

NOISE STUDY REPORT

SANCTUARY LANDING
COLUMBIA, SOUTH CAROLINA

MARCH 25, 2025

UPDATED APRIL 17, 2025

INSIGHT NUMBER 09-250108

Prepared for:

Ulysses Development Group
1121 Park West Blvd STE B 136
Mt Pleasant, SC 29466

Reliance to:

South Carolina State Housing and Finance Authority

Prepared by:

Insight Group, LLC
3359 Meeting Street, Suite 101
North Charleston, South Carolina





April 17, 2025

Ulysses Development Group

Attn: Jenn Wilkinson
843.494.2162
jenn.wilkinson@ulyssesdevelopment.com

Re: Noise Study Report Updated
Sanctuary Landing
Columbia, South Carolina
Insight Group Number: 09-250108

Dear Ms. Wilkinson:

The purpose of this report is to present the findings of the HUD Noise Study for the future Sanctuary Landing in Columbia, South Carolina. This report presents our understanding of the proposed improvements, the site and noise sources, calculations and conclusions. The calculations indicated that predicted noise levels are **65 decibels which meets HUD's acceptable threshold and no further action is required.**

We appreciate the opportunity to be of service to Ulysses Development Group on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Insight Group, LLC

A handwritten signature in black ink, appearing to read 'Matt Silveston', written in a cursive style.

Matthew L. Silveston, P.E.
Partner



1 INTRODUCTION..... 4

2 PROJECT INFORMATION 4

2.1 Site Location and Current Condition4

2.2 Project Description4

3 NOISE STANDARDS & CALCULATIONS..... 5

3.1 HUD Day/Night Noise Level Calculator5

3.2 Noise Inputs & Calculations.....6

Roadways.....6

Railroad7

Airports.....7

4 CONCLUSIONS 8

5 LIMITATIONS OF REPORT 8

APPENDICES

Exhibit A	Site Location Plan
Exhibit B	SCDOT Average Daily Traffic Data
	Airport Master Records
	Rail Inventory Report
Exhibit C	Distances to Noise Sources
Exhibit D	HUD DNL Calculator

1 INTRODUCTION

Insight Group has completed the Noise Study for the Sanctuary Landing in Columbia, South Carolina in general accordance with our proposal dated March 18, 2025. The report was issued March 25, and updated on April 17, 2025 due to reconfiguration of the proposed site development. The purpose of this report is to assess noise conditions based on multiple sources and determine if noise mitigation measures are required.

The Noise Study was performed in accordance with the *South Carolina Housing Environmental Review Manual* requirements. Insight Group evaluated the projected noise conditions using procedures from The Noise Guidebook published by US Department of Housing and Urban Development. The modeling uses published traffic data from SCDOT, Federal Aviation Administration Airport Master Records, Federal Railroad Administration and US DOT Crossing Inventory and calculations were performed using HUD's Resource Center DNL Calculator.

2 PROJECT INFORMATION

2.1 Site Location and Current Condition

The proposed location for the apartments to be constructed is south of Fontaine Road and east of Fontaine Circle Drive in Columbia, SC. The current condition of the property is a wooded site.

2.2 Project Description

The proposed construction will consist of nine multi-story apartment buildings with a playground and separate clubhouse building. A stormwater pond will be located on the southern portion of the site.

