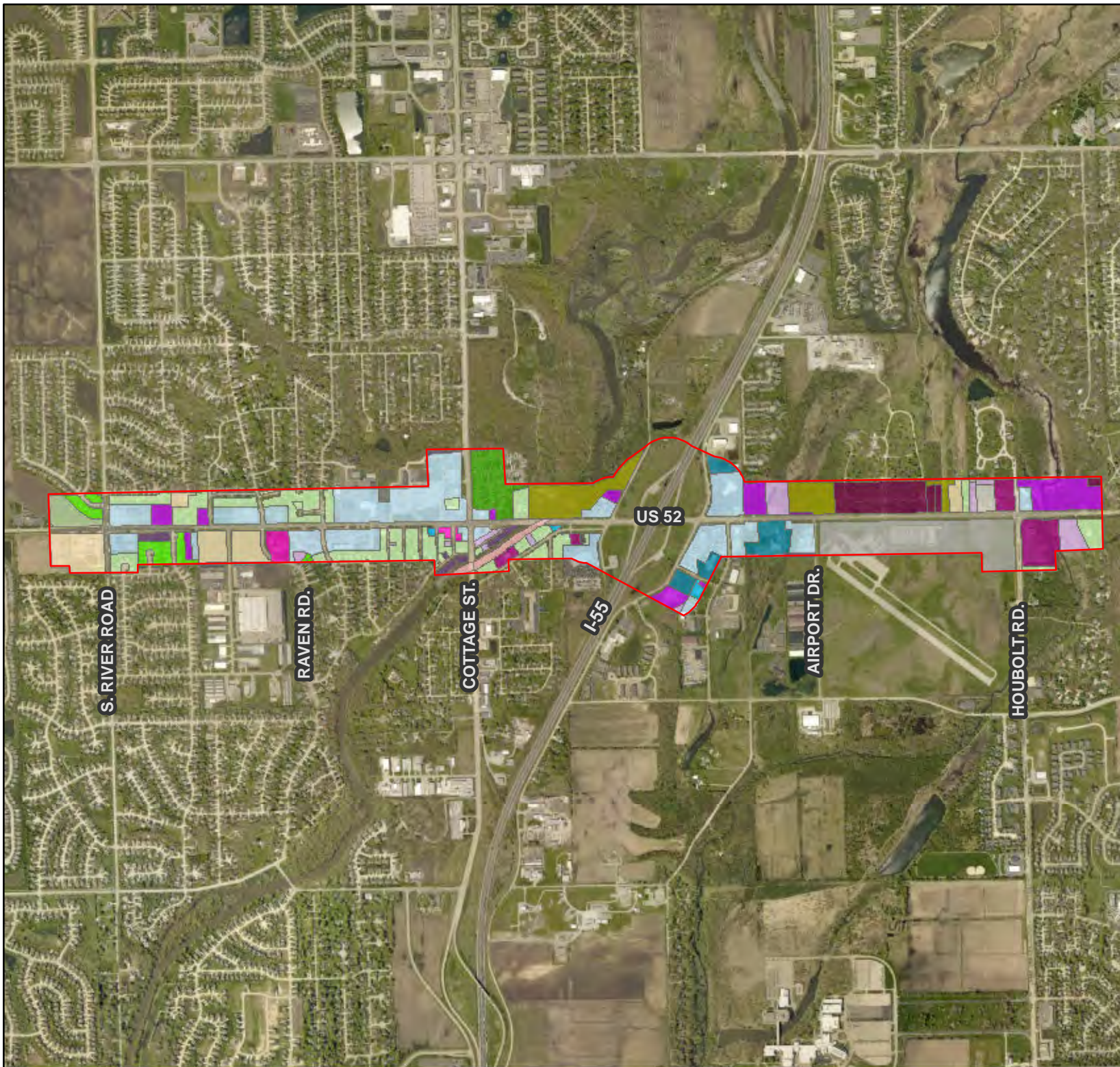


EXHIBIT B
LAND USE MAP



- 500 ft. Buffer
- LANDUSE**
- Residential - SF Detached
- Residential - SF Attached
- Residential - Mobile
- Residential - Common
- Commercial-Urban Mix
- Commercial - Office
- Commercial - Hotel
- Institutional - Medical
- Institutional - Government
- Institutional - Religious
- Institutional - Cemetery
- Industrial - General
- TCU - ROW Road
- TCU - Air
- TCU - Stormwater
- Agricultural
- Open Space - Recreational
- Open Space - Conservation
- Vacant - Residential
- Vacant - Commercial
- Vacant - Industrial
- Vacant - Other
- Non-Parcel Water

Source: CMAP Land Use Inventory, 2013

Exhibit B
US 52 - From S. River Road to Houbolt Road

Land Use

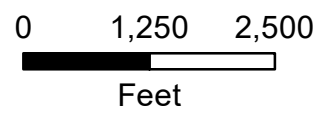
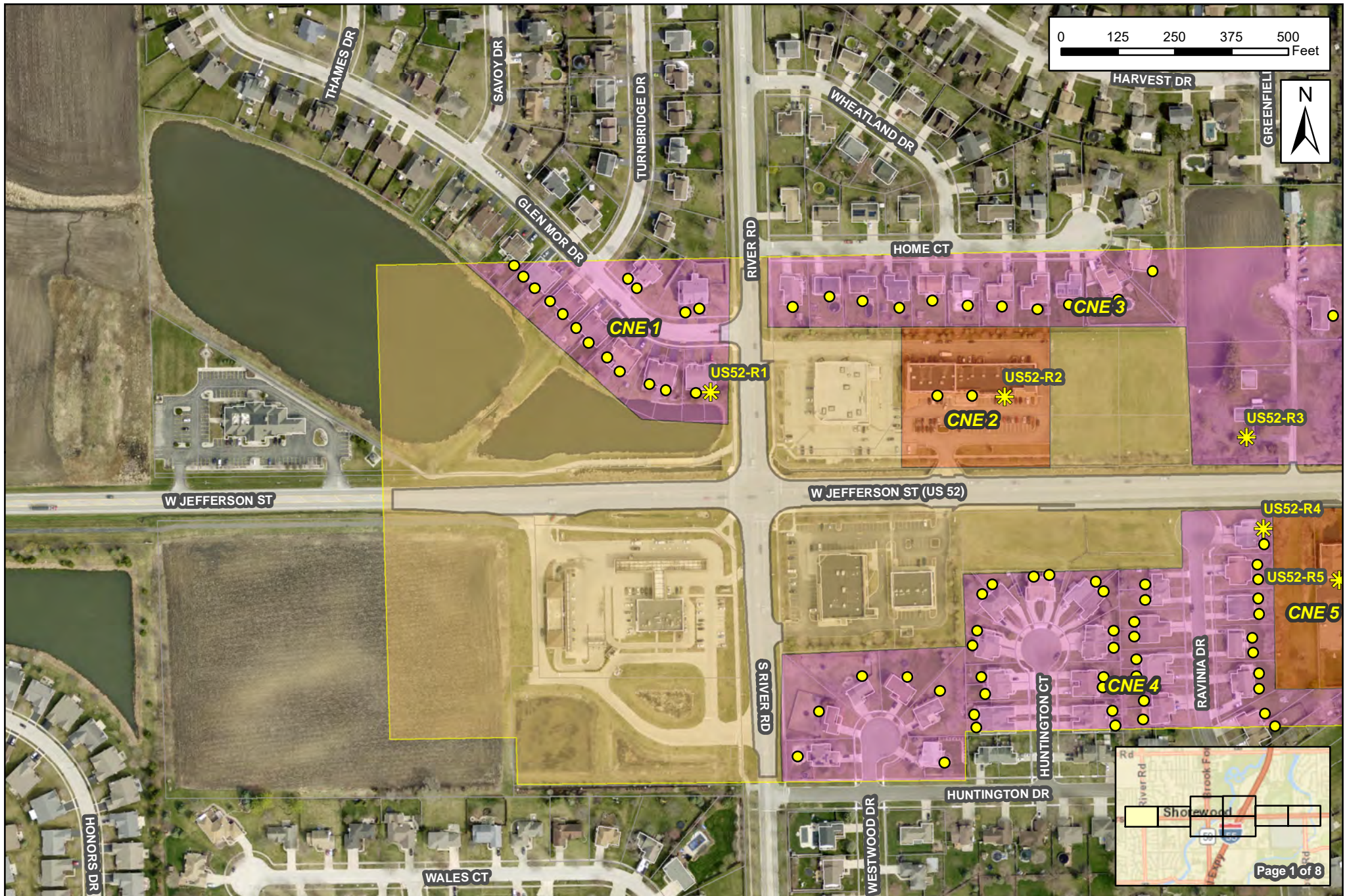
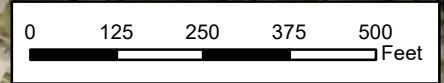


EXHIBIT C

NOISE RECEPTOR LOCATION MAP



	Receptor for Model		Activity Category B		Parcel
	Representative Receptor		Activity Category C		Building
	500 Foot Buffer		Activity Category E		Validation Point
	Proposed EOP		Activity Category F		Pedestrian Bridge

Exhibit C Receptor Location Map US 52 - From River Road to Houbolt Road



Kaskaskia
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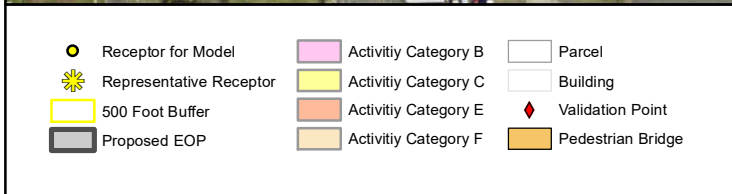
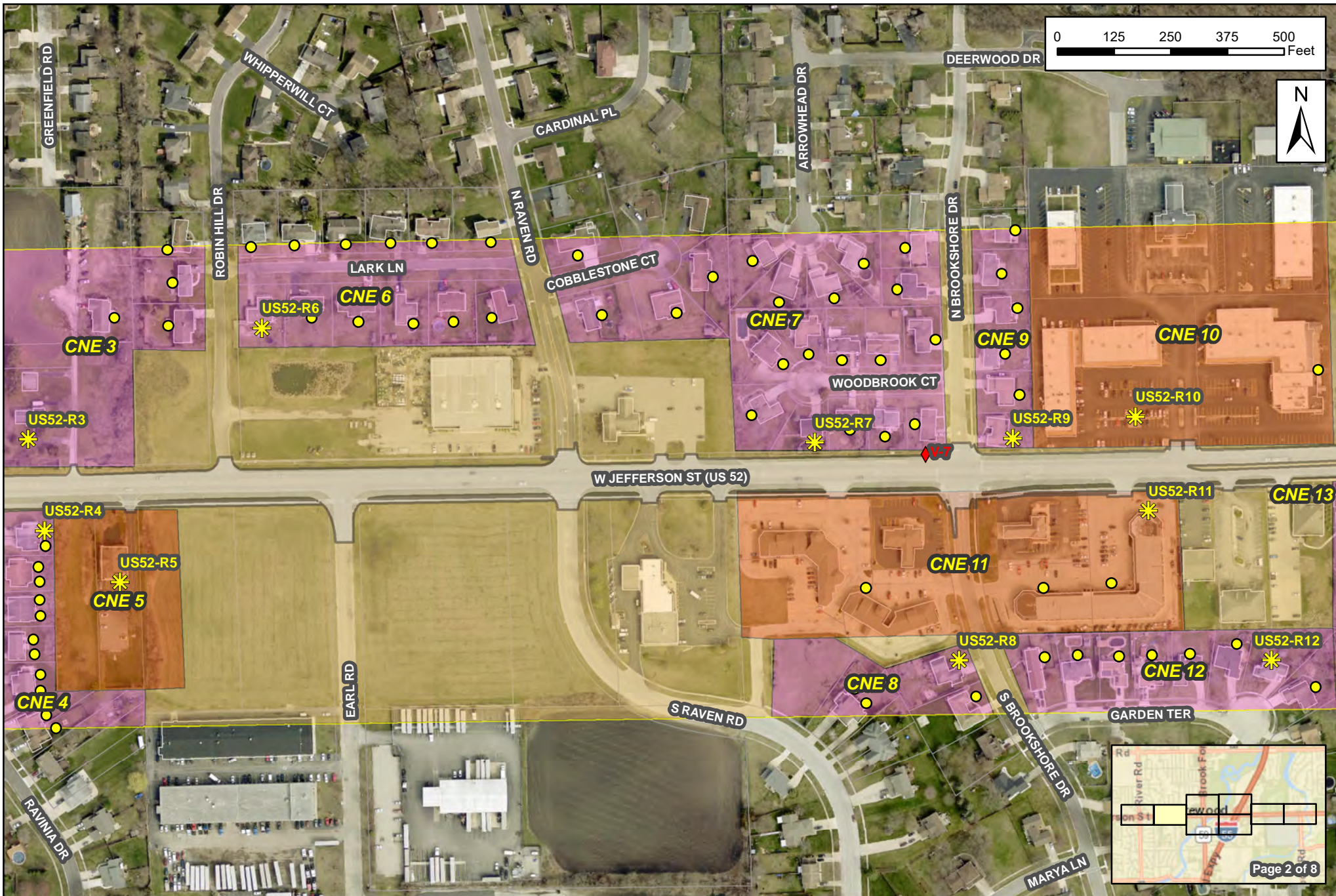
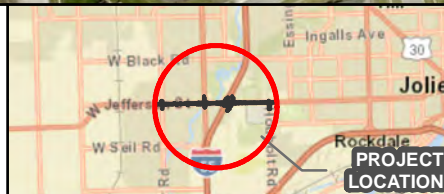
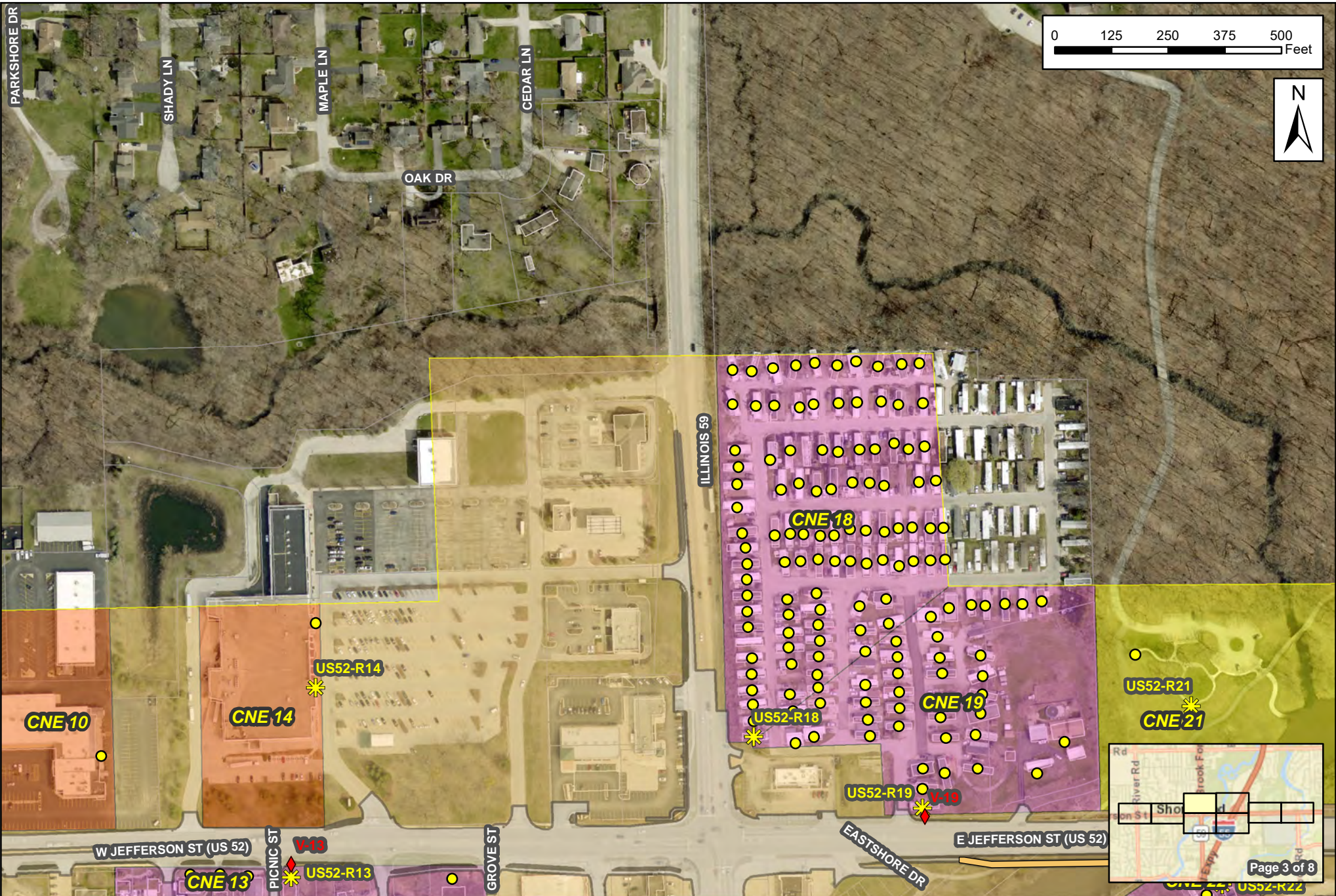