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108

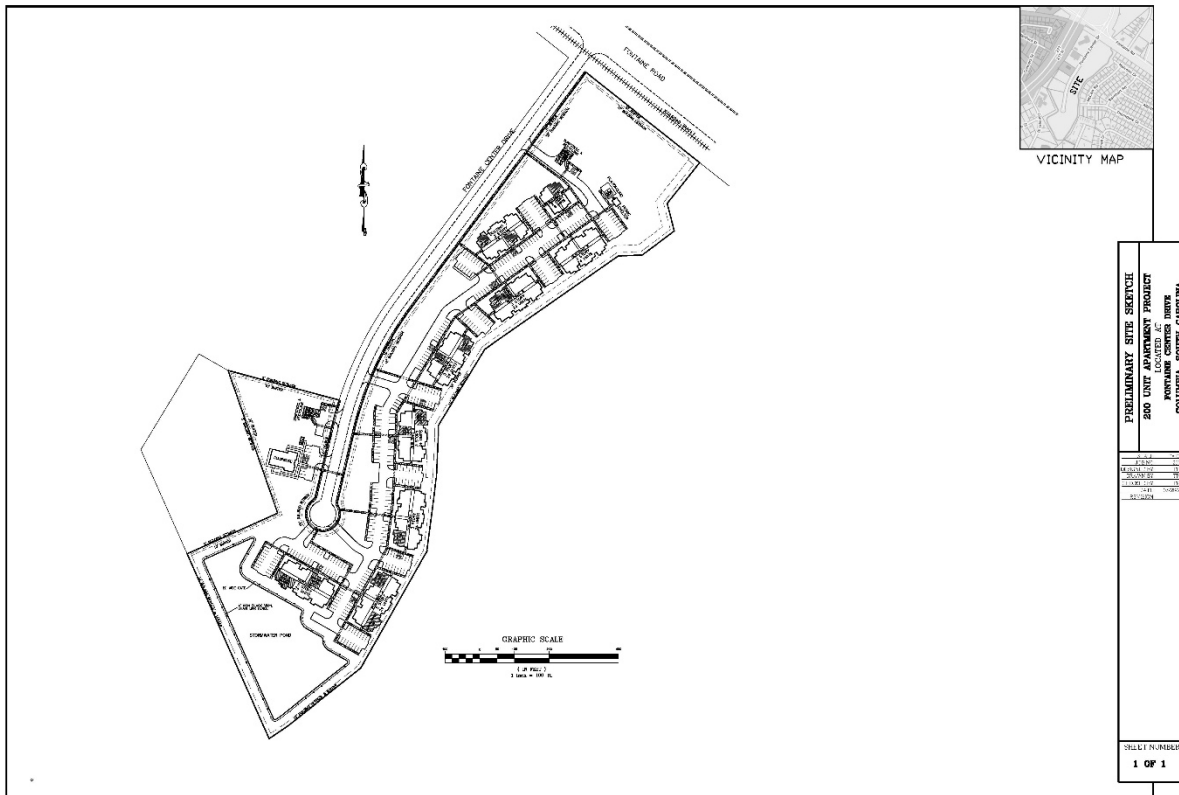


Figure 1: Updated site plan for the Sanctuary Landing

3 NOISE STANDARDS & CALCULATIONS

3.1 HUD Day/Night Noise Level Calculator

Noise calculations were made using HUD's Day/Night Noise Level Calculator. The Environmental Planning Division has developed the Day/Night Noise Level Calculator, an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. This is a web-based application of the existing Noise Assessment Guidelines (NAG). Derivations of the basic noise equation from the noise regulation, 24 CFR Part 51 Subpart B, were applied to a new application of the NAG.

Site Acceptability Standards:

Exterior noise levels: Proposed HUD-assisted projects with a day-night average sound level of 65 decibels and below are acceptable (see Standards in 24 CFR Part 51.103)

3.2 Noise Inputs & Calculations

The source of the noise calculations is based on nearby roadway traffic, railroads and airports. Three Noise Assessment Locations (NALs) were evaluated: Building 7, Building 9 and the Playground. These were selected due to being closest to SC 277, Fountain Road and the CSX RR, with Building 7 being the worst case NAL. The HUD DNL calculator outputs for each NAL have been included in the Appendix.

Roadways The road traffic data has been provided by SCDOT and the most recent traffic counts are from 2023. The roadways within 1,000ft that have been considered for the noise analysis are Fontaine Rd to the north and State Highway 277 to the west. South of the site is Cushman Dr, which is approximately 2,400 ft away. To the east is Two Notch Road, which is approximately 1,800ft away. Due to their distance from the site, Cushman Dr and Two Notch Road have not been included in the analysis.

Traffic mixes were not available from SCDOT and the following mix¹ was used:

- Interstate Urban: Automobiles - 89%; Medium Trucks - 2%; Heavy Trucks - 9 %
- Interstate Rural: Automobiles - 80%; Medium Trucks - 3%; Heavy Trucks - 17 %
- Major Arterial Urban: Automobiles - 92%; Medium Trucks - 4%; Heavy Trucks - 4 %
- Major Arterial Rural: Automobiles - 87%; Medium Trucks - 4%; Heavy Trucks - 9 %

SCDOT has published historical traffic data that dated back to 2017. The 10 year projected Average Daily Traffic (ADT) is based on a calculated growth rate of 2.15% for Fontaine Rd and 1.67% for SC 277.

The future ADT was calculated based on the following equation²

- $\text{Future Year AADT} = \text{Base Year AADT} * (1 + \text{Growth Rate})^{\text{Years in the future}}$

Year/Road	Fontaine Rd ADT	SC 277 ADT
2017	15,600	52,100
2018	16,800	51,900
2019	15,600	59,700
2020	14,900	58,300
2021	14,400	48,800
2022	16,700	54,300

¹ State of South Carolina Documentation Sources For HUD Environmental Reviews, February 19, 2025

² State of South Carolina Documentation Sources For HUD Environmental Reviews, February 19, 2025

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



2023	16,500	53,400
2024	18,100	58,500
2034 projected	22,382	69,030

Railroad

The railroad data from tracks within 3,000ft is from the Federal Railroad Administration. The rail line is operated by CSX and located north of the site. The Average Train Operations (ATO) is 3 and the Night Fraction of the ATO is 50%. Train data is based on the FRA Rail Crossing Inventory and the rail impacts have been included in the noise calculations. The inventory report is included in the Appendix.

Airports

There are 2 airports within a 15mile radius. This includes the Columbia Regional Airport(CAE), and Jim Hamilton-LB Owens Airport (CUB). Over the Hill Airport-12SC is located beyond the 15 mile radius and was not considered in the analysis. Existing Noise studies had been performed for both these airports. The noise contours dissipated quickly and will not extend to Sanctuary Landing. The Airport Noise Contours have been included in the Appendix.