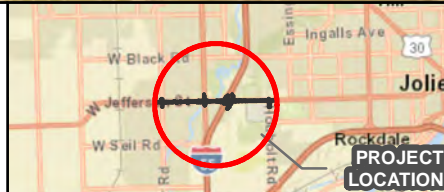
Exhibit C
Receptor Location Map
US 52 - From River Road
to Houbolt Road





- Receptor for Model
- Representative Receptor
- 500 Foot Buffer
- Proposed EOP
- Activity Category B
- Activity Category C
- Activity Category E
- Activity Category F
- Parcel
- Building
- Validation Point
- Pedestrian Bridge

Exhibit C Receptor Location Map US 52 - From River Road to Houbolt Road



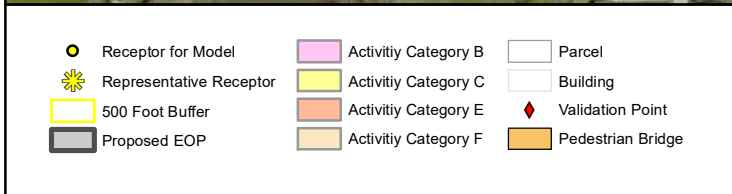
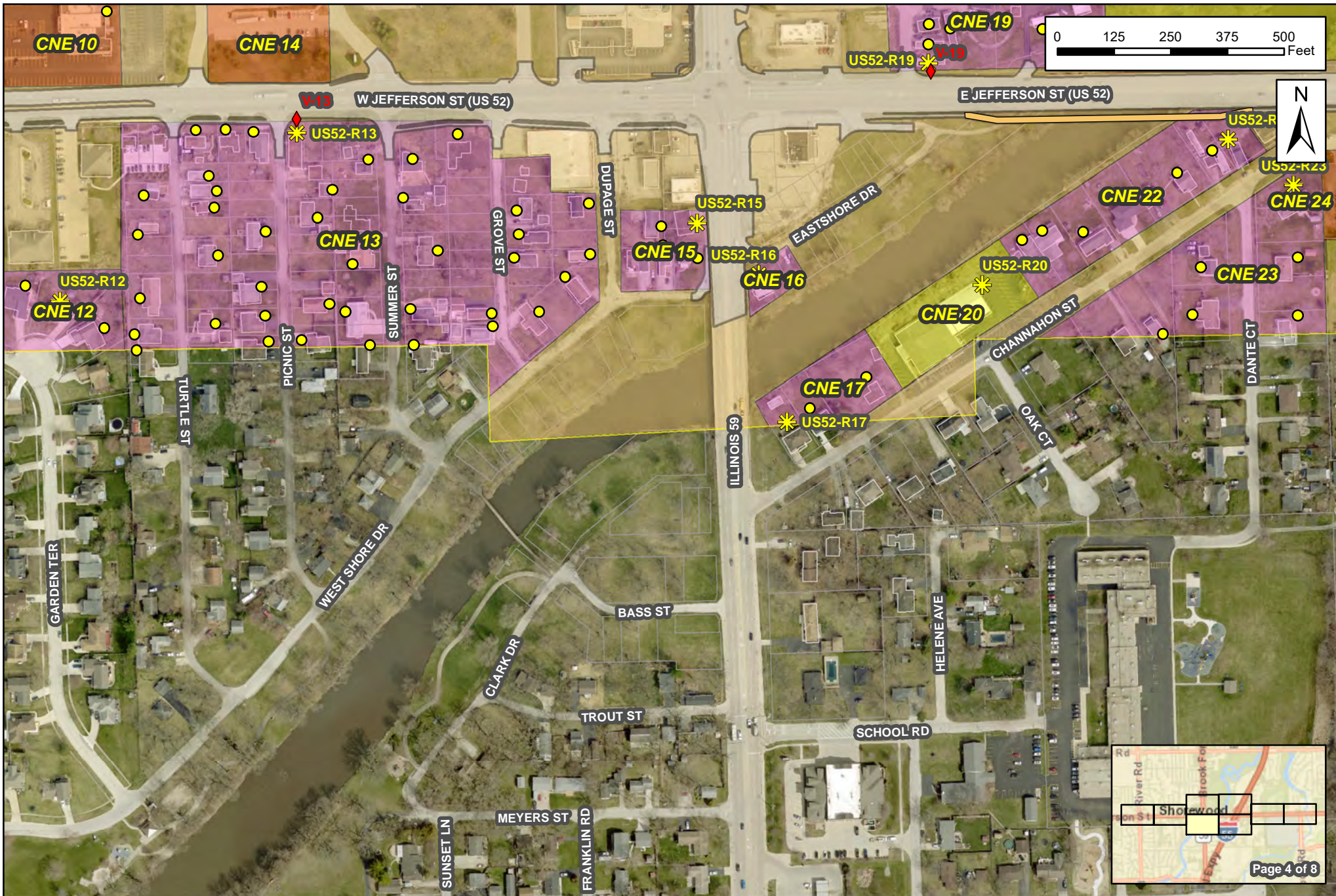
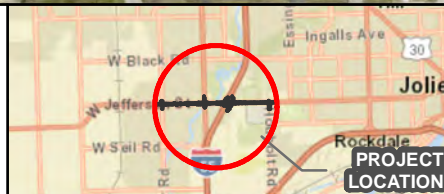
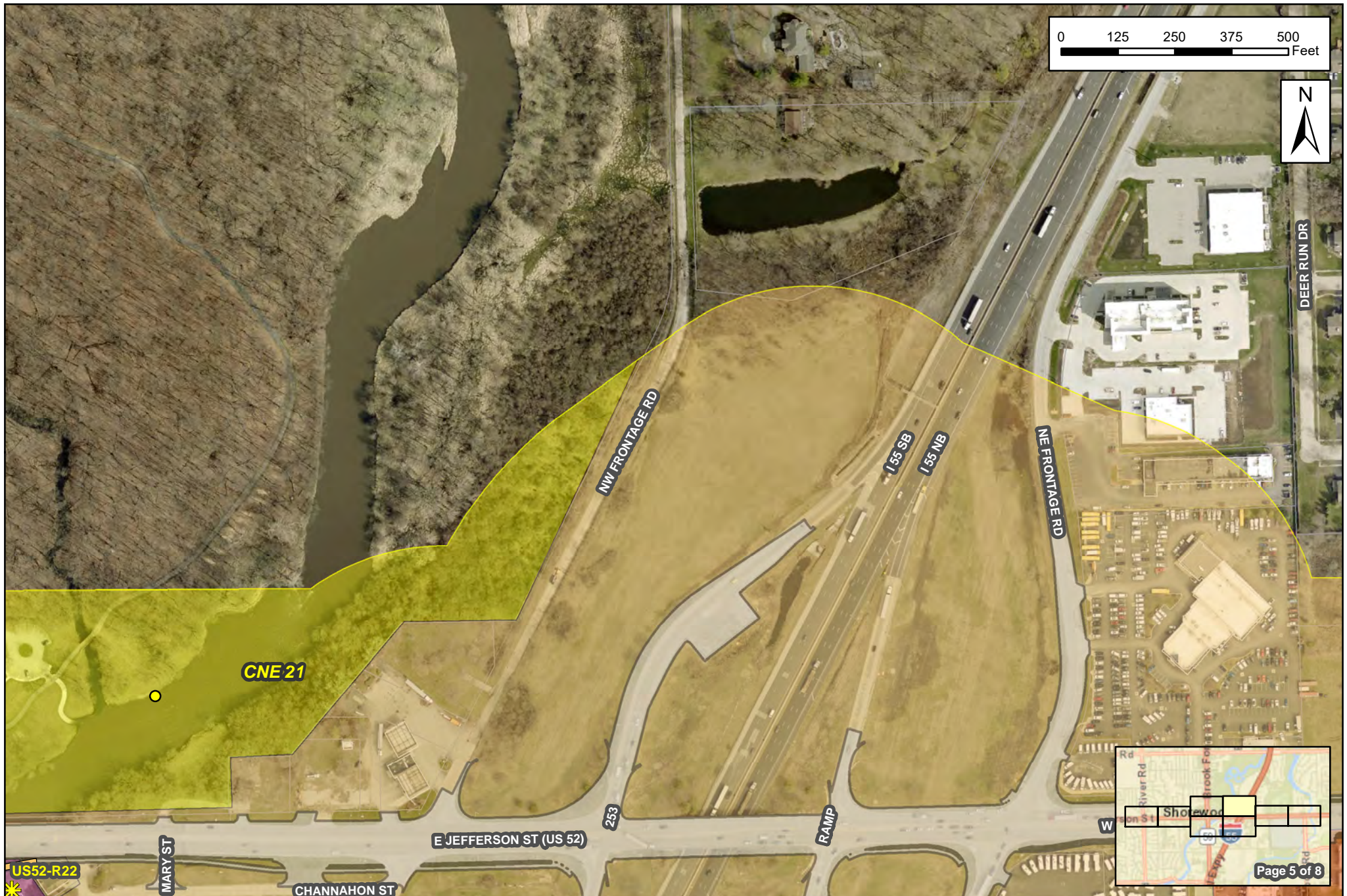
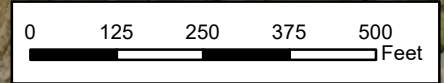


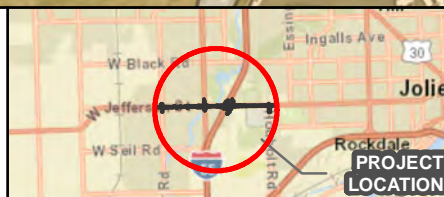
Exhibit C
Receptor Location Map
US 52 - From River Road
to Houbolt Road





Receptor for Model	Activity Category B	Parcel
Representative Receptor	Activity Category C	Building
500 Foot Buffer	Activity Category E	Validation Point
Proposed EOP	Activity Category F	Pedestrian Bridge

Exhibit C Receptor Location Map US 52 - From River Road to Houbolt Road





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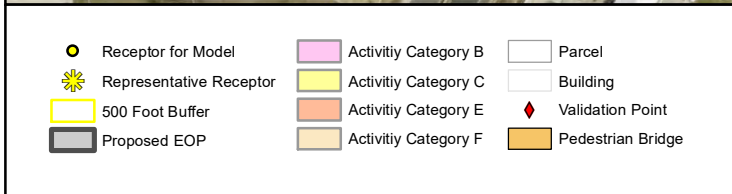
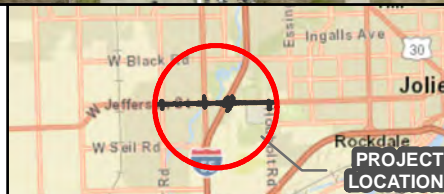
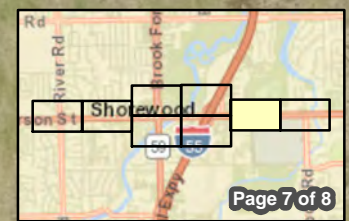
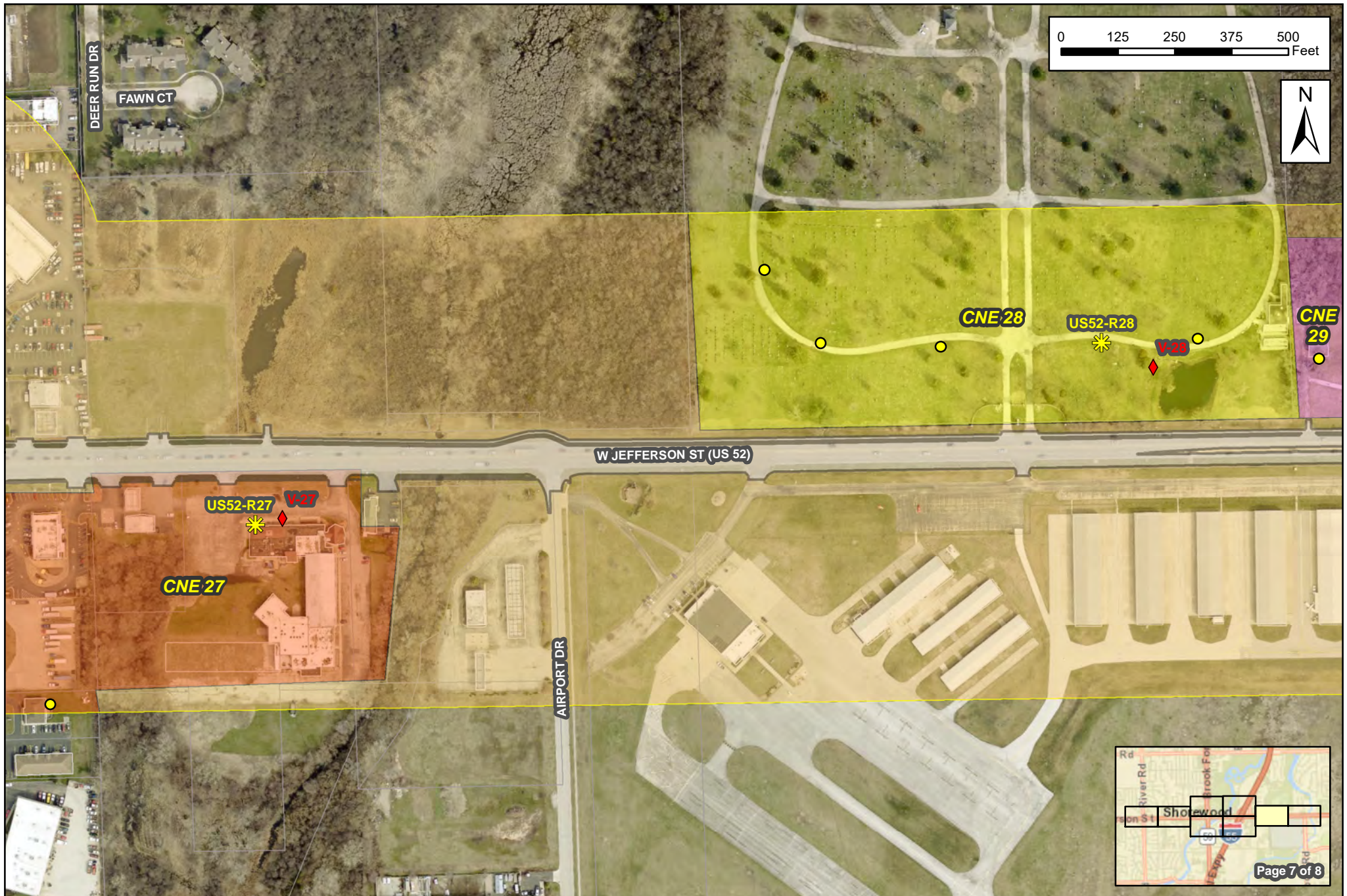
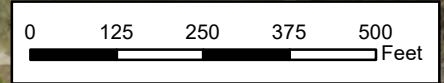


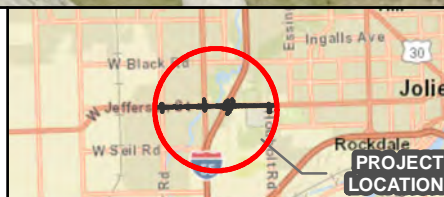
Exhibit C
Receptor Location Map
US 52 - From River Road
to Houbolt Road





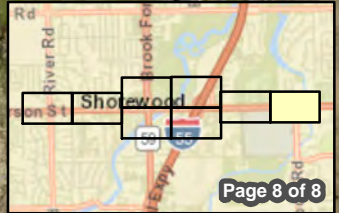
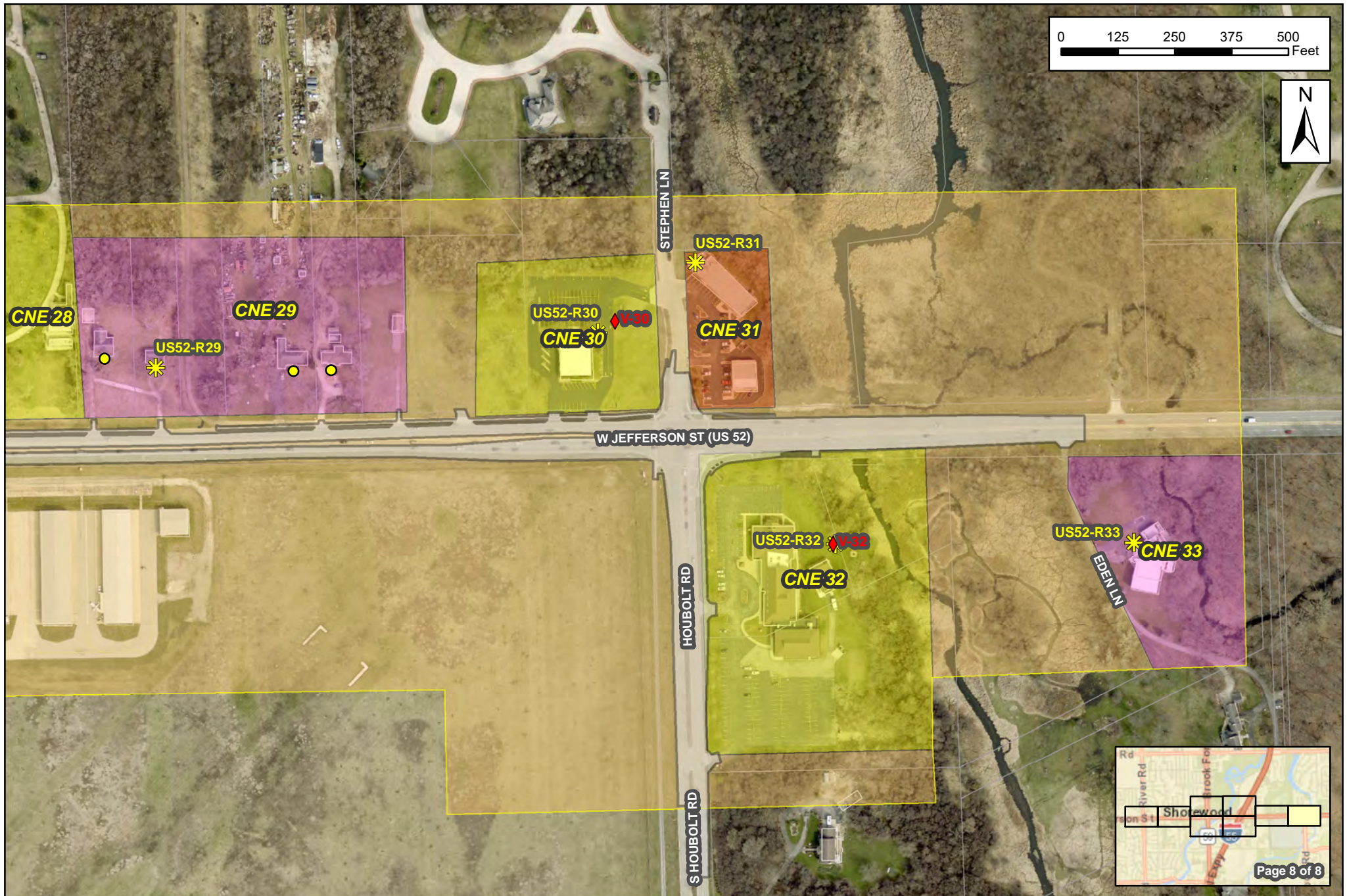
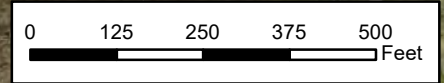
- Receptor for Model
- Representative Receptor
- 500 Foot Buffer
- Proposed EOP
- Activity Category B
- Activity Category C
- Activity Category E
- Activity Category F
- Parcel
- Building
- Validation Point
- Pedestrian Bridge

Exhibit C Receptor Location Map US 52 - From River Road to Houbolt Road



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Receptor for Model	Activity Category B	Parcel
Representative Receptor	Activity Category C	Building
500 Foot Buffer	Activity Category E	Validation Point
Proposed EOP	Activity Category F	Pedestrian Bridge

Exhibit C Receptor Location Map US 52 - From River Road to Houbolt Road



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EXHIBIT D

MODEL VALIDATION DATA AND TNM 2.5 MODEL OUTPUT

Model Validation Data

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC						26 August 2020						
HJP						TNM 2.5						
						Calculated with TNM 2.5						
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:			US 52 Reconstruction									
RUN:			Validation V-7									
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			
ATMOSPHERICS:			68 deg F, 50% RH									
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dB	dB	dB	dB	dB		dB	dB	dB	dB
V-30	372	1	56.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-28	373	1	61.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-19	374	1	68.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-7	375	1	72.4	69.5	66	-2.9	10	Snd Lvl	69.5	0.0	8	-8.0
V-27	376	1	64.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-13	377	1	70.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-32	378	1	55.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-25	379	1	63.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-26	380	1	59.1	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		9	0.0	0.0	0.0							
All Impacted		1	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC						26 August 2020						
HJP						TNM 2.5						
						Calculated with TNM 2.5						
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:			US 52 Reconstruction									
RUN:			Validation V-13									
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			
ATMOSPHERICS:			68 deg F, 50% RH									
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
V-30	372	1	56.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-28	373	1	61.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-19	374	1	68.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-7	375	1	72.4	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-27	376	1	64.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-13	377	1	70.2	69.3	66	-0.9	10	Snd Lvl	69.3	0.0	8	-8.0
V-32	378	1	55.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-25	379	1	63.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-26	380	1	59.1	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		9	0.0	0.0	0.0							
All Impacted		1	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC						26 August 2020						
HJP						TNM 2.5						
						Calculated with TNM 2.5						
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:			US 52 Reconstruction									
RUN:			Validation V-19									
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			
ATMOSPHERICS:			68 deg F, 50% RH									
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
V-30	382	1	56.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-28	383	1	61.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-19	384	1	68.2	67.6	66	-0.6	10	Snd Lvl	67.6	0.0	8	-8.0
V-7	385	1	72.4	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-27	386	1	64.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-13	387	1	70.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-32	388	1	55.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-25	389	1	63.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-26	390	1	59.1	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		9	0.0	0.0	0.0							
All Impacted		1	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC						26 August 2020						
HJP						TNM 2.5						
						Calculated with TNM 2.5						
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:			US 52 Reconstruction									
RUN:			Validation V-25									
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			
ATMOSPHERICS:			68 deg F, 50% RH									
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
V-30	372	1	56.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-28	373	1	61.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-19	374	1	68.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-7	375	1	72.4	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-27	376	1	64.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-13	377	1	70.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-32	378	1	55.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-25	379	1	63.3	60.9	66	-2.4	10	----	60.9	0.0	8	-8.0
V-26	380	1	59.1	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		9	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC						26 August 2020						
HJP						TNM 2.5						
						Calculated with TNM 2.5						
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:			US 52 Reconstruction									
RUN:			Validation V-26									
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			
ATMOSPHERICS:			68 deg F, 50% RH									
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
										Calculated	Goal	Calculated minus Goal
			dB	dB	dB	dB	dB		dB	dB	dB	dB
V-30	372	1	56.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-28	373	1	61.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-19	374	1	68.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-7	375	1	72.4	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-27	376	1	64.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-13	377	1	70.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-32	378	1	55.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-25	379	1	63.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-26	380	1	59.1	61.8	66	2.7	10	----	61.8	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		9	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC						26 August 2020						
HJP						TNM 2.5						
						Calculated with TNM 2.5						
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:			US 52 Reconstruction									
RUN:			Validation V-27									
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			
ATMOSPHERICS:			68 deg F, 50% RH									
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
										Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
V-30	372	1	56.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-28	373	1	61.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-19	374	1	68.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-7	375	1	72.4	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-27	376	1	64.3	63.3	66	-1.0	10	----	63.3	0.0	8	-8.0
V-13	377	1	70.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-32	378	1	55.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-25	379	1	63.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-26	380	1	59.1	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		9	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC						26 August 2020							
HJP						TNM 2.5							
						Calculated with TNM 2.5							
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:			US 52 Reconstruction										
RUN:			Validation V-28										
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.				
ATMOSPHERICS:			68 deg F, 50% RH										
Receiver													
Name		No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing		With Barrier				
							Calculated	Crit'n	Type Impact	Calculated LAeq1h	Noise Reduction		
								Sub'l Inc			Calculated	Goal	Calculated minus Goal
				dB	dB	dB	dB	dB		dB	dB	dB	dB
V-30		372	1	56.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-28		373	1	61.2	59.9	66	-1.3	10	----	59.9	0.0	8	-8.0
V-19		374	1	68.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-7		375	1	72.4	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-27		376	1	64.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-13		377	1	70.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-32		378	1	55.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-25		379	1	63.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-26		380	1	59.1	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units			# DUs	Noise Reduction									
				Min	Avg	Max							
				dB	dB	dB							
All Selected			9	0.0	0.0	0.0							
All Impacted			0	0.0	0.0	0.0							
All that meet NR Goal			0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC						26 August 2020						
HJP						TNM 2.5						
						Calculated with TNM 2.5						
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:			US 52 Reconstruction									
RUN:			Validation V-30									
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			
ATMOSPHERICS:			68 deg F, 50% RH									
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
										Calculated	Goal	Calculated minus Goal
			dB	dB	dB	dB	dB		dB	dB	dB	dB
V-30	382	1	56.0	55.8	66	-0.2	10	----	55.8	0.0	8	-8.0
V-28	383	1	61.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-19	384	1	68.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-7	385	1	72.4	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-27	386	1	64.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-13	387	1	70.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-32	388	1	55.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-25	389	1	63.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-26	390	1	59.1	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		9	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC						26 August 2020						
HJP						TNM 2.5						
						Calculated with TNM 2.5						
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:			US 52 Reconstruction									
RUN:			Validation V-32									
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.			
ATMOSPHERICS:			68 deg F, 50% RH									
Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
V-30	372	1	56.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-28	373	1	61.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-19	374	1	68.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-7	375	1	72.4	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-27	376	1	64.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-13	377	1	70.2	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-32	378	1	55.0	56.9	66	1.9	10	----	56.9	0.0	8	-8.0
V-25	379	1	63.3	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
V-26	380	1	59.1	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		9	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

Existing (2020), No Build Scenario (2050), Build Scenario (2050)

Exhibit D

Noise Analysis Receptor Summary Existing and Future Scenarios

Noise Level Comparison	
XX	Approaches or Exceeds Noise Abatement Criteria
XX	Substantial Increase (≥ 15 dBA Leq)

Receptor			FHWA Noise Abatement Criteria		2020	2050	Δ Existing, No Build	2050	Δ Existing, Build
ID	Representative	Dwelling Units	Activity Category	Activity Criteria Leq(h)	Existing Condition	No Build Conditions		Build Conditions	
					Leq	Leq	Leq	Leq	Leq
R1-01	*	1	B	67.0	58.5	60.1	1.6	60.3	1.8
R1-02		1	B	67.0	57.5	59.1	1.6	59.3	1.8
R1-03		1	B	67.0	56.2	57.8	1.6	58.0	1.8
R1-04		1	B	67.0	50.9	52.5	1.6	52.8	1.9
R1-05		1	B	67.0	54.0	55.6	1.6	56.0	2.0
R1-06		1	B	67.0	52.3	54.0	1.7	54.4	2.1
R1-07		1	B	67.0	51.4	53.1	1.7	53.5	2.1
R1-08		1	B	67.0	50.3	52.0	1.7	52.4	2.1
R1-09		1	B	67.0	49.3	51.0	1.7	51.4	2.1
R1-10		1	B	67.0	48.4	50.1	1.7	50.5	2.1
R1-11		1	B	67.0	48.0	49.7	1.7	50.0	2.0
R1-12		1	B	67.0	47.3	49.0	1.7	49.4	2.1
R1-13		1	B	67.0	46.7	48.4	1.7	48.8	2.1
R1-14		1	B	67.0	48.9	50.5	1.6	50.7	1.8
R1-15		1	B	67.0	49.6	51.2	1.6	51.3	1.7
R1-16		1	B	67.0	53.1	54.6	1.5	54.8	1.7
R1-17		1	B	67.0	54.4	55.9	1.5	56.1	1.7
R2-01	*	1	E	72.0	57.1	58.5	1.4	57.5	0.4
R2-02		1	E	72.0	56.9	58.4	1.5	57.4	0.5
R2-03		1	E	72.0	56.8	58.2	1.4	57.3	0.5
R3-01	*	1	B	67.0	59.7	61.4	1.7	62.7	3.0
R3-02		1	B	67.0	50.4	51.9	1.5	52.7	2.3
R3-03		1	B	67.0	50.7	52.2	1.5	53.3	2.6
R3-04		1	B	67.0	48.6	50.1	1.5	51.0	2.4
R3-05		1	B	67.0	47.3	48.8	1.5	49.6	2.3
R3-06		1	B	67.0	48.2	49.7	1.5	50.0	1.8
R3-07		1	B	67.0	49.6	51.0	1.4	51.2	1.6
R3-08		1	B	67.0	49.2	50.6	1.4	50.8	1.6
R3-09		1	B	67.0	48.4	49.8	1.4	50.1	1.7
R3-10		1	B	67.0	41.5	43.0	1.5	43.6	2.1
R3-11		1	B	67.0	45.0	46.6	1.6	47.3	2.3
R3-12		1	B	67.0	46.1	47.7	1.6	48.2	2.1
R3-13		1	B	67.0	47.9	49.4	1.5	49.6	1.7
R3-14		1	B	67.0	49.7	51.3	1.6	51.3	1.6
R3-15		1	B	67.0	50.8	52.4	1.6	52.6	1.8
R3-16		1	B	67.0	54.7	56.3	1.6	56.5	1.8
R4-01	*	1	B	67.0	60.9	62.2	1.3	63.9	3.0
R4-02		1	B	67.0	58.2	59.7	1.5	61.5	3.3
R4-03		1	B	67.0	56.0	57.5	1.5	58.8	2.8
R4-04		1	B	67.0	55.0	56.6	1.6	57.6	2.6
R4-05		1	B	67.0	54.0	55.7	1.7	56.3	2.3
R4-06		1	B	67.0	52.9	54.6	1.7	55.5	2.6

Exhibit D

Noise Analysis Receptor Summary Existing and Future Scenarios

Noise Level Comparison	
XX	Approaches or Exceeds Noise Abatement Criteria
XX	Substantial Increase (≥ 15 dBA Leq)

Receptor			FHWA Noise Abatement Criteria		2020	2050	Δ Existing, No Build	2050	Δ Existing, Build
ID	Representative	Dwelling Units	Activity Category	Activity Criteria Leq(h)	Existing Condition	No Build Conditions		Build Conditions	
					Leq	Leq	Leq	Leq	Leq
R4-07		1	B	67.0	51.5	53.2	1.7	54.5	3.0
R4-08		1	B	67.0	50.7	52.4	1.7	53.7	3.0
R4-09		1	B	67.0	49.7	51.4	1.7	52.7	3.0
R4-10		1	B	67.0	49.0	50.7	1.7	51.8	2.8
R4-11		1	B	67.0	48.0	49.6	1.6	50.6	2.6
R4-12		1	B	67.0	47.5	49.1	1.6	50.1	2.6
R4-13		1	B	67.0	55.3	57.0	1.7	57.2	1.9
R4-14		1	B	67.0	54.4	56.1	1.7	56.2	1.8
R4-15		1	B	67.0	53.0	54.8	1.8	55.2	2.2
R4-16		1	B	67.0	52.1	53.8	1.7	54.4	2.3
R4-17		1	B	67.0	50.8	52.5	1.7	53.2	2.4
R4-18		1	B	67.0	49.9	51.6	1.7	52.4	2.5
R4-19		1	B	67.0	48.9	50.6	1.7	51.2	2.3
R4-20		1	B	67.0	48.1	49.7	1.6	50.4	2.3
R4-21		1	B	67.0	47.9	49.6	1.7	50.1	2.2
R4-22		1	B	67.0	48.6	50.3	1.7	50.7	2.1
R4-23		1	B	67.0	49.5	51.3	1.8	51.7	2.2
R4-24		1	B	67.0	50.0	51.7	1.7	52.3	2.3
R4-25		1	B	67.0	51.5	53.2	1.7	53.7	2.2
R4-26		1	B	67.0	52.6	54.3	1.7	54.6	2.0
R4-27		1	B	67.0	55.3	57.0	1.7	56.8	1.5
R4-28		1	B	67.0	56.0	57.7	1.7	57.5	1.5
R4-29		1	B	67.0	57.1	58.8	1.7	58.1	1.0
R4-30		1	B	67.0	57.0	58.7	1.7	58.1	1.1
R4-31		1	B	67.0	56.5	58.3	1.8	57.5	1.0
R4-32		1	B	67.0	55.6	57.4	1.8	56.6	1.0
R4-33		1	B	67.0	52.5	54.3	1.8	54.1	1.6
R4-34		1	B	67.0	51.4	53.1	1.7	53.0	1.6
R4-35		1	B	67.0	49.7	51.4	1.7	51.6	1.9
R4-36		1	B	67.0	49.0	50.7	1.7	50.8	1.8
R4-37		1	B	67.0	48.1	49.8	1.7	49.9	1.8
R4-38		1	B	67.0	47.6	49.3	1.7	49.5	1.9
R4-39		1	B	67.0	46.5	48.1	1.6	48.6	2.1
R4-40		1	B	67.0	48.9	50.6	1.7	50.7	1.8
R4-41		1	B	67.0	49.4	51.1	1.7	51.2	1.8
R4-42		1	B	67.0	50.6	52.2	1.6	52.4	1.8
R4-43		1	B	67.0	52.0	53.5	1.5	53.6	1.6
R4-44		1	B	67.0	51.9	53.4	1.5	53.5	1.6
R5-01	*	1	E	72.0	54.8	56.4	1.6	57.6	2.8
R6-01	*	1	B	67.0	50.7	52.2	1.5	53.3	2.6
R6-02		1	B	67.0	50.0	51.4	1.4	52.6	2.6
R6-03		1	B	67.0	49.8	51.3	1.5	52.5	2.7