Table 1: Inputs for HUD DNL Noise Calculations (*Building 7-Worst Case*)

	Current Data	2034 Estimated Predictions
Road #1	Fontaine Rd	
Effective Distance	700ft	
Distance to Stop Sign	690ft	
Average Speed	45 mph	
ADT	18,100	19,096
Heavy Trucks	2%	
Night Fraction ADT	15%	15%
Vehicle DNL	54	54
Road #2	SC 277	
Effective Distance	513ft	
Distance to Stop Sign	1,300ft	
Average Speed	60 mph	
ADT	58,500	61,007
Heavy Trucks	3%	
Night Fraction ADT	15%	15%
Vehicle DNL	64	64

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



Railroad	CSX Transportation	
Crossing ID	640941L	
Effective Distance	608ft	
Avg Train Speed	60mph (max)	
Railway Cars per Train	50	
Average Train Operations	3	
Night Fraction of ATO	50	
Train DNL	49	
Combined DNL for all Road and Rail sources	65	65_{10 years}

4 CONCLUSIONS

Based on the traffic rail and airport data, the HUD's Day/Night Noise Level calculations predict noise levels of 65 and 65_{10 years} decibels, which is within the acceptable limits per HUD Guidelines. No further action is needed.

5 LIMITATIONS OF REPORT

These services and this report have been performed in accordance with the local standard of practice. These recommendations apply only to the specific project referenced herein. Conclusions and recommendations are based on the published data. Insight Group should review final plans and re-analyze noise levels if the site layout is modified.

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



APPENDICES

Exhibit A	Site Location Plan
Exhibit B	SCDOT Average Daily Traffic Data
	Airport Master Records
	Rail Inventory Report
Exhibit C	Distances to Noise Sources
Exhibit D	HUD DNL Calculator

Noise Study Report

Sanctuary Landing | Columbia, SC


April 17, 2025 | Insight Group No. 09-250108



EXHIBIT A

Site Location Plan

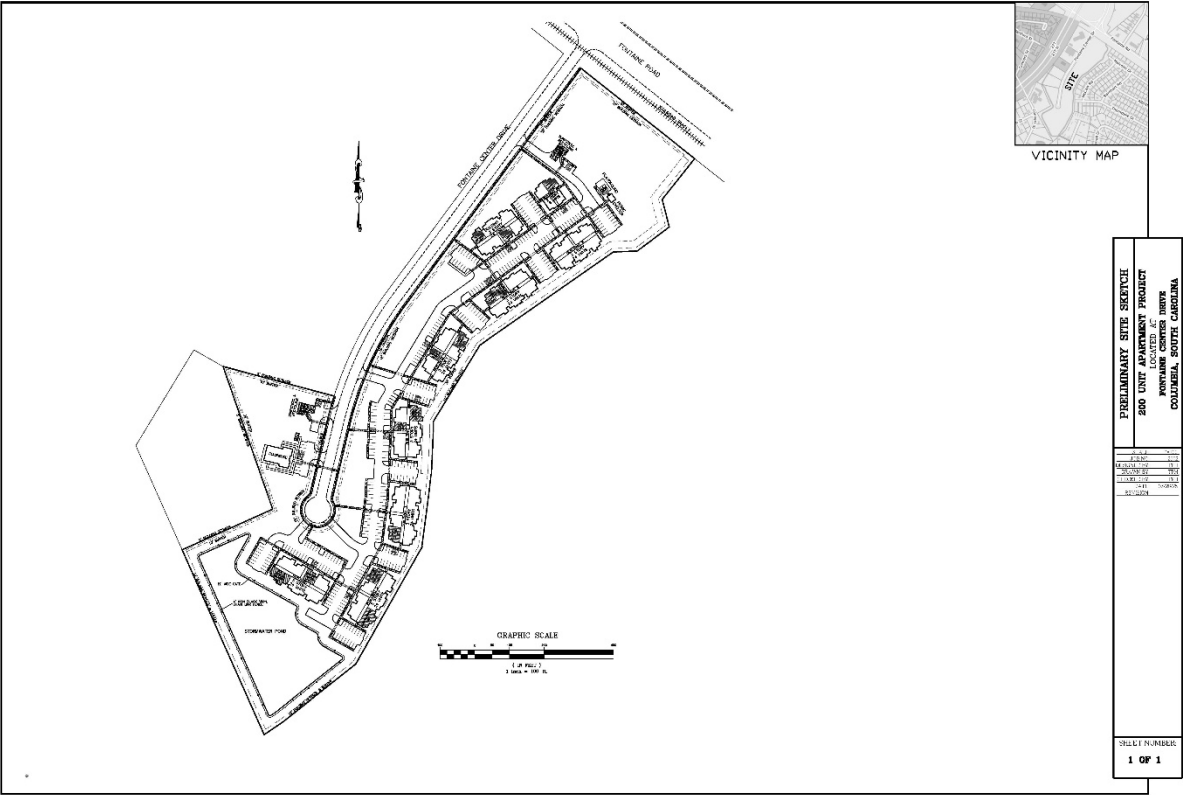


Legend	<div><div>INSIGHT GROUP</div><div>3359 Meeting St. N. Charleston, SC 29405</div><div>Phone: (843) 779 9824 InsightGrp.com</div></div>	Project Name: Sanctuary Landing	Site Location		Exhibit A
		Project Number: 09-250108	Sanctuary Landing Noise Study Report		
		Date: 4/17/2025	Columbia	South Carolina	