Exhibit D

Noise Analysis Receptor Summary Existing and Future Scenarios

Noise Level Comparison	
XX	Approaches or Exceeds Noise Abatement Criteria
XX	Substantial Increase (≥ 15 dBA Leq)

Receptor			FHWA Noise Abatement Criteria		2020	2050	Δ Existing, No Build	2050	Δ Existing, Build
ID	Representative	Dwelling Units	Activity Category	Activity Criteria Leq(h)	Existing Condition	No Build Conditions		Build Conditions	
					Leq	Leq	Leq	Leq	Leq
R6-04		1	B	67.0	49.3	50.7	1.4	51.9	2.6
R6-05		1	B	67.0	47.7	49.2	1.5	50.2	2.5
R6-06		1	B	67.0	47.8	49.3	1.5	50.4	2.6
R6-07		1	B	67.0	46.5	47.9	1.4	48.9	2.4
R6-08		1	B	67.0	46.5	48.0	1.5	49.1	2.6
R6-09		1	B	67.0	46.6	48.1	1.5	49.1	2.5
R6-10		1	B	67.0	46.8	48.3	1.5	49.2	2.4
R6-11		1	B	67.0	47.0	48.5	1.5	49.3	2.3
R6-12		1	B	67.0	47.1	48.6	1.5	49.4	2.3
R7-01	*	1	B	67.0	63.6	65.4	1.8	66.7	3.1
R7-02		1	B	67.0	58.0	59.2	1.2	59.9	1.9
R7-03		1	B	67.0	63.0	64.6	1.6	65.5	2.5
R7-04		1	B	67.0	61.4	62.9	1.5	64.0	2.6
R7-05		1	B	67.0	57.8	59.5	1.7	61.3	3.5
R7-06		1	B	67.0	52.6	54.0	1.4	54.6	2.0
R7-07		1	B	67.0	52.3	53.6	1.3	54.1	1.8
R7-08		1	B	67.0	52.8	54.1	1.3	54.3	1.5
R7-09		1	B	67.0	53.3	54.5	1.2	54.7	1.4
R7-10		1	B	67.0	57.0	57.9	0.9	58.1	1.1
R7-11		1	B	67.0	51.2	52.2	1.0	52.6	1.4
R7-12		1	B	67.0	50.5	51.4	0.9	51.7	1.2
R7-13		1	B	67.0	49.0	50.2	1.2	50.7	1.7
R7-14		1	B	67.0	49.8	51.0	1.2	51.7	1.9
R7-15		1	B	67.0	49.7	51.0	1.3	51.8	2.1
R7-16		1	B	67.0	48.0	49.4	1.4	50.1	2.1
R7-17		1	B	67.0	48.6	50.0	1.4	50.9	2.3
R7-18		1	B	67.0	50.1	51.6	1.5	52.7	2.6
R7-19		1	B	67.0	49.8	51.3	1.5	52.5	2.7
R7-20		1	B	67.0	47.3	48.7	1.4	49.6	2.3
R8-01	*	1	B	67.0	55.1	55.9	0.8	56.1	1.0
R8-02		1	B	67.0	54.7	55.5	0.8	55.6	0.9
R8-03		1	B	67.0	46.0	47.1	1.1	48.0	2.0
R8-04		1	B	67.0	45.6	46.8	1.2	47.7	2.1
R9-01	*	1	B	67.0	64.2	65.3	1.1	66.3	2.1
R9-02		1	B	67.0	57.0	58.0	1.0	58.3	1.3
R9-03		1	B	67.0	54.4	55.4	1.0	55.2	0.8
R9-04		1	B	67.0	51.5	52.5	1.0	52.6	1.1
R9-05		1	B	67.0	51.5	52.4	0.9	52.6	1.1
R9-06		1	B	67.0	49.2	50.2	1.0	50.5	1.3
R10-01	*	1	E	72.0	60.0	60.9	0.9	62.9	2.9
R10-02		1	E	72.0	55.6	56.5	0.9	57.1	1.5
R11-01	*	1	E	72.0	62.1	63.0	0.9	64.3	2.2

Exhibit D

Noise Analysis Receptor Summary Existing and Future Scenarios

Noise Level Comparison	
XX	Approaches or Exceeds Noise Abatement Criteria
XX	Substantial Increase (≥ 15 dBA Leq)

Receptor			FHWA Noise Abatement Criteria		2020	2050	Δ Existing, No Build	2050	Δ Existing, Build
ID	Representative	Dwelling Units	Activity Category	Activity Criteria $L_{eq}(h)$	Existing Condition	No Build Conditions		Build Conditions	
					L_{eq}	L_{eq}	L_{eq}	L_{eq}	L_{eq}
R11-02		1	E	72.0	53.4	54.5	1.1	54.6	1.2
R11-03		1	E	72.0	54.6	55.8	1.2	55.7	1.1
R11-04		1	E	72.0	53.7	55.2	1.5	55.2	1.5
R12-01	*	1	B	67.0	49.2	50.2	1.0	50.9	1.7
R12-02		1	B	67.0	49.3	50.2	0.9	51.0	1.7
R12-03		1	B	67.0	47.4	48.4	1.0	49.0	1.6
R12-04		1	B	67.0	48.0	49.0	1.0	50.0	2.0
R12-05		1	B	67.0	47.6	48.6	1.0	49.0	1.4
R12-06		1	B	67.0	47.1	48.1	1.0	48.5	1.4
R12-07		1	B	67.0	48.3	49.3	1.0	49.6	1.3
R12-08		1	B	67.0	51.2	52.1	0.9	52.3	1.1
R13-01	*	1	B	67.0	64.9	65.8	0.9	66.4	1.5
R13-02		1	B	67.0	55.5	56.4	0.9	57.6	2.1
R13-03		1	B	67.0	53.4	54.3	0.9	55.7	2.3
R13-04		1	B	67.0	50.5	51.4	0.9	52.4	1.9
R13-05		1	B	67.0	48.8	49.8	1.0	50.8	2.0
R13-06		1	B	67.0	48.2	49.2	1.0	50.2	2.0
R13-07		1	B	67.0	49.7	50.7	1.0	51.6	1.9
R13-08		1	B	67.0	52.4	53.3	0.9	53.9	1.5
R13-09		1	B	67.0	55.0	56.0	1.0	56.4	1.4
R13-10		1	B	67.0	56.5	57.5	1.0	58.2	1.7
R13-11		1	B	67.0	58.0	59.0	1.0	60.3	2.3
R13-12		1	B	67.0	67.1	68.1	1.0	67.9	0.8
R13-13		1	B	67.0	66.9	67.9	1.0	67.8	0.9
R13-14		1	B	67.0	65.9	66.8	0.9	67.2	1.3
R13-15		1	B	67.0	53.6	54.5	0.9	54.8	1.2
R13-16		1	B	67.0	51.0	52.0	1.0	52.4	1.4
R13-17		1	B	67.0	50.2	51.2	1.0	51.8	1.6
R13-18		1	B	67.0	49.5	50.4	0.9	51.0	1.5
R13-19		1	B	67.0	49.7	50.6	0.9	51.2	1.5
R13-20		1	B	67.0	50.8	51.7	0.9	52.2	1.4
R13-21		1	B	67.0	54.4	55.3	0.9	55.6	1.2
R13-22		1	B	67.0	56.1	57.0	0.9	57.4	1.3
R13-23		1	B	67.0	58.7	59.7	1.0	59.9	1.2
R13-24		1	B	67.0	52.4	53.3	0.9	53.8	1.4
R13-25		1	B	67.0	50.7	51.7	1.0	52.3	1.6
R13-26		1	B	67.0	49.8	50.7	0.9	51.4	1.6
R13-27		1	B	67.0	50.0	50.9	0.9	52.1	2.1
R13-28		1	B	67.0	51.0	52.0	1.0	52.9	1.9
R13-29		1	B	67.0	52.8	53.7	0.9	54.9	2.1
R13-30		1	B	67.0	55.8	56.8	1.0	57.4	1.6
R13-31		1	B	67.0	59.2	60.2	1.0	61.2	2.0

Exhibit D

Noise Analysis Receptor Summary Existing and Future Scenarios

Noise Level Comparison	
XX	Approaches or Exceeds Noise Abatement Criteria
XX	Substantial Increase (≥ 15 dBA Leq)

Receptor			FHWA Noise Abatement Criteria		2020	2050	Δ Existing, No Build	2050	Δ Existing, Build
					Existing Condition	No Build Conditions		Build Conditions	
ID	Representative	Dwelling Units	Activity Category	Activity Criteria Leq(h)	Leq	Leq	Leq	Leq	Leq
R13-32		1	B	67.0	63.2	64.1	0.9	65.0	1.8
R13-33		1	B	67.0	51.3	52.3	1.0	53.0	1.7
R13-34		1	B	67.0	51.1	52.1	1.0	52.8	1.7
R13-35		1	B	67.0	52.4	53.3	0.9	53.7	1.3
R13-36		1	B	67.0	52.8	53.8	1.0	54.4	1.6
R13-37		1	B	67.0	53.4	54.4	1.0	55.2	1.8
R13-38		1	B	67.0	54.3	55.2	0.9	56.3	2.0
R13-39		1	B	67.0	55.4	56.3	0.9	56.5	1.1
R13-40		1	B	67.0	54.9	55.9	1.0	56.1	1.2
R13-41		1	B	67.0	53.8	54.7	0.9	55.2	1.4
R14-01	*	1	E	72.0	50.8	51.7	0.9	52.0	1.2
R14-02		1	E	72.0	42.8	43.8	1.0	44.2	1.4
R15-01	*	1	B	67.0	61.5	62.5	1.0	63.3	1.8
R15-02		1	B	67.0	58.1	59.0	0.9	59.1	1.0
R15-03		1	B	67.0	56.8	57.8	1.0	57.8	1.0
R15-04		1	B	67.0	57.9	58.8	0.9	58.9	1.0
R15-05		1	B	67.0	60.2	61.2	1.0	61.7	1.5
R16-01	*	1	B	67.0	60.5	61.4	0.9	61.8	1.3
R17-01	*	1	B	67.0	56.8	57.7	0.9	58.8	2.0
R17-02		1	B	67.0	56.1	57.0	0.9	57.7	1.6
R17-03		1	B	67.0	53.9	54.8	0.9	55.6	1.7
R18-01	*	1	B	67.0	65.3	66.2	0.9	66.3	1.0
R18-02		1	B	67.0	64.5	65.4	0.9	65.5	1.0
R18-03		1	B	67.0	65.1	66.0	0.9	66.2	1.1
R18-04		1	B	67.0	65.4	66.3	0.9	66.5	1.1
R18-05		1	B	67.0	65.4	66.3	0.9	66.5	1.1
R18-06		1	B	67.0	65.0	65.9	0.9	66.1	1.1
R18-07		1	B	67.0	65.4	66.3	0.9	66.5	1.1
R18-08		1	B	67.0	65.3	66.2	0.9	66.5	1.2
R18-09		1	B	67.0	64.5	65.4	0.9	65.9	1.4
R18-10		1	B	67.0	63.8	64.7	0.9	65.3	1.5
R18-11		1	B	67.0	63.0	63.8	0.8	64.5	1.5
R18-12		1	B	67.0	62.9	63.8	0.9	64.6	1.7
R18-13		1	B	67.0	63.2	64.1	0.9	65.0	1.8
R18-14		1	B	67.0	64.1	65.0	0.9	65.9	1.8
R18-15		1	B	67.0	62.6	63.5	0.9	64.1	1.5
R18-16		1	B	67.0	61.5	62.4	0.9	63.0	1.5
R18-17		1	B	67.0	61.5	62.4	0.9	62.9	1.4
R18-18		1	B	67.0	61.2	62.0	0.8	62.5	1.3
R18-19		1	B	67.0	63.0	63.9	0.9	64.3	1.3
R18-20		1	B	67.0	59.3	60.2	0.9	60.7	1.4
R18-21		1	B	67.0	56.7	57.6	0.9	58.1	1.4

Exhibit D

Noise Analysis Receptor Summary Existing and Future Scenarios

Noise Level Comparison	
XX	Approaches or Exceeds Noise Abatement Criteria
XX	Substantial Increase (≥ 15 dBA Leq)

Receptor			FHWA Noise Abatement Criteria		2020	2050	Δ Existing, No Build	2050	Δ Existing, Build
ID	Representative	Dwelling Units	Activity Category	Activity Criteria $L_{eq}(h)$	Existing Condition	No Build Conditions		Build Conditions	
					L_{eq}	L_{eq}	L_{eq}	L_{eq}	L_{eq}
R18-22		1	B	67.0	54.5	55.4	0.9	55.9	1.4
R18-23		1	B	67.0	53.3	54.2	0.9	54.7	1.4
R18-24		1	B	67.0	52.4	53.3	0.9	53.8	1.4
R18-25		1	B	67.0	51.7	52.6	0.9	53.2	1.5
R18-26		1	B	67.0	51.2	52.1	0.9	52.8	1.6
R18-27		1	B	67.0	50.7	51.7	1.0	52.3	1.6
R18-28		1	B	67.0	50.4	51.4	1.0	52.0	1.6
R18-29		1	B	67.0	51.0	51.9	0.9	52.6	1.6
R18-30		1	B	67.0	51.4	52.3	0.9	53.0	1.6
R18-31		1	B	67.0	51.7	52.6	0.9	53.2	1.5
R18-32		1	B	67.0	52.4	53.3	0.9	53.8	1.4
R18-33		1	B	67.0	52.9	53.8	0.9	54.4	1.5
R18-34		1	B	67.0	54.0	54.9	0.9	55.4	1.4
R18-35		1	B	67.0	54.8	55.7	0.9	56.2	1.4
R18-36		1	B	67.0	56.6	57.5	0.9	58.0	1.4
R18-37		1	B	67.0	58.2	59.1	0.9	59.6	1.4
R18-38		1	B	67.0	57.3	58.1	0.8	58.7	1.4
R18-39		1	B	67.0	55.8	56.7	0.9	57.3	1.5
R18-40		1	B	67.0	54.2	55.1	0.9	55.7	1.5
R18-41		1	B	67.0	53.7	54.6	0.9	55.1	1.4
R18-42		1	B	67.0	53.0	53.9	0.9	54.4	1.4
R18-43		1	B	67.0	52.6	53.5	0.9	54.0	1.4
R18-44		1	B	67.0	52.1	53.0	0.9	53.6	1.5
R18-45		1	B	67.0	51.9	52.8	0.9	53.4	1.5
R18-46		1	B	67.0	51.6	52.5	0.9	53.2	1.6
R18-47		1	B	67.0	52.0	52.9	0.9	53.5	1.5
R18-48		1	B	67.0	52.2	53.1	0.9	53.7	1.5
R18-49		1	B	67.0	52.9	53.8	0.9	54.3	1.4
R18-50		1	B	67.0	53.2	54.1	0.9	54.7	1.5
R18-51		1	B	67.0	53.7	54.6	0.9	55.1	1.4
R18-52		1	B	67.0	54.5	55.4	0.9	55.9	1.4
R18-53		1	B	67.0	55.1	55.9	0.8	56.5	1.4
R18-54		1	B	67.0	55.8	56.7	0.9	57.2	1.4
R18-55		1	B	67.0	57.0	57.9	0.9	58.4	1.4
R18-56		1	B	67.0	58.4	59.3	0.9	59.8	1.4
R18-57		1	B	67.0	57.2	58.1	0.9	58.6	1.4
R18-58		1	B	67.0	56.4	57.3	0.9	57.8	1.4
R18-59		1	B	67.0	55.7	56.6	0.9	57.0	1.3
R18-60		1	B	67.0	55.1	56.0	0.9	56.5	1.4
R18-61		1	B	67.0	54.5	55.4	0.9	55.8	1.3
R18-62		1	B	67.0	54.1	55.0	0.9	55.4	1.3
R18-63		1	B	67.0	53.6	54.5	0.9	55.0	1.4

Exhibit D

Noise Analysis Receptor Summary Existing and Future Scenarios

Noise Level Comparison	
XX	Approaches or Exceeds Noise Abatement Criteria
XX	Substantial Increase (≥ 15 dBA Leq)

Receptor			FHWA Noise Abatement Criteria		2020	2050	Δ Existing, No Build	2050	Δ Existing, Build
ID	Representative	Dwelling Units	Activity Category	Activity Criteria $L_{eq}(h)$	Existing Condition	No Build Conditions		Build Conditions	
					L_{eq}	L_{eq}	L_{eq}	L_{eq}	L_{eq}
R18-64		1	B	67.0	53.3	54.2	0.9	54.7	1.4
R18-65		1	B	67.0	53.0	53.9	0.9	54.5	1.5
R18-66		1	B	67.0	52.8	53.7	0.9	54.3	1.5
R18-67		1	B	67.0	52.7	53.6	0.9	54.2	1.5
R18-68		1	B	67.0	53.2	54.1	0.9	54.6	1.4
R18-69		1	B	67.0	53.4	54.3	0.9	54.8	1.4
R18-70		1	B	67.0	53.6	54.5	0.9	54.9	1.3
R18-71		1	B	67.0	53.8	54.7	0.9	55.1	1.3
R18-72		1	B	67.0	54.1	55.0	0.9	55.4	1.3
R18-73		1	B	67.0	54.5	55.4	0.9	55.8	1.3
R18-74		1	B	67.0	55.0	55.9	0.9	56.3	1.3
R18-75		1	B	67.0	55.5	56.4	0.9	56.8	1.3
R18-76		1	B	67.0	56.1	57.0	0.9	57.4	1.3
R18-77		1	B	67.0	57.0	57.9	0.9	58.3	1.3
R18-78		1	B	67.0	58.1	59.0	0.9	59.4	1.3
R18-79		1	B	67.0	58.7	59.6	0.9	59.9	1.2
R18-80		1	B	67.0	58.9	59.8	0.9	60.0	1.1
R18-81		1	B	67.0	59.2	60.1	0.9	60.3	1.1
R18-82		1	B	67.0	59.5	60.4	0.9	60.5	1.0
R18-83		1	B	67.0	59.5	60.4	0.9	60.5	1.0
R18-84		1	B	67.0	60.1	61.0	0.9	60.9	0.8
R18-85		1	B	67.0	58.4	59.3	0.9	59.1	0.7
R18-86		1	B	67.0	58.2	59.1	0.9	59.0	0.8
R18-87		1	B	67.0	57.9	58.8	0.9	58.7	0.8
R18-88		1	B	67.0	57.6	58.5	0.9	58.6	1.0
R18-89		1	B	67.0	57.4	58.3	0.9	58.4	1.0
R18-90		1	B	67.0	57.0	57.9	0.9	58.1	1.1
R18-91		1	B	67.0	56.8	57.7	0.9	58.0	1.2
R18-92		1	B	67.0	55.5	56.4	0.9	56.6	1.1
R18-93		1	B	67.0	55.9	56.8	0.9	56.9	1.0
R18-94		1	B	67.0	56.2	57.1	0.9	57.1	0.9
R18-95		1	B	67.0	55.0	56.0	1.0	56.1	1.1
R18-96		1	B	67.0	54.7	55.6	0.9	55.9	1.2
R19-01	*	1	B	67.0	68.2	69.1	0.9	69.6	1.4
R19-02		1	B	67.0	64.3	65.1	0.8	64.9	0.6
R19-03		1	B	67.0	61.8	62.7	0.9	62.1	0.3
R19-04		1	B	67.0	62.1	63.0	0.9	62.3	0.2
R19-05		1	B	67.0	61.2	62.1	0.9	61.6	0.4
R19-06		1	B	67.0	60.4	61.2	0.8	60.8	0.4
R19-07		1	B	67.0	57.9	58.8	0.9	58.5	0.6
R19-08		1	B	67.0	58.3	59.2	0.9	58.6	0.3
R19-09		1	B	67.0	57.3	58.2	0.9	57.8	0.5

Exhibit D

Noise Analysis Receptor Summary Existing and Future Scenarios

Noise Level Comparison	
XX	Approaches or Exceeds Noise Abatement Criteria
XX	Substantial Increase (≥ 15 dBA Leq)

Receptor			FHWA Noise Abatement Criteria		2020	2050	Δ Existing, No Build	2050	Δ Existing, Build
ID	Representative	Dwelling Units	Activity Category	Activity Criteria $L_{eq}(h)$	Existing Condition	No Build Conditions		Build Conditions	
					L_{eq}	L_{eq}	L_{eq}	L_{eq}	L_{eq}
R19-10		1	B	67.0	56.4	57.3	0.9	57.0	0.6
R19-11		1	B	67.0	55.8	56.7	0.9	56.5	0.7
R19-12		1	B	67.0	55.3	56.2	0.9	56.2	0.9
R19-13		1	B	67.0	53.5	54.4	0.9	54.9	1.4
R19-14		1	B	67.0	53.6	54.5	0.9	54.9	1.3
R19-15		1	B	67.0	53.6	54.5	0.9	54.9	1.3
R19-16		1	B	67.0	53.8	54.7	0.9	55.1	1.3
R19-17		1	B	67.0	53.9	54.9	1.0	55.2	1.3
R19-18		1	B	67.0	54.2	55.1	0.9	55.4	1.2
R19-19		1	B	67.0	54.5	55.4	0.9	55.6	1.1
R19-20		1	B	67.0	54.9	55.8	0.9	55.9	1.0
R19-21		1	B	67.0	55.5	56.4	0.9	56.4	0.9
R19-22		1	B	67.0	56.1	57.0	0.9	56.9	0.8
R19-23		1	B	67.0	56.9	57.8	0.9	57.5	0.6
R19-24		1	B	67.0	57.6	58.5	0.9	58.2	0.6
R19-25		1	B	67.0	58.9	59.8	0.9	59.2	0.3
R19-26		1	B	67.0	58.4	59.3	0.9	58.9	0.5
R19-27		1	B	67.0	57.5	58.4	0.9	58.1	0.6
R19-28		1	B	67.0	56.9	57.8	0.9	57.5	0.6
R19-29		1	B	67.0	56.3	57.2	0.9	57.1	0.8
R19-30		1	B	67.0	55.7	56.6	0.9	56.6	0.9
R19-31		1	B	67.0	55.4	56.3	0.9	56.3	0.9
R19-32		1	B	67.0	57.0	57.9	0.9	57.7	0.7
R19-33		1	B	67.0	57.6	58.5	0.9	58.2	0.6
R19-34		1	B	67.0	58.2	59.1	0.9	58.8	0.6
R19-35		1	B	67.0	59.2	60.1	0.9	59.6	0.4
R19-36		1	B	67.0	58.5	59.4	0.9	59.1	0.6
R19-37		1	B	67.0	59.6	60.5	0.9	60.1	0.5
R19-38		1	B	67.0	60.4	61.3	0.9	60.8	0.4
R19-39		1	B	67.0	60.2	61.1	0.9	60.8	0.6
R20-01	*	1	C	67.0	54.0	55.0	1.0	55.3	1.3
R21-01	*	1	C	67.0	55.9	56.8	0.9	57.4	1.5
R21-02		1	C	67.0	54.5	55.4	0.9	55.6	1.1
R21-03		1	C	67.0	55.5	56.4	0.9	57.0	1.5
R22-01	*	1	B	67.0	60.4	61.3	0.9	61.0	0.6
R22-02		1	B	67.0	59.6	60.6	1.0	60.1	0.5
R22-03		1	B	67.0	58.2	59.1	0.9	58.8	0.6
R22-04		1	B	67.0	56.3	57.2	0.9	57.1	0.8
R22-05		1	B	67.0	55.3	56.2	0.9	56.4	1.1
R22-06		1	B	67.0	54.1	55.1	1.0	55.3	1.2
R22-07		1	B	67.0	54.1	55.1	1.0	55.4	1.3
R23-01	*	1	B	67.0	58.1	59.0	0.9	59.2	1.1

Exhibit D

Noise Analysis Receptor Summary Existing and Future Scenarios

Noise Level Comparison	
XX	Approaches or Exceeds Noise Abatement Criteria
XX	Substantial Increase (≥ 15 dBA Leq)

Receptor			FHWA Noise Abatement Criteria		2020	2050	Δ Existing, No Build	2050	Δ Existing, Build
ID	Representative	Dwelling Units	Activity Category	Activity Criteria Leq(h)	Existing Condition	No Build Conditions		Build Conditions	
					Leq	Leq	Leq	Leq	Leq
R23-02		1	B	67.0	55.5	56.4	0.9	56.6	1.1
R23-03		1	B	67.0	53.4	54.4	1.0	54.7	1.3
R23-04		1	B	67.0	54.5	55.4	0.9	55.8	1.3
R23-05		1	B	67.0	53.3	54.2	0.9	54.6	1.3
R23-06		1	B	67.0	52.8	53.7	0.9	54.1	1.3
R24-01	*	1	E	72.0	57.8	58.8	1.0	59.4	1.6
R25-01	*	1	C	67.0	59.8	60.8	1.0	61.4	1.6
R26-01	*	1	E	72.0	60.1	61.0	0.9	61.4	1.3
R26-02		1	E	72.0	54.3	55.2	0.9	55.8	1.5
R27-01	*	1	E	72.0	62.9	63.9	1.0	63.4	0.5
R27-02		1	E	72.0	54.5	55.3	0.8	55.8	1.3
R28-01	*	1	C	67.0	58.4	59.4	1.0	59.3	0.9
R28-02		1	C	67.0	53.7	54.7	1.0	55.0	1.3
R28-03		1	C	67.0	58.3	59.2	0.9	58.8	0.5
R28-04		1	C	67.0	58.7	59.7	1.0	59.5	0.8
R28-05		1	C	67.0	58.4	59.3	0.9	58.8	0.4
R29-01	*	1	B	67.0	61.2	62.2	1.0	61.5	0.3
R29-02		1	B	67.0	60.2	61.2	1.0	60.4	0.2
R29-03		1	B	67.0	62.0	63.0	1.0	62.6	0.6
R29-04		1	B	67.0	62.1	63.0	0.9	62.8	0.7
R30-01	*	1	C	67.0	56.8	57.8	1.0	58.6	1.8
R31-01	*	1	E	72.0	57.4	58.1	0.7	58.8	1.4
R32-01	*	1	C	67.0	57.6	59.1	1.5	60.0	2.4
R33-01	*	1	B	67.0	57.5	59.1	1.6	60.3	2.8

EXHIBIT E

NOISE BARRIER ANALYSIS AND TNM 2.5 MODEL OUTPUT

RESULTS: SOUND LEVELS

US 52 Reconstruction

R9-05	123	1	0.0	52.5	66	52.5	10	----	51.8	0.7	8	-7.3
R9-06	124	1	0.0	50.5	66	50.5	10	----	49.7	0.8	8	-7.2
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		26	0.5	2.3	9.6							
All Impacted		2	5.5	7.5	9.6							
All that meet NR Goal		1	9.6	9.6	9.6							

RESULTS: SOUND LEVELS

US 52 Reconstruction

Kaskaskia Engineering Group, LLC HJP										19 February 2024 TNM 2.5 Calculated with TNM 2.5			
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:		US 52 Reconstruction											
RUN:		Existing_Linework											
BARRIER DESIGN:		Wall_CNE13_v01											
ATMOSPHERICS:		68 deg F, 50% RH											
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.													
Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h	Increase over existing			Type	With Barrier				
				Calculated	Crit'n	Calculated	Crit'n	Impact	Calculated LAeq1h	Noise Reduction			
							Sub'l Inc			Calculated	Goal	Calculated minus Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
R13-01	139	1	0.0	66.1	66	66.1	10	Snd Lvl	57.4	8.7	8	0.7	
R13-02	140	1	0.0	57.3	66	57.3	10	----	56.6	0.7	8	-7.3	
R13-03	141	1	0.0	55.3	66	55.3	10	----	54.6	0.7	8	-7.3	
R13-04	142	1	0.0	52.0	66	52.0	10	----	51.3	0.7	8	-7.3	
R13-05	143	1	0.0	50.5	66	50.5	10	----	49.8	0.7	8	-7.3	
R13-06	144	1	0.0	50.0	66	50.0	10	----	49.3	0.7	8	-7.3	
R13-07	145	1	0.0	51.1	66	51.1	10	----	50.2	0.9	8	-7.1	
R13-08	146	1	0.0	53.4	66	53.4	10	----	52.3	1.1	8	-6.9	
R13-09	147	1	0.0	55.9	66	55.9	10	----	54.3	1.6	8	-6.4	
R13-10	148	1	0.0	57.4	66	57.4	10	----	55.6	1.8	8	-6.2	
R13-11	149	1	0.0	59.6	66	59.6	10	----	57.2	2.4	8	-5.6	
R13-12	150	1	0.0	68.2	66	68.2	10	Snd Lvl	61.2	7.0	8	-1.0	
R13-13	151	1	0.0	67.7	66	67.7	10	Snd Lvl	67.1	0.6	8	-7.4	
R13-14	152	1	0.0	67.0	66	67.0	10	Snd Lvl	66.7	0.3	8	-7.7	
R13-15	153	1	0.0	54.1	66	54.1	10	----	52.6	1.5	8	-6.5	
R13-16	154	1	0.0	52.0	66	52.0	10	----	50.7	1.3	8	-6.7	
R13-17	155	1	0.0	51.4	66	51.4	10	----	50.3	1.1	8	-6.9	
R13-18	156	1	0.0	50.7	66	50.7	10	----	49.6	1.1	8	-6.9	
R13-19	157	1	0.0	50.8	66	50.8	10	----	49.7	1.1	8	-6.9	
R13-20	158	1	0.0	51.8	66	51.8	10	----	50.4	1.4	8	-6.6	
R13-21	159	1	0.0	54.9	66	54.9	10	----	52.7	2.2	8	-5.8	
R13-22	160	1	0.0	56.5	66	56.5	10	----	53.5	3.0	8	-5.0	
R13-23	161	1	0.0	58.6	66	58.6	10	----	54.7	3.9	8	-4.1	
R13-24	162	1	0.0	53.4	66	53.4	10	----	51.4	2.0	8	-6.0	

RESULTS: SOUND LEVELS

US 52 Reconstruction

R13-25	163	1	0.0	51.9	66	51.9	10	----	50.5	1.4	8	-6.6
R13-26	164	1	0.0	51.0	66	51.0	10	----	49.9	1.1	8	-6.9
R13-27	165	1	0.0	51.5	66	51.5	10	----	50.3	1.2	8	-6.8
R13-28	166	1	0.0	52.2	66	52.2	10	----	50.8	1.4	8	-6.6
R13-29	167	1	0.0	54.0	66	54.0	10	----	52.2	1.8	8	-6.2
R13-30	168	1	0.0	56.4	66	56.4	10	----	53.6	2.8	8	-5.2
R13-31	169	1	0.0	59.6	66	59.6	10	----	55.6	4.0	8	-4.0
R13-32	170	1	0.0	63.0	66	63.0	10	----	57.0	6.0	8	-2.0
R13-33	171	1	0.0	52.8	66	52.8	10	----	51.7	1.1	8	-6.9
R13-34	172	1	0.0	52.6	66	52.6	10	----	51.6	1.0	8	-7.0
R13-35	173	1	0.0	53.6	66	53.6	10	----	53.0	0.6	8	-7.4
R13-36	174	1	0.0	54.3	66	54.3	10	----	53.0	1.3	8	-6.7
R13-37	175	1	0.0	55.2	66	55.2	10	----	53.5	1.7	8	-6.3
R13-38	176	1	0.0	56.1	66	56.1	10	----	54.2	1.9	8	-6.1
R13-39	177	1	0.0	56.6	66	56.6	10	----	56.0	0.6	8	-7.4
R13-40	178	1	0.0	56.1	66	56.1	10	----	55.6	0.5	8	-7.5
R13-41	179	1	0.0	55.2	66	55.2	10	----	54.5	0.7	8	-7.3
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		41	0.3	1.8	8.7							
All Impacted		4	0.3	4.1	8.7							
All that meet NR Goal		1	8.7	8.7	8.7							