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



EXHIBIT B

SCDOT Average Daily Traffic Data

Airport Noise Contours

Rail Inventory Report

Noise Study Report

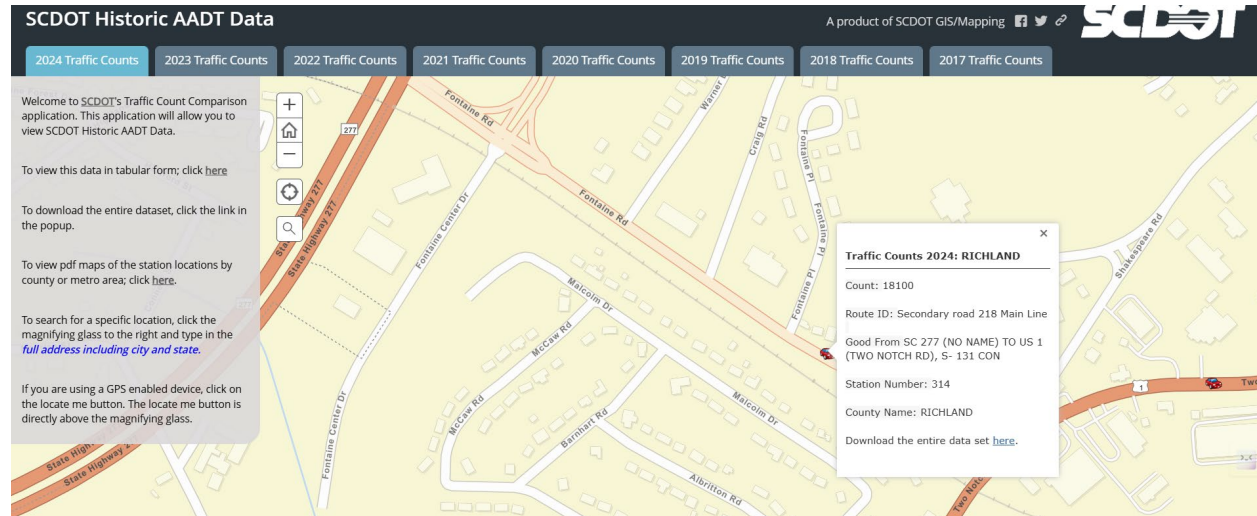
Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108

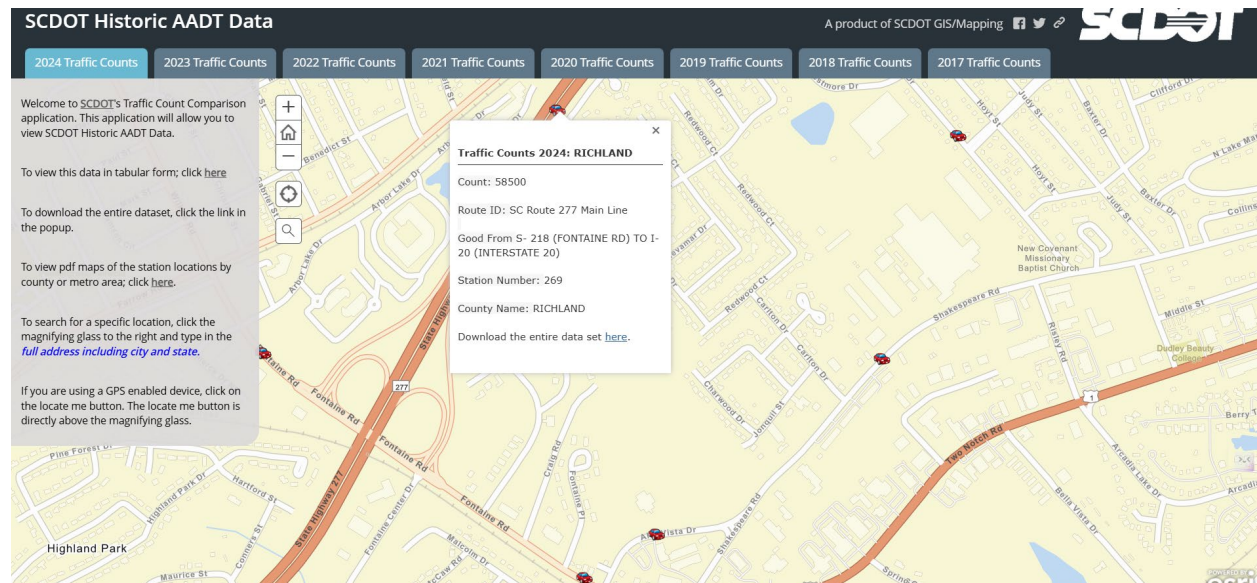


TRAFFIC DATA

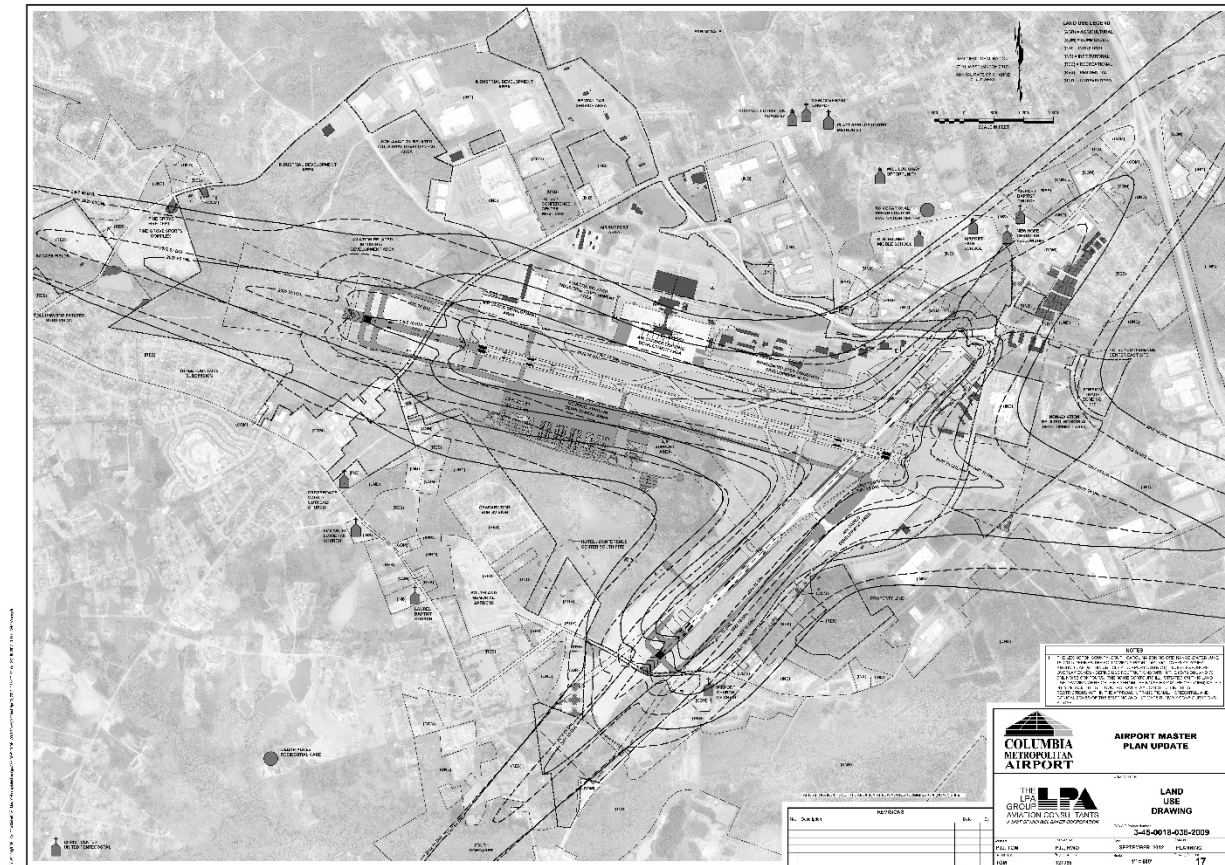
5.1 Fontaine Rd



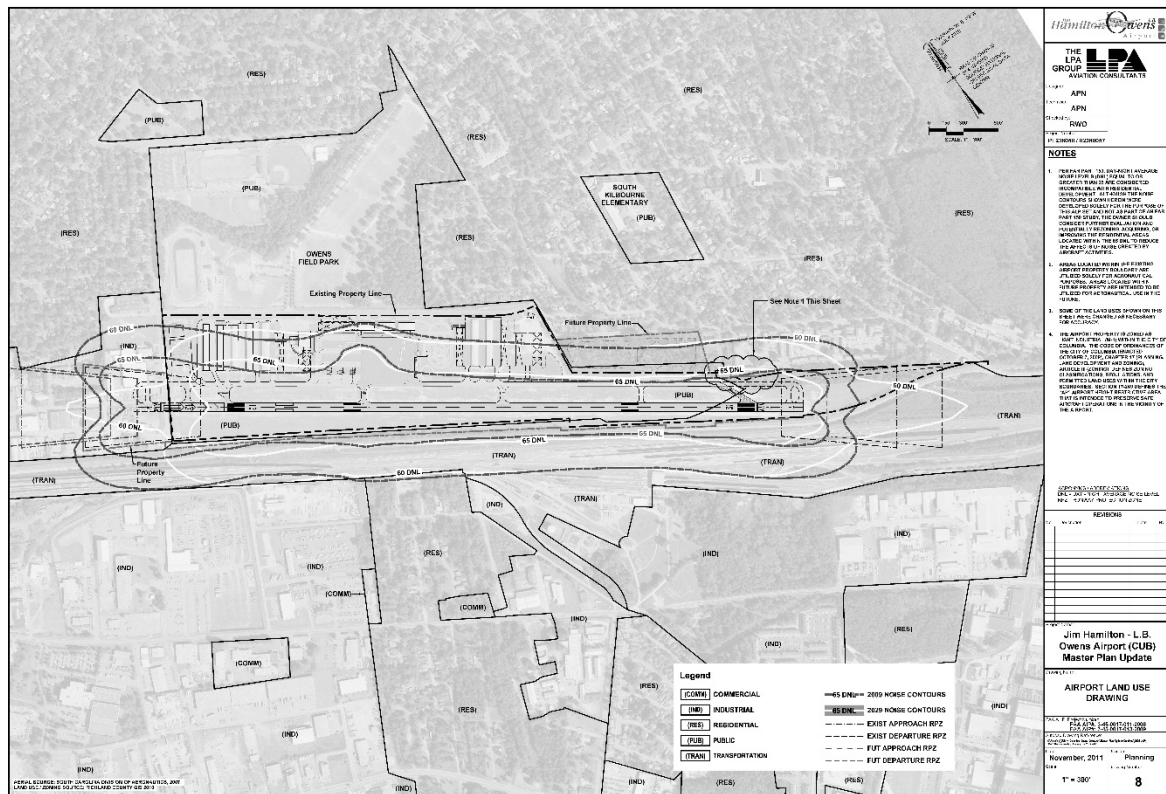
5.2 SC277



April 17, 2025 | Insight Group No. 09-250108



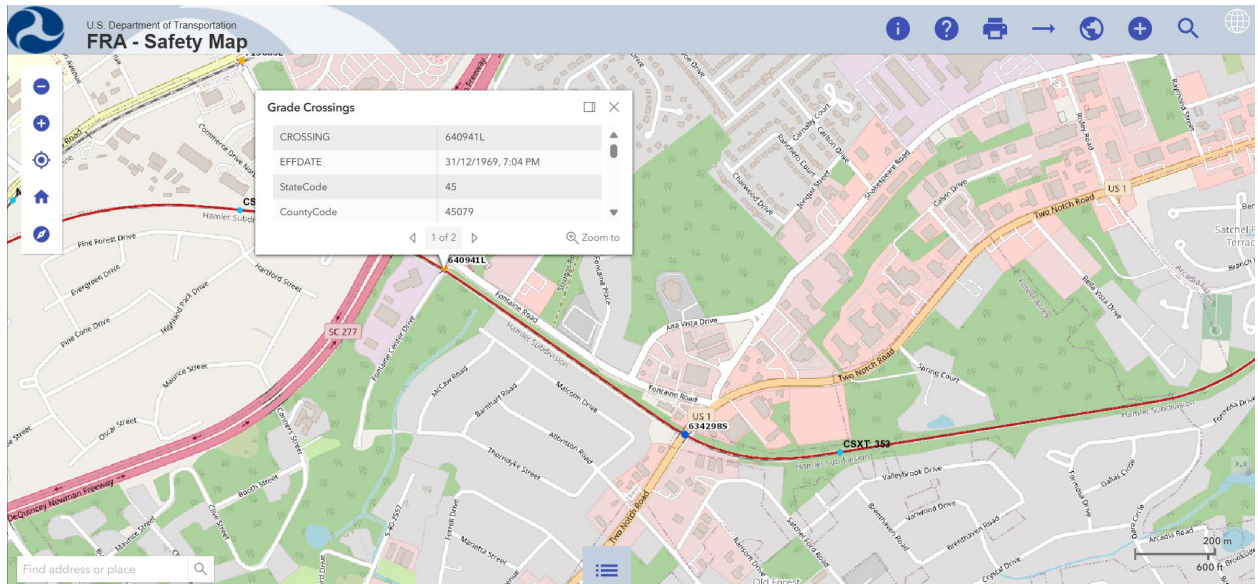
April 17, 2025 | Insight Group No. 09-250108



Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 06 / 04 / 2024	B. Reporting Agency <input checked="" type="checkbox"/> Railroad <input type="checkbox"/> Transit <input type="checkbox"/> State <input type="checkbox"/> Other	C. Reason for Update (Select only one) <input checked="" type="checkbox"/> Change in Data <input type="checkbox"/> New Crossing <input type="checkbox"/> Closed <input type="checkbox"/> Re-Open <input type="checkbox"/> Date Change Only <input type="checkbox"/> Change in Primary Operating RR <input type="checkbox"/> No Train Traffic <input type="checkbox"/> Quiet Zone Update <input type="checkbox"/> Admin. Correction	D. DOT Crossing Inventory Number 640941L
---	--	---	--