RESULTS: SOUND LEVELS

US 52 Reconstruction

R18-25	215	1	0.0	54.9	66	54.9	10	----	51.7	3.2	8	-4.8
R18-26	216	1	0.0	54.3	66	54.3	10	----	51.4	2.9	8	-5.1
R18-27	217	1	0.0	53.6	66	53.6	10	----	51.1	2.5	8	-5.5
R18-28	218	1	0.0	53.2	66	53.2	10	----	50.9	2.3	8	-5.7
R18-29	219	1	0.0	53.9	66	53.9	10	----	51.3	2.6	8	-5.4
R18-30	220	1	0.0	54.5	66	54.5	10	----	51.5	3.0	8	-5.0
R18-31	221	1	0.0	54.9	66	54.9	10	----	51.6	3.3	8	-4.7
R18-32	222	1	0.0	55.8	66	55.8	10	----	52.0	3.8	8	-4.2
R18-33	223	1	0.0	56.5	66	56.5	10	----	52.3	4.2	8	-3.8
R18-34	224	1	0.0	57.8	66	57.8	10	----	53.1	4.7	8	-3.3
R18-35	225	1	0.0	58.9	66	58.9	10	----	53.6	5.3	8	-2.7
R18-36	226	1	0.0	61.5	66	61.5	10	----	55.4	6.1	8	-1.9
R18-37	227	1	0.0	62.7	66	62.7	10	----	56.7	7.0	8	-1.0
R18-38	228	1	0.0	63.4	66	63.4	10	----	54.1	9.3	8	1.3
R18-39	229	1	0.0	60.7	66	60.7	10	----	53.5	7.2	8	-0.8
R18-40	230	1	0.0	58.1	66	58.1	10	----	52.8	5.3	8	-2.7
R18-41	231	1	0.0	57.3	66	57.3	10	----	52.5	4.8	8	-3.2
R18-42	232	1	0.0	56.4	66	56.4	10	----	52.3	4.1	8	-3.9
R18-43	233	1	0.0	55.9	66	55.9	10	----	52.1	3.8	8	-4.2
R18-44	234	1	0.0	55.2	66	55.2	10	----	51.9	3.3	8	-4.7
R18-45	235	1	0.0	54.9	66	54.9	10	----	51.9	3.0	8	-5.0
R18-46	236	1	0.0	54.4	66	54.4	10	----	51.8	2.6	8	-5.4
R18-47	237	1	0.0	54.5	66	54.5	10	----	52.3	2.3	8	-5.7
R18-48	238	1	0.0	55.1	66	55.1	10	----	52.3	2.8	8	-5.2
R18-49	239	1	0.0	55.0	66	55.0	10	----	52.5	3.5	8	-4.5
R18-50	240	1	0.0	56.5	66	56.5	10	----	52.6	3.9	8	-4.1
R18-51	241	1	0.0	57.2	66	57.2	10	----	52.7	4.5	8	-3.5
R18-52	242	1	0.0	58.2	66	58.2	10	----	53.0	5.2	8	-2.8
R18-53	243	1	0.0	59.1	66	59.1	10	----	53.2	5.9	8	-2.1
R18-54	244	1	0.0	60.4	66	60.4	10	----	53.4	7.0	8	-1.0
R18-55	245	1	0.0	62.5	66	62.5	10	----	53.9	8.6	8	0.6
R18-56	246	1	0.0	64.0	66	64.0	10	----	54.9	9.1	8	1.1
R18-57	247	1	0.0	62.3	66	62.3	10	----	54.4	7.9	8	-0.1
R18-58	248	1	0.0	60.8	66	60.8	10	----	54.1	6.7	8	-1.3
R18-59	249	1	0.0	59.6	66	59.6	10	----	53.9	5.7	8	-2.3
R18-60	250	1	0.0	58.7	66	58.7	10	----	53.7	5.0	8	-3.0
R18-61	251	1	0.0	57.8	66	57.8	10	----	53.4	4.4	8	-3.6
R18-62	252	1	0.0	57.3	66	57.3	10	----	53.4	3.9	8	-4.1
R18-63	253	1	0.0	56.6	66	56.6	10	----	53.2	3.4	8	-4.6
R18-64	254	1	0.0	56.2	66	56.2	10	----	53.1	3.1	8	-4.9
R18-65	255	1	0.0	55.8	66	55.8	10	----	53.1	2.7	8	-5.3

This is a location with an existing retaining wall, therefore the "No Barrier" and "Noise Reduction" output columns are not applicable.

Refer to Exhibit D for Build, No Barrier conditions and the Noise Barrier Analysis portion of Exhibit E for noise reduction metrics.

RESULTS: SOUND LEVELS

US 52 Reconstruction

R18-66	256	1	0.0	55.4	66	55.4	10	----	53.1	2.3	8	-5.7
R18-67	257	1	0.0	55.2	66	55.2	10	----	53.1	2.1	8	-5.9
R18-68	258	1	0.0	55.4	66	55.4	10	----	53.6	1.8	8	-6.2
R18-69	259	1	0.0	55.8	66	55.8	10	----	53.6	2.2	8	-5.8
R18-70	260	1	0.0	56.1	66	56.1	10	----	53.6	2.5	8	-5.5
R18-71	261	1	0.0	56.6	66	56.6	10	----	53.7	2.9	8	-5.1
R18-72	262	1	0.0	57.0	66	57.0	10	----	53.6	3.4	8	-4.6
R18-73	263	1	0.0	57.6	66	57.6	10	----	53.8	3.8	8	-4.2
R18-74	264	1	0.0	58.2	66	58.2	10	----	54.0	4.2	8	-3.8
R18-75	265	1	0.0	59.0	66	59.0	10	----	54.2	4.8	8	-3.2
R18-76	266	1	0.0	60.0	66	60.0	10	----	54.4	5.6	8	-2.4
R18-77	267	1	0.0	61.4	66	61.4	10	----	54.6	6.8	8	-1.2
R18-78	268	1	0.0	61.1	66	63.1	10	----	55.1	8.0	8	0.0
R18-79	269	1	0.0	63.1	66	63.1	10	----	56.0	7.1	8	-0.9
R18-80	270	1	0.0	63.3	66	63.3	10	----	56.3	7.0	8	-1.0
R18-81	271	1	0.0	63.4	66	63.4	10	----	56.8	6.6	8	-1.4
R18-82	272	1	0.0	63.6	66	63.6	10	----	57.3	6.3	8	-1.7
R18-83	273	1	0.0	63.4	66	63.4	10	----	57.8	5.6	8	-2.4
R18-84	274	1	0.0	63.5	66	63.5	10	----	58.8	4.7	8	-3.3
R18-85	275	1	0.0	61.0	66	61.0	10	----	57.4	3.6	8	-4.4
R18-86	276	1	0.0	61.0	66	61.0	10	----	57.1	3.9	8	-4.1
R18-87	277	1	0.0	61.1	66	61.1	10	----	56.6	4.5	8	-3.5
R18-88	278	1	0.0	60.9	66	60.9	10	----	56.3	4.6	8	-3.4
R18-89	279	1	0.0	60.8	66	60.8	10	----	55.9	4.9	8	-3.1
R18-90	280	1	0.0	60.5	66	60.5	10	----	55.5	5.0	8	-3.0
R18-91	281	1	0.0	60.5	66	60.5	10	----	55.1	5.4	8	-2.6
R18-92	282	1	0.0	58.3	66	58.3	10	----	54.7	3.6	8	-4.4
R18-93	283	1	0.0	58.5	66	58.5	10	----	55.3	3.2	8	-4.8
R18-94	284	1	0.0	58.5	66	58.5	10	----	55.7	2.8	8	-5.2
R18-95	285	1	0.0	57.4	66	57.4	10	----	54.7	2.7	8	-5.3
R18-96	286	1	0.0	57.3	66	57.3	10	----	54.4	2.9	8	-5.1
R19-01	287	1	0.0	69.5	66	69.5	10	Snd Lvl	69.5	0.0	8	-8.0
R19-02	288	1	0.0	64.8	66	64.8	10	----	64.7	0.1	8	-7.9
R19-03	289	1	0.0	62.0	66	62.0	10	----	61.8	0.2	8	-7.8
R19-04	290	1	0.0	62.3	66	62.3	10	----	62.1	0.2	8	-7.8
R19-05	291	1	0.0	61.1	66	61.1	10	----	61.0	0.1	8	-7.9
R19-06	292	1	0.0	60.5	66	60.5	10	----	60.3	0.2	8	-7.8
R19-07	293	1	0.0	58.6	66	58.6	10	----	58.4	0.2	8	-7.8
R19-08	294	1	0.0	58.5	66	58.5	10	----	58.1	0.4	8	-7.6
R19-09	295	1	0.0	57.7	66	57.7	10	----	57.1	0.6	8	-7.4
R19-10	296	1	0.0	57.0	8	57.0	10	----	56.4	0.6	8	-7.4

This is a location with an existing retaining wall, therefore the "No Barrier" and "Noise Reduction" output columns are not applicable.

Refer to Exhibit D for Build, No Barrier conditions and the Noise Barrier Analysis portion of Exhibit E for noise reduction metrics.

RESULTS: SOUND LEVELS

US 52 Reconstruction

R19-11	297	1	0.0	56.6	66	56.6	10	----	55.8	0.8	8	-7.2
R19-12	298	1	0.0	56.4	66	56.4	10	----	55.5	0.9	8	-7.1
R19-13	299	1	0.0	55.0	66	55.0	10	----	54.4	0.6	8	-7.4
R19-14	300	1	0.0	55.1	66	55.1	10	----	54.3	0.8	8	-7.2
R19-15	301	1	0.0	55.2	66	55.2	10	----	54.3	0.9	8	-7.1
R19-16	302	1	0.0	55.5	66	55.5	10	----	54.3	1.2	8	-6.8
R19-17	303	1	0.0	55.4	66	55.4	10	----	54.4	1.2	8	-6.8
R19-18	304	1	0.0	56.1	66	56.1	10	----	54.5	1.6	8	-6.4
R19-19	305	1	0.0	56.2	66	56.4	10	----	54.6	1.8	8	-6.2
R19-20	306	1	0.0	56.5	66	56.5	10	----	55.0	1.5	8	-6.5
R19-21	307	1	0.0	57.0	66	57.0	10	----	55.7	1.3	8	-6.7
R19-22	308	1	0.0	57.3	66	57.3	10	----	56.2	1.1	8	-6.9
R19-23	309	1	0.0	57.7	66	57.7	10	----	56.7	1.0	8	-7.0
R19-24	310	1	0.0	58.3	66	58.3	10	----	57.6	0.7	8	-7.3
R19-25	311	1	0.0	59.2	66	59.2	10	----	58.7	0.5	8	-7.5
R19-26	312	1	0.0	59.3	66	59.3	10	----	58.3	1.0	8	-7.0
R19-27	313	1	0.0	58.6	66	58.6	10	----	57.3	1.3	8	-6.7
R19-28	314	1	0.0	58.2	66	58.2	10	----	56.7	1.5	8	-6.5
R19-29	315	1	0.0	58.0	66	58.0	10	----	56.2	1.8	8	-6.2
R19-30	316	1	0.0	57.6	66	57.6	10	----	55.6	2.0	8	-6.0
R19-31	317	1	0.0	57.4	66	57.4	10	----	55.1	2.3	8	-5.7
R19-32	318	1	0.0	58.9	66	58.9	10	----	56.7	2.2	8	-5.8
R19-33	319	1	0.0	59.2	66	59.2	10	----	57.3	1.9	8	-6.1
R19-34	320	1	0.0	59.5	66	59.5	10	----	58.1	1.4	8	-6.6
R19-35	321	1	0.0	60.1	66	60.1	10	----	59.0	1.1	8	-6.9
R19-36	322	1	0.0	61.0	66	61.0	10	----	57.9	3.1	8	-4.9
R19-37	323	1	0.0	61.5	66	61.5	10	----	59.4	2.1	8	-5.9
R19-38	324	1	0.0	62.5	66	62.5	10	----	60.1	2.4	8	-5.6
R19-39	325	1	0.0	62.7	66	62.7	10	----	59.1	3.6	8	-4.4

This is a location with an existing retaining wall, therefore the "No Barrier" and "Noise Reduction" output columns are not applicable.

Refer to Exhibit D for Build No Barrier conditions and the Noise Barrier Analysis portion of Exhibit E for noise reduction metrics.

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	135	0.0	4.2	12.3
All Impacted	19	0.0	9.2	12.3
All that meet NR Goal	19	8.0	10.2	12.3

RESULTS: SOUND LEVELS

US 52 Reconstruction

R18-25	215	1	0.0	53.2	66	53.2	10	----	53.0	0.2	8	-7.8
R18-26	216	1	0.0	52.8	66	52.8	10	----	52.5	0.3	8	-7.7
R18-27	217	1	0.0	52.3	66	52.3	10	----	52.0	0.3	8	-7.7
R18-28	218	1	0.0	52.0	66	52.0	10	----	51.7	0.3	8	-7.7
R18-29	219	1	0.0	52.5	66	52.5	10	----	52.2	0.3	8	-7.7
R18-30	220	1	0.0	52.9	66	52.9	10	----	52.6	0.3	8	-7.7
R18-31	221	1	0.0	53.2	66	53.2	10	----	52.9	0.3	8	-7.7
R18-32	222	1	0.0	53.8	66	53.8	10	----	53.5	0.3	8	-7.7
R18-33	223	1	0.0	54.4	66	54.4	10	----	54.1	0.3	8	-7.7
R18-34	224	1	0.0	55.4	66	55.4	10	----	55.2	0.2	8	-7.8
R18-35	225	1	0.0	56.2	66	56.2	10	----	56.1	0.1	8	-7.9
R18-36	226	1	0.0	58.0	66	58.0	10	----	57.9	0.1	8	-7.9
R18-37	227	1	0.0	59.6	66	59.6	10	----	59.5	0.1	8	-7.9
R18-38	228	1	0.0	58.7	66	58.7	10	----	58.6	0.1	8	-7.9
R18-39	229	1	0.0	57.3	66	57.3	10	----	57.1	0.2	8	-7.8
R18-40	230	1	0.0	55.7	66	55.7	10	----	55.4	0.3	8	-7.7
R18-41	231	1	0.0	55.1	66	55.1	10	----	54.8	0.3	8	-7.7
R18-42	232	1	0.0	54.4	66	54.4	10	----	54.1	0.3	8	-7.7
R18-43	233	1	0.0	54.0	66	54.0	10	----	53.7	0.3	8	-7.7
R18-44	234	1	0.0	53.5	66	53.5	10	----	53.2	0.3	8	-7.7
R18-45	235	1	0.0	53.4	66	53.4	10	----	53.0	0.4	8	-7.6
R18-46	236	1	0.0	53.1	66	53.1	10	----	52.8	0.3	8	-7.7
R18-47	237	1	0.0	53.4	66	53.4	10	----	53.0	0.4	8	-7.6
R18-48	238	1	0.0	53.7	66	53.7	10	----	53.3	0.4	8	-7.6
R18-49	239	1	0.0	54.3	66	54.3	10	----	53.9	0.4	8	-7.6
R18-50	240	1	0.0	54.6	66	54.6	10	----	54.3	0.3	8	-7.7
R18-51	241	1	0.0	55.1	66	55.1	10	----	54.8	0.3	8	-7.7
R18-52	242	1	0.0	55.9	66	55.9	10	----	55.5	0.4	8	-7.6
R18-53	243	1	0.0	56.5	66	56.5	10	----	56.2	0.3	8	-7.7
R18-54	244	1	0.0	57.2	66	57.2	10	----	57.0	0.2	8	-7.8
R18-55	245	1	0.0	58.4	66	58.4	10	----	58.3	0.1	8	-7.9
R18-56	246	1	0.0	59.8	66	59.8	10	----	59.6	0.2	8	-7.8
R18-57	247	1	0.0	58.6	66	58.6	10	----	58.3	0.3	8	-7.7
R18-58	248	1	0.0	57.8	66	57.8	10	----	57.5	0.3	8	-7.7
R18-59	249	1	0.0	57.0	66	57.0	10	----	56.6	0.4	8	-7.6
R18-60	250	1	0.0	56.5	66	56.5	10	----	56.0	0.5	8	-7.5
R18-61	251	1	0.0	55.8	66	55.8	10	----	55.4	0.4	8	-7.6
R18-62	252	1	0.0	55.4	66	55.4	10	----	54.9	0.5	8	-7.5
R18-63	253	1	0.0	54.9	66	54.9	10	----	54.5	0.4	8	-7.6
R18-64	254	1	0.0	54.6	66	54.6	10	----	54.1	0.5	8	-7.5
R18-65	255	1	0.0	54.4	66	54.4	10	----	53.9	0.5	8	-7.5