Part I: Location and Classification Information

1. Primary Operating Railroad CSX Transportation [CSX]		2. State SOUTH CAROLINA		3. County RICHLAND	
4. City / Municipality <input checked="" type="checkbox"/> In <input type="checkbox"/> Near COLUMBIA		5. Street/Road Name & Block Number FONTAINE CENTER Dr (Street/Road Name) * (Block Number)		6. Highway Type & No. CO RD	
7. Do Other Railroads Operate a Separate Track at Crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Specify RR			8. Do Other Railroads Operate Over Your Track at Crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Specify RR		
9. Railroad Division or Region <input type="checkbox"/> None CAROLINAS		10. Railroad Subdivision or District <input type="checkbox"/> None HAMLET		11. Branch or Line Name <input checked="" type="checkbox"/> None	
12. RR Milepost S 0353.680 (prefix) (nnnn.nnn) (suffix)					
13. Line Segment * 940340		14. Nearest RR Timetable Station * COLUMBIA HUB		15. Parent RR (if applicable) <input checked="" type="checkbox"/> N/A	
16. Crossing Owner (if applicable) <input checked="" type="checkbox"/> N/A					
17. Crossing Type <input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	18. Crossing Purpose <input checked="" type="checkbox"/> Highway <input type="checkbox"/> Pathway, Ped. <input type="checkbox"/> Station, Ped.	19. Crossing Position <input checked="" type="checkbox"/> At Grade <input type="checkbox"/> RR Under <input type="checkbox"/> RR Over	20. Public Access (if Private Crossing) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	21. Type of Train <input checked="" type="checkbox"/> Freight <input type="checkbox"/> Intercity Passenger <input type="checkbox"/> Commuter <input type="checkbox"/> Transit <input type="checkbox"/> Shared Use Transit <input type="checkbox"/> Tourist/Other	22. Average Passenger Train Count Per Day <input type="checkbox"/> Less Than One Per Day <input checked="" type="checkbox"/> Number Per Day 2
23. Type of Land Use <input type="checkbox"/> Open Space <input type="checkbox"/> Farm <input type="checkbox"/> Residential <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional <input type="checkbox"/> Recreational <input type="checkbox"/> RR Yard					
24. Is there an Adjacent Crossing with a Separate Number? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Provide Crossing Number			25. Quiet Zone (FRA provided) <input checked="" type="checkbox"/> No <input type="checkbox"/> 24 Hr <input type="checkbox"/> Partial <input type="checkbox"/> Chicago Excused Date Established		
26. HSR Corridor ID <input checked="" type="checkbox"/> N/A		27. Latitude in decimal degrees (WGS84 std: nn.nnnnnn) 34.0549750		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnn) -80.9899360	
29. Lat/Long Source <input checked="" type="checkbox"/> Actual <input type="checkbox"/> Estimated					
30.A. Railroad Use *		31.A. State Use *			
30.B. Railroad Use *		31.B. State Use *			
30.C. Railroad Use *		31.C. State Use *			
30.D. Railroad Use *		31.D. State Use *			
32.A. Narrative (Railroad Use) *		32.B. Narrative (State Use) *			
33. Emergency Notification Telephone No. (posted) 800-232-0144		34. Railroad Contact (Telephone No.) 904-366-3051		35. State Contact (Telephone No.) 803-737-4440	