RESULTS: SOUND LEVELS

US 52 Reconstruction

R18-66	256	1	0.0	54.2	66	54.2	10	----	53.7	0.5	8	-7.5
R18-67	257	1	0.0	54.1	66	54.1	10	----	53.5	0.6	8	-7.4
R18-68	258	1	0.0	54.5	66	54.5	10	----	53.7	0.8	8	-7.2
R18-69	259	1	0.0	54.7	66	54.7	10	----	53.9	0.8	8	-7.2
R18-70	260	1	0.0	54.8	66	54.8	10	----	54.1	0.7	8	-7.3
R18-71	261	1	0.0	55.0	66	55.0	10	----	54.4	0.6	8	-7.4
R18-72	262	1	0.0	55.3	66	55.3	10	----	54.7	0.6	8	-7.4
R18-73	263	1	0.0	55.7	66	55.7	10	----	55.2	0.5	8	-7.5
R18-74	264	1	0.0	56.2	66	56.2	10	----	55.7	0.5	8	-7.5
R18-75	265	1	0.0	56.7	66	56.7	10	----	56.2	0.5	8	-7.5
R18-76	266	1	0.0	57.4	66	57.4	10	----	57.0	0.4	8	-7.6
R18-77	267	1	0.0	58.3	66	58.3	10	----	57.9	0.4	8	-7.6
R18-78	268	1	0.0	59.4	66	59.4	10	----	59.1	0.3	8	-7.7
R18-79	269	1	0.0	59.9	66	59.9	10	----	59.5	0.4	8	-7.6
R18-80	270	1	0.0	60.0	66	60.0	10	----	59.6	0.4	8	-7.6
R18-81	271	1	0.0	60.3	66	60.3	10	----	59.8	0.5	8	-7.5
R18-82	272	1	0.0	60.5	66	60.5	10	----	60.0	0.5	8	-7.5
R18-83	273	1	0.0	60.5	66	60.5	10	----	59.8	0.7	8	-7.3
R18-84	274	1	0.0	60.8	66	60.8	10	----	59.9	0.9	8	-7.1
R18-85	275	1	0.0	59.0	66	59.0	10	----	58.1	0.9	8	-7.1
R18-86	276	1	0.0	58.9	66	58.9	10	----	58.0	0.9	8	-7.1
R18-87	277	1	0.0	58.7	66	58.7	10	----	57.9	0.8	8	-7.2
R18-88	278	1	0.0	58.5	66	58.5	10	----	57.8	0.7	8	-7.3
R18-89	279	1	0.0	58.4	66	58.4	10	----	57.7	0.7	8	-7.3
R18-90	280	1	0.0	58.0	66	58.0	10	----	57.4	0.6	8	-7.4
R18-91	281	1	0.0	58.0	66	58.0	10	----	57.4	0.6	8	-7.4
R18-92	282	1	0.0	56.5	66	56.5	10	----	55.8	0.7	8	-7.3
R18-93	283	1	0.0	56.8	66	56.8	10	----	55.9	0.9	8	-7.1
R18-94	284	1	0.0	57.0	66	57.0	10	----	55.9	1.1	8	-6.9
R18-95	285	1	0.0	55.9	66	55.9	10	----	55.0	0.9	8	-7.1
R18-96	286	1	0.0	55.8	66	55.8	10	----	55.0	0.8	8	-7.2
R19-01	287	1	0.0	69.5	66	69.5	10	Snd Lvl	62.7	6.8	8	-1.2
R19-02	288	1	0.0	64.7	66	64.7	10	----	58.9	5.8	8	-2.2
R19-03	289	1	0.0	61.9	66	61.9	10	----	56.8	5.1	8	-2.9
R19-04	290	1	0.0	62.2	66	62.2	10	----	56.2	6.0	8	-2.0
R19-05	291	1	0.0	61.0	66	61.0	10	----	55.6	5.4	8	-2.6
R19-06	292	1	0.0	60.4	66	60.4	10	----	55.7	4.7	8	-3.3
R19-07	293	1	0.0	58.5	66	58.5	10	----	55.1	3.4	8	-4.6
R19-08	294	1	0.0	58.2	66	58.2	10	----	54.6	3.6	8	-4.4
R19-09	295	1	0.0	57.3	66	57.3	10	----	54.7	2.6	8	-5.4
R19-10	296	1	0.0	56.7	66	56.7	10	----	54.3	2.4	8	-5.6

RESULTS: SOUND LEVELS

US 52 Reconstruction

R19-11	297	1	0.0	56.2	66	56.2	10	----	54.2	2.0	8	-6.0
R19-12	298	1	0.0	55.9	66	55.9	10	----	54.4	1.5	8	-6.5
R19-13	299	1	0.0	54.7	66	54.7	10	----	53.7	1.0	8	-7.0
R19-14	300	1	0.0	54.7	66	54.7	10	----	53.6	1.1	8	-6.9
R19-15	301	1	0.0	54.7	66	54.7	10	----	53.6	1.1	8	-6.9
R19-16	302	1	0.0	54.9	66	54.9	10	----	53.7	1.2	8	-6.8
R19-17	303	1	0.0	55.0	66	55.0	10	----	53.8	1.2	8	-6.8
R19-18	304	1	0.0	55.2	66	55.2	10	----	54.1	1.1	8	-6.9
R19-19	305	1	0.0	55.4	66	55.4	10	----	54.2	1.2	8	-6.8
R19-20	306	1	0.0	55.7	66	55.7	10	----	54.2	1.5	8	-6.5
R19-21	307	1	0.0	56.2	66	56.2	10	----	54.6	1.6	8	-6.4
R19-22	308	1	0.0	56.6	66	56.6	10	----	54.8	1.8	8	-6.2
R19-23	309	1	0.0	57.1	66	57.1	10	----	54.7	2.4	8	-5.6
R19-24	310	1	0.0	57.9	66	57.9	10	----	54.9	3.0	8	-5.0
R19-25	311	1	0.0	58.9	66	58.9	10	----	55.1	3.8	8	-4.2
R19-26	312	1	0.0	58.7	66	58.7	10	----	55.7	3.0	8	-5.0
R19-27	313	1	0.0	57.8	66	57.8	10	----	55.2	2.6	8	-5.4
R19-28	314	1	0.0	57.3	66	57.3	10	----	55.3	2.0	8	-6.0
R19-29	315	1	0.0	56.9	66	56.9	10	----	55.2	1.7	8	-6.3
R19-30	316	1	0.0	56.4	66	56.4	10	----	54.9	1.5	8	-6.5
R19-31	317	1	0.0	56.1	66	56.1	10	----	54.9	1.2	8	-6.8
R19-32	318	1	0.0	57.6	66	57.6	10	----	56.1	1.5	8	-6.5
R19-33	319	1	0.0	58.0	66	58.0	10	----	56.1	1.9	8	-6.1
R19-34	320	1	0.0	58.6	66	58.6	10	----	56.3	2.3	8	-5.7
R19-35	321	1	0.0	59.4	66	59.4	10	----	56.4	3.0	8	-5.0
R19-36	322	1	0.0	59.1	66	59.1	10	----	58.1	1.0	8	-7.0
R19-37	323	1	0.0	60.1	66	60.1	10	----	58.6	1.5	8	-6.5
R19-38	324	1	0.0	60.8	66	60.8	10	----	59.7	1.1	8	-6.9
R19-39	325	1	0.0	60.6	66	60.6	10	----	59.6	1.0	8	-7.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		135	0.0	1.0	6.8							
All Impacted		8	0.1	1.0	6.8							
All that meet NR Goal		0	0.0	0.0	0.0							

Exhibit E
Noise Barrier Analysis

Noise Level Comparison	
XX	Approaches or Exceeds FHWA Noise Abatement Criteria

Table 1
Build Noise Barrier Cost Effectiveness - Wall W7-9 - 9.23 Foot Noise Barrier at 669 feet

Noise Barrier	Receptor	Land Use	Dwelling Units	Leq Noise Level (dBA)			Noise Reduction (dBA)	Total Benefited Receptors	Acoustically Feasible	Reasonableness Design Goal Reduction	Height of Barrier (ft)	Length of Barrier (ft)	Barrier Area (sq ft)	Total Cost of Barrier (\$30/sq ft)	Cost Per Benefited Receptor	Noise Barrier Results
				FHWA Criteria (dBA)	Build Year 2050 (No Barrier)	Build Year 2050 (With Barrier)										
Wall W7-9	R7-01	B	1	67	67	57	10	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-02	B	1	67	60	57	3	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-03	B	1	67	66	60	6	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-04	B	1	67	64	58	6	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-05	B	1	67	61	56	5	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-06	B	1	67	55	52	3	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-07	B	1	67	54	52	2	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-08	B	1	67	54	52	2	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-09	B	1	67	55	53	2	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-10	B	1	67	58	58	0	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-11	B	1	67	53	52	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-12	B	1	67	52	51	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-13	B	1	67	51	50	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-14	B	1	67	52	50	2	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-15	B	1	67	52	50	2	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-16	B	1	67	50	49	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-17	B	1	67	51	50	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-18	B	1	67	53	52	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-19	B	1	67	53	52	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R7-20	B	1	67	50	49	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R9-01	B	1	67	66	61	5	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R9-02	B	1	67	58	56	2	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R9-03	B	1	67	55	54	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R9-04	B	1	67	53	51	2	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R9-05	B	1	67	53	52	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective
Wall W7-9	R9-06	B	1	67	51	50	1	5	Yes	Yes	9	669	6,175	\$185,246	\$37,049.22	Not Cost Effective

Exhibit E
Noise Barrier Analysis

Noise Level Comparison	
XX	Approaches or Exceeds FHWA Noise Abatement Criteria

Table 2
Build Noise Barrier Cost Effectiveness - Wall W13-v2 - 12 Foot Noise Barrier at 508 feet

Noise Barrier	Receptor	Land Use	Dwelling Units	Leq Noise Level (dBA)			Noise Reduction (dBA)	Total Benefited Receptors	Acoustically Feasible	Reasonableness Design Goal Reduction	Height of Barrier (ft)	Length of Barrier (ft)	Barrier Area (sq ft)	Total Cost of Barrier (\$30/sq ft)	Cost Per Benefited Receptor	Noise Barrier Results
				FHWA Noise Standard	Build Year 2050 (No Barrier)	Build Year 2050 (With Barrier)										
Wall W13-v2	R13-02	B	1	67	58	57	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-03	B	1	67	56	55	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-04	B	1	67	52	51	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-05	B	1	67	51	50	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-06	B	1	67	50	49	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-07	B	1	67	52	50	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-08	B	1	67	54	52	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-09	B	1	67	56	54	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-10	B	1	67	58	56	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-11	B	1	67	60	57	3	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-12	B	1	67	68	61	7	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-13	B	1	67	68	67	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-15	B	1	67	55	53	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-16	B	1	67	52	51	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-17	B	1	67	52	50	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-18	B	1	67	51	50	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-19	B	1	67	51	50	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-20	B	1	67	52	50	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-21	B	1	67	56	53	3	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-22	B	1	67	57	54	3	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-24	B	1	67	54	51	3	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-25	B	1	67	52	51	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-26	B	1	67	51	50	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-27	B	1	67	52	50	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-28	B	1	67	53	51	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-29	B	1	67	55	52	3	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-30	B	1	67	57	54	3	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-32	B	1	67	65	57	8	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-33	B	1	67	53	52	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-34	B	1	67	53	52	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-35	B	1	67	54	53	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-36	B	1	67	54	53	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-37	B	1	67	55	54	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-38	B	1	67	56	54	2	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-39	B	1	67	57	56	1	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-40	B	1	67	56	56	0	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective
Wall W13-v2	R13-41	B	1	67	55	55	0	2	No	Yes	12	508	6,096	NA	NA	Not Acoustically Effective

Exhibit E
Noise Barrier Analysis

Noise Level Comparison	
XX	Approaches or Exceeds FHWA Noise Abatement Criteria

Table 3
Build Noise Barrier Cost Effectiveness - Wall W18 - 8 Foot Noise Barrier at 772 feet

Noise Barrier	Receptor	Land Use	Dwelling Units	Leq Noise Level (dBA)			Noise Reduction (dBA)	Total Benefited Receptors	Acoustically Feasible	Reasonableness Design Goal Reduction	Height of Barrier (ft)	Length of Barrier (ft)	Barrier Area (sq ft)	Total Cost of Barrier (\$30/sq ft)	Cost Per Benefited Receptor	Noise Barrier Results
				FHWA Noise Standard	Build Year 2050 (No Barrier)	Build Year 2050 (With Barrier)										
Wall W18	R18-01	B	1	67	66	65	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-02	B	1	67	66	63	3	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-03	B	1	67	66	62	4	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-04	B	1	67	67	61	6	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-05	B	1	67	67	60	7	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-06	B	1	67	66	60	6	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-07	B	1	67	67	60	7	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-08	B	1	67	67	59	8	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-09	B	1	67	66	59	7	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-10	B	1	67	65	58	7	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-11	B	1	67	65	58	7	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-12	B	1	67	65	57	8	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-13	B	1	67	65	57	8	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-14	B	1	67	66	58	8	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-15	B	1	67	64	57	7	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-16	B	1	67	63	56	7	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-17	B	1	67	63	56	7	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-18	B	1	67	63	58	5	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-19	B	1	67	64	64	0	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-20	B	1	67	61	60	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-21	B	1	67	58	57	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-22	B	1	67	56	54	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-23	B	1	67	55	53	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-24	B	1	67	54	52	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-25	B	1	67	53	52	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-26	B	1	67	53	51	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-27	B	1	67	52	51	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-28	B	1	67	52	51	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-29	B	1	67	53	51	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-30	B	1	67	53	52	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-31	B	1	67	53	52	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-32	B	1	67	54	52	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-33	B	1	67	54	52	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-34	B	1	67	55	53	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-35	B	1	67	56	54	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-36	B	1	67	58	55	3	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-37	B	1	67	60	57	3	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-38	B	1	67	59	54	5	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-39	B	1	67	57	54	3	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-40	B	1	67	56	53	3	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-41	B	1	67	55	53	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-42	B	1	67	54	52	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-43	B	1	67	54	52	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-44	B	1	67	54	52	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R18-45	B	1	67	53	52	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct

Exhibit E
Noise Barrier Analysis

Noise Level Comparison	
XX	Approaches or Exceeds FHWA Noise Abatement Criteria

Wall W18	R19-02	B	1	67	65	65	0	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-03	B	1	67	62	62	0	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-04	B	1	67	62	62	0	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-05	B	1	67	62	61	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-06	B	1	67	61	60	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-07	B	1	67	59	58	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-08	B	1	67	59	58	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-09	B	1	67	58	57	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-10	B	1	67	57	56	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-11	B	1	67	57	56	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-12	B	1	67	56	56	0	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-13	B	1	67	55	54	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-14	B	1	67	55	54	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-15	B	1	67	55	54	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-16	B	1	67	55	54	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-17	B	1	67	55	54	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-18	B	1	67	55	55	0	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-19	B	1	67	56	55	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-20	B	1	67	56	55	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-21	B	1	67	56	56	0	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-22	B	1	67	57	56	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-23	B	1	67	58	57	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-24	B	1	67	58	58	0	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-25	B	1	67	59	59	0	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-26	B	1	67	59	58	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-27	B	1	67	58	57	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-28	B	1	67	58	57	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-29	B	1	67	57	56	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-30	B	1	67	57	56	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-31	B	1	67	56	55	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-32	B	1	67	58	57	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-33	B	1	67	58	57	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-34	B	1	67	59	58	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-35	B	1	67	60	59	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-36	B	1	67	59	58	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-37	B	1	67	60	59	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-38	B	1	67	61	60	1	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct
Wall W18	R19-39	B	1	67	61	59	2	18	Yes	Yes	8	772	6,176	\$185,280	\$10,293.33	Propose to Construct

Exhibit E
Noise Barrier Analysis

Noise Level Comparison	
XX	Approaches or Exceeds FHWA Noise Abatement Criteria

Table 4
Build Noise Barrier Cost Effectiveness - Wall W19 - 20 Foot Noise Barrier at 805 feet

Noise Barrier	Receptor	Land Use	Dwelling Units	Leq Noise Level (dBA)			Noise Reduction (dBA)	Total Benefited Receptors	Acoustically Feasible	Reasonableness Design Goal Reduction	Height of Barrier (ft)	Length of Barrier (ft)	Barrier Area (sq ft)	Total Cost of Barrier (\$30/sq ft)	Cost Per Benefited Receptor	Noise Barrier Results
				FHWA Noise Standard	Build Year 2050 (No Barrier)	Build Year 2050 (With Barrier)										
Wall W19	R18-01	B	1	67	66	66	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-02	B	1	67	66	65	1	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-03	B	1	67	66	66	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-04	B	1	67	67	66	1	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-05	B	1	67	67	66	1	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-06	B	1	67	66	66	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-07	B	1	67	67	66	1	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-08	B	1	67	67	66	1	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-09	B	1	67	66	66	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-10	B	1	67	65	65	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-11	B	1	67	65	64	1	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-12	B	1	67	65	65	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-13	B	1	67	65	65	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-14	B	1	67	66	66	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-15	B	1	67	64	64	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-16	B	1	67	63	63	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-17	B	1	67	63	63	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-18	B	1	67	63	63	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-19	B	1	67	64	64	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-20	B	1	67	61	61	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-21	B	1	67	58	58	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-22	B	1	67	56	56	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-23	B	1	67	55	55	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-24	B	1	67	54	54	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-25	B	1	67	53	53	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-26	B	1	67	53	53	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-27	B	1	67	52	52	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-28	B	1	67	52	52	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-29	B	1	67	53	52	1	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-30	B	1	67	53	53	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-31	B	1	67	53	53	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-32	B	1	67	54	54	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-33	B	1	67	54	54	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-34	B	1	67	55	55	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-35	B	1	67	56	56	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-36	B	1	67	58	58	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-37	B	1	67	60	60	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-38	B	1	67	59	59	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-39	B	1	67	57	57	0	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal
Wall W19	R18-40	B	1	67	56	55	1	6	Yes	No	20	805	16,100	NA	NA	Does Not Meet Noise Reduction Design Goal

EXHIBIT F
BARRIER WALL LOCATIONS

- Wall 18 - Reasonable and Feasible
- Wall 19 - Not Feasible
- Wall 7-9 - Reasonable and Feasible (Cost Effective Cumulative)
- Wall 13 - Not Feasible
- ▲ Representative Receptor
- Pedestrian Bridge
- Proposed EOP
- Common Noise Environment

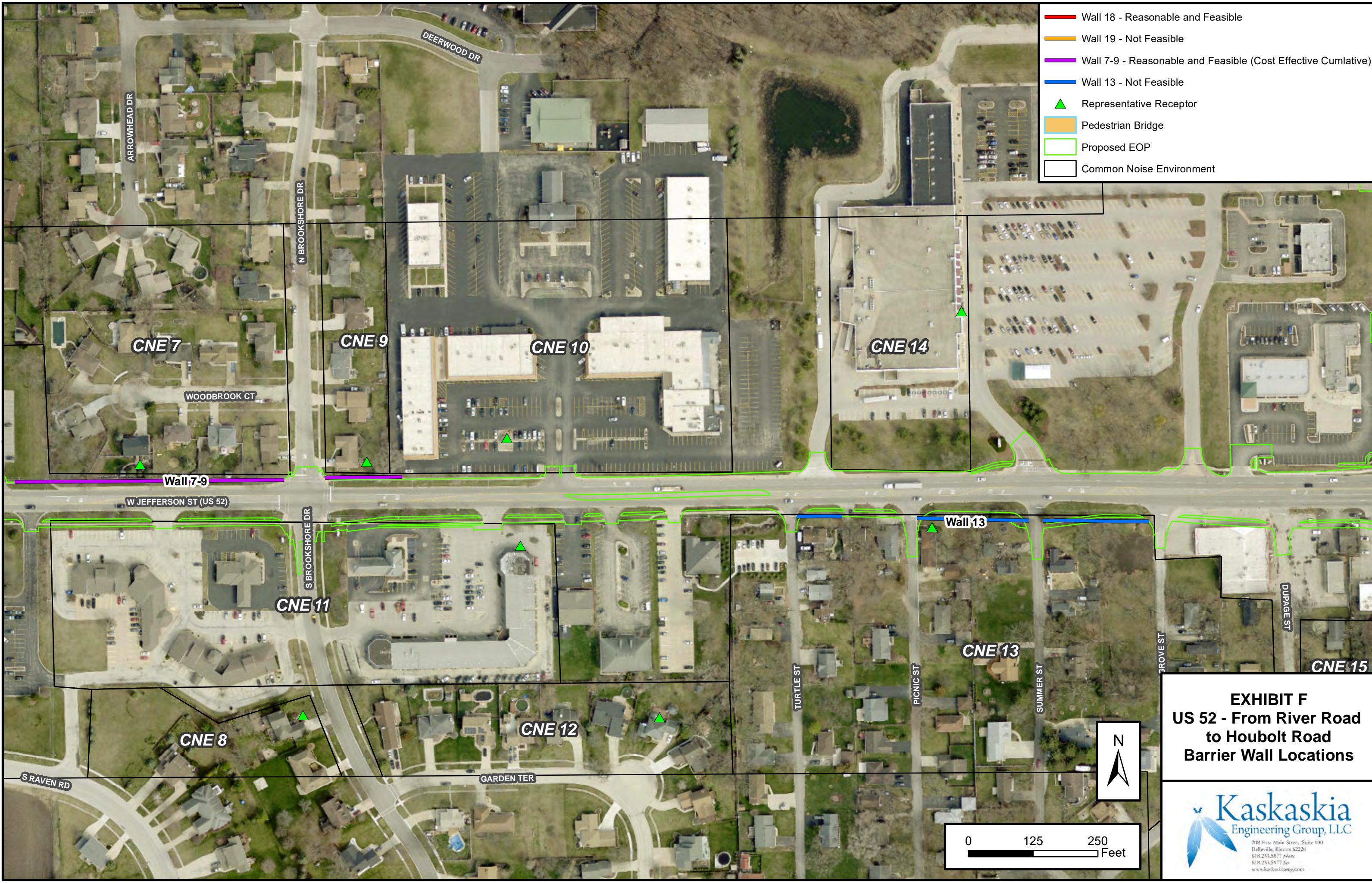
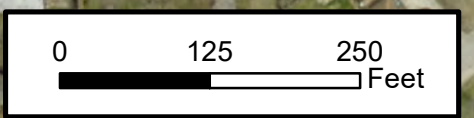


EXHIBIT F
US 52 - From River Road
to Houbolt Road
Barrier Wall Locations



Kaskaskia
 Engineering Group, LLC

208 East Main Street, Suite 100
 Belleville, Illinois 62220
 618.233.5877 Phone
 618.233.5977 Fax
 www.kaskaskiaeng.com

- Wall 18 - Reasonable and Feasible
- Wall 19 - Not Feasible
- Wall 7-9 - Reasonable and Feasible (Cost Effective Cumulative)
- Wall 13 - Not Feasible
- ▲ Representative Receptor
- ▭ Pedestrian Bridge
- ▭ Proposed EOP
- ▭ Common Noise Environment

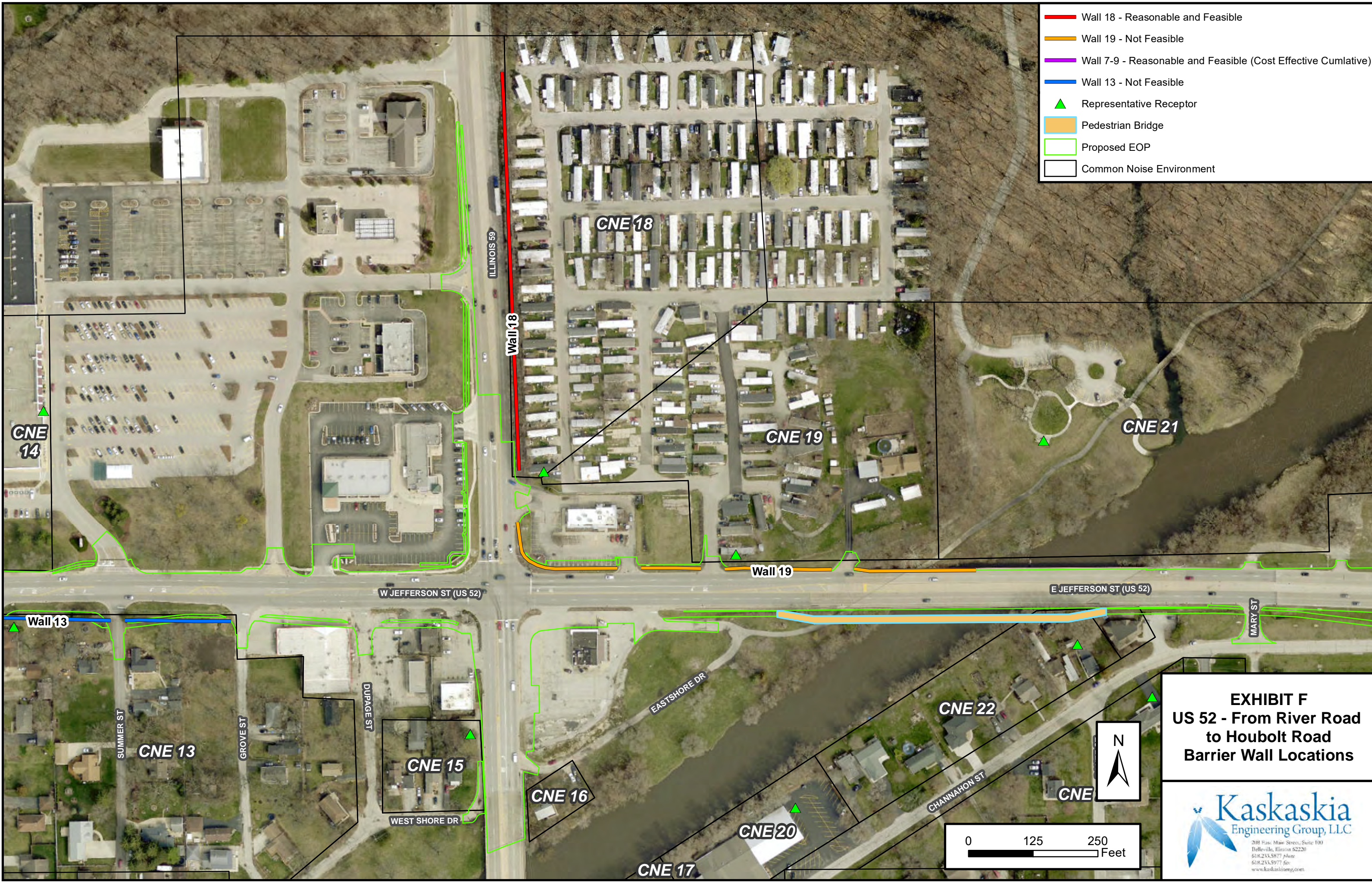


EXHIBIT F
US 52 - From River Road
to Houbolt Road
Barrier Wall Locations

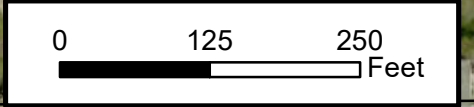


EXHIBIT G
NOISE CONTOURS FOR PUBLIC OFFICIALS

Project and Environmental Studies

US 52 (Jefferson Street)
From River Road to Houbolt Road
Will County

October __, 2020

Jim Culotta, Village Administrator
Village of Shorewood
One Towne Center Boulevard
Shorewood, IL 60404

Dear Mr. Culotta,

The Illinois Department of Transportation (Department) is nearing completion of preliminary engineering and environmental studies (Phase I) for the proposed improvement of US 52 from River Road to Houbolt Road. Contract plan preparation, land acquisition and construction for this improvement are included in the Department's FY 2021-2026 Proposed Highway Improvement Program.

The proposed scope of work for the improvement consists of capacity improvements to the US 52 corridor from River Road to Houbolt Road. The project includes an add-lane on US 52 between River Road and IL 59 to provide two through lanes in each direction. Additionally, access control is being implemented along the corridor through the installation of a raised, curb median to improve mobility and safety. There are several major intersection improvements along the corridor, specifically at the US 52 with IL 59, US 52 with I-55 East Frontage Road, and US 52 with Houbolt Road intersections. The I-55 interchange ramps are being widened to provide additional capacity and storage, and additional left turn lane storage is proposed on US 52 at I-55. An auxiliary lane is also proposed on westbound US 52 between IL 59 and the I-55 south ramps. The project will accommodate connectivity of sidewalks and existing trails.

As part of the environmental studies for this proposed project, projected future traffic noise levels were evaluated for lands either currently under your jurisdiction, or land that may come under your jurisdiction, near the proposed roadway improvement. For developed lands, a traffic noise study has been completed for this project and will be included in the project report which will be transmitted to you in the near future.

The study area includes undeveloped or agriculture land that is zoned for uses other than agriculture, or land that is planned for future development in a comprehensive land use plan. Attached for your information is an exhibit showing the predicted design year (2050) build traffic noise levels for these undeveloped lands identified along the project corridor. The Department recommends that you carefully consider the future predicted noise levels to avoid potential issues of public concern over incompatible noise levels.

To help with your future planning and discernment regarding permitting decisions, the Department encourages you to obtain the Federal Highway Administration (FHWA) publication titled *Entering the Quiet Zone: Noise Compatible Land Use Planning* from their website at http://www.fhwa.dot.gov/environment/noise/noise_compatible_planning/federal_approach/land_use/quietzon.pdf.

For additional information regarding traffic noise, regulations and policy, noise analyses or noise abatement, visit the Department's website at: <http://www.idot.illinois.gov/transportation-system/environment/index> under the Community tab.

If you have any questions or need additional information, please contact Ms. Jessica Feliciano, Project Manager at (847) 705-4087.

Very truly yours,

Anthony J. Quigley, P.E.
Region One Engineer

By:
Steve Schilke, P.E.
Project & Environmental Studies Section Chief

Enclosures

Noise Contours





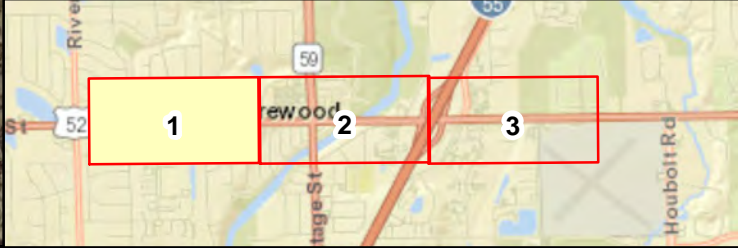
-  66 dBA
-  71 dBA
-  Pedestrian Bridge
-  Proposed Improvements



EXHIBIT G
US 52 - From River Road to Houbolt Road

Noise Contours for Public Officials
Village of Shorewood



Kaskaskia
 Engineering Group, LLC

208 Pass Main Street, Suite 100
 Belleville, Illinois 62220
 618.233.5877 Phone
 618.233.5977 Fax
 www.kaskaskiaeng.com

Noise Contours





-  66 dBA
-  71 dBA
-  Pedestrian Bridge
-  Proposed Improvements



EXHIBIT G
US 52 - From River Road to Houbolt Road

Noise Contours for Public Officials
Village of Shorewood



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Project and Environmental Studies

US 52 (Jefferson Street)
From River Road to Houbolt Road
Will County

October __, 2020

Jim Hock, Interim City Manager
City of Joliet
150 W. Jefferson Street
Joliet, IL 60432

Dear Mr. Hock,

The Illinois Department of Transportation (Department) is nearing completion of preliminary engineering and environmental studies (Phase I) for the proposed improvement of US 52 from River Road to Houbolt Road. Contract plan preparation, land acquisition and construction for this improvement are included in the Department's FY 2021-2026 Proposed Highway Improvement Program.

The proposed scope of work for the improvement consists of capacity improvements to the US 52 corridor from River Road to Houbolt Road. The project includes an add-lane on US 52 between River Road and IL 59 to provide two through lanes in each direction. Additionally, access control is being implemented along the corridor through the installation of a raised, curb median to improve mobility and safety. There are several major intersection improvements along the corridor, specifically at the US 52 with IL 59, US 52 with I-55 East Frontage Road, and US 52 with Houbolt Road intersections. The I-55 interchange ramps are being widened to provide additional capacity and storage, and additional left turn lane storage is proposed on US 52 at I-55. An auxiliary lane is also proposed on westbound US 52 between IL 59 and the I-55 south ramps. The project will accommodate connectivity of sidewalks and existing trails.

As part of the environmental studies for this proposed project, projected future traffic noise levels were evaluated for lands either currently under your jurisdiction, or land that may come under your jurisdiction, near the proposed roadway improvement. For developed lands, a traffic noise study has been completed for this project and will be included in the project report which will be transmitted to you in the near future.

The study area includes undeveloped or agriculture land that is zoned for uses other than agriculture, or land that is planned for future development in a comprehensive land use plan. Attached for your information is an exhibit showing the predicted design year (2050) build traffic noise levels for these undeveloped lands identified along the project corridor. The Department recommends that you carefully consider the future predicted noise levels to avoid potential issues of public concern over incompatible noise levels.

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For additional information regarding traffic noise, regulations and policy, noise analyses or noise abatement, visit the Department's website at: <http://www.idot.illinois.gov/transportation-system/environment/index> under the Community tab.

If you have any questions or need additional information, please contact Ms. Jessica Feliciano, Project Manager at (847) 705-4087.

Very truly yours,

Anthony J. Quigley, P.E.
Region One Engineer

By:
Steve Schilke, P.E.
Project & Environmental Studies Section Chief

Enclosures



Noise Contours

- 66 dBA
- 71 dBA
- Pedestrian Bridge
- Proposed Improvements

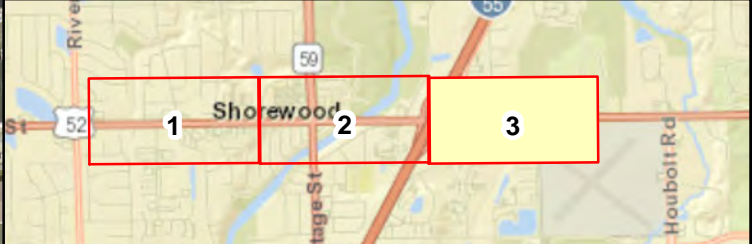

EXHIBIT G
US 22 - From River Road to Houbolt Road

Noise Contours for
Public Officials
Village of Shorewood

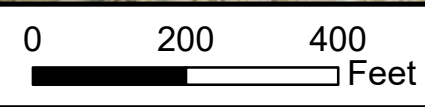


Kaskaskia
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