Part II: Railroad Information

1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM) 1	1.B. Total Night Thru Trains (6 PM to 6 AM) 2	1.C. Total Switching Trains 0	1.D. Total Transit Trains 0	1.E. Check if Less Than One Movement Per Day <input type="checkbox"/> How many trains per week?
2. Year of Train Count Data (YYYY) 2024		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 60 3.B. Typical Speed Range Over Crossing (mph) From 40 to 60		
4. Type and Count of Tracks Main 1 Siding 0 Yard 0 Transit 0 Industry 0				
5. Train Detection (Main Track only) <input type="checkbox"/> Constant Warning Time <input checked="" type="checkbox"/> Motion Detection <input type="checkbox"/> AFO <input type="checkbox"/> PTC <input type="checkbox"/> DC <input type="checkbox"/> Other <input type="checkbox"/> None				
6. Is Track Signaled? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		7.A. Event Recorder <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		7.B. Remote Health Monitoring <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 06/04/2024		PAGE 2		D. Crossing Inventory Number (7 char.) 640941L	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		2. Types of Passive Traffic Control Devices associated with the Crossing			
2.A. Crossbuck Assemblies (count) 0		2.B. STOP Signs (R1-1) (count) 0	2.C. YIELD Signs (R1-2) (count) 0	2.D. Advance Warning Signs (Check all that apply; include count) <input type="checkbox"/> None <input checked="" type="checkbox"/> W10-1 2 <input type="checkbox"/> W10-3 <input type="checkbox"/> W10-11 <input type="checkbox"/> W10-2 <input type="checkbox"/> W10-4 <input type="checkbox"/> W10-12	
2.E. Low Ground Clearance Sign (W10-5) <input type="checkbox"/> Yes (count) <input checked="" type="checkbox"/> No		2.F. Pavement Markings <input checked="" type="checkbox"/> Stop Lines <input type="checkbox"/> Dynamic Envelope <input checked="" type="checkbox"/> RR Xing Symbols <input type="checkbox"/> None		2.G. Channelization Devices/Medians <input type="checkbox"/> All Approaches <input type="checkbox"/> Median <input type="checkbox"/> One Approach <input type="checkbox"/> None	
2.H. EXEMPT Sign (R15-3) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		2.I. ENS Sign (I-13) Displayed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		2.J. Other MUTCD Signs <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____	
2.K. Private Crossing Signs (if private) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		2.L. LED Enhanced Signs (List types)			
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway 2 Pedestrian 0		3.B. Gate Configuration <input checked="" type="checkbox"/> 2 Quad <input type="checkbox"/> Full (Barrier) <input type="checkbox"/> 3 Quad Resistance <input type="checkbox"/> 4 Quad <input type="checkbox"/> Median Gates		3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane 0 <input type="checkbox"/> Incandescent Not Over Traffic Lane 0 <input type="checkbox"/> LED	
3.D. Mast Mounted Flashing Lights (count of masts) 2 <input checked="" type="checkbox"/> Incandescent <input type="checkbox"/> LED <input checked="" type="checkbox"/> Back Lights Included <input type="checkbox"/> Side Lights Included		3.E. Total Count of Flashing Light Pairs 4			
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) ____/____/____ <input checked="" type="checkbox"/> Not Required		3.G. Wayside Horn <input type="checkbox"/> Yes Installed on (MM/YYYY) ____/____/____ <input checked="" type="checkbox"/> No		3.H. Highway Traffic Signals Controlling Crossing <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3.I. Bells (count) 1		3.J. Non-Train Active Warning <input type="checkbox"/> Flagger/Flagman <input type="checkbox"/> Manually Operated Signals <input type="checkbox"/> Watchman <input type="checkbox"/> Floodlighting <input type="checkbox"/> None			
3.K. Other Flashing Lights or Warning Devices Count 0 Specify type _____		4.A. Does nearby Hwy Intersection have Traffic Signals? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
4.B. Hwy Traffic Signal Interconnection <input type="checkbox"/> Not Interconnected <input checked="" type="checkbox"/> For Traffic Signals <input type="checkbox"/> For Warning Signs		4.C. Hwy Traffic Signal Preemption <input checked="" type="checkbox"/> Simultaneous <input type="checkbox"/> Advance		5. Highway Traffic Pre-Signals <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Storage Distance * _____ Stop Line Distance * _____	
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes 2 <input type="checkbox"/> One-way Traffic <input checked="" type="checkbox"/> Two-way Traffic <input type="checkbox"/> Divided Traffic		2. Is Roadway/Pathway Paved? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		3. Does Track Run Down a Street? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/____ Width * _____ Length * _____ <input type="checkbox"/> 1 Timber <input type="checkbox"/> 2 Asphalt <input checked="" type="checkbox"/> 3 Asphalt and Timber <input type="checkbox"/> 4 Concrete <input type="checkbox"/> 5 Concrete and Rubber <input type="checkbox"/> 6 Rubber <input type="checkbox"/> 7 Metal <input type="checkbox"/> 8 Unconsolidated <input type="checkbox"/> 9 Composite <input type="checkbox"/> 10 Other (specify) _____					
6. Intersecting Roadway within 500 feet? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Approximate Distance (feet) _____		7. Smallest Crossing Angle <input type="checkbox"/> 0° - 29° <input type="checkbox"/> 30° - 59° <input checked="" type="checkbox"/> 60° - 90°		8. Is Commercial Power Available? * <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Part V: Public Highway Information					
1. Highway System <input type="checkbox"/> (01) Interstate Highway System <input type="checkbox"/> (02) Other Nat Hwy System (NHS) <input type="checkbox"/> (03) Federal AID, Not NHS <input checked="" type="checkbox"/> (08) Non-Federal Aid		2. Functional Classification of Road at Crossing <input checked="" type="checkbox"/> (0) Rural <input type="checkbox"/> (1) Urban <input type="checkbox"/> (1) Interstate <input type="checkbox"/> (5) Major Collector <input type="checkbox"/> (2) Other Freeways and Expressways <input type="checkbox"/> (3) Other Principal Arterial <input type="checkbox"/> (6) Minor Collector <input type="checkbox"/> (4) Minor Arterial <input checked="" type="checkbox"/> (7) Local		3. Is Crossing on State Highway System? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4. Highway Speed Limit 45 MPH <input checked="" type="checkbox"/> Posted <input type="checkbox"/> Statutory		5. Linear Referencing System (LRS Route ID) *			
6. LRS Milepost *		7. Annual Average Daily Traffic (AADT) Year 2014 AADT 000513			
8. Estimated Percent Trucks 10 %		9. Regularly Used by School Buses? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Average Number per Day _____		10. Emergency Services Route <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____ Organization _____ Phone _____ Date _____					
Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					

Noise Study Report

Sanctuary Landing | Columbia, SC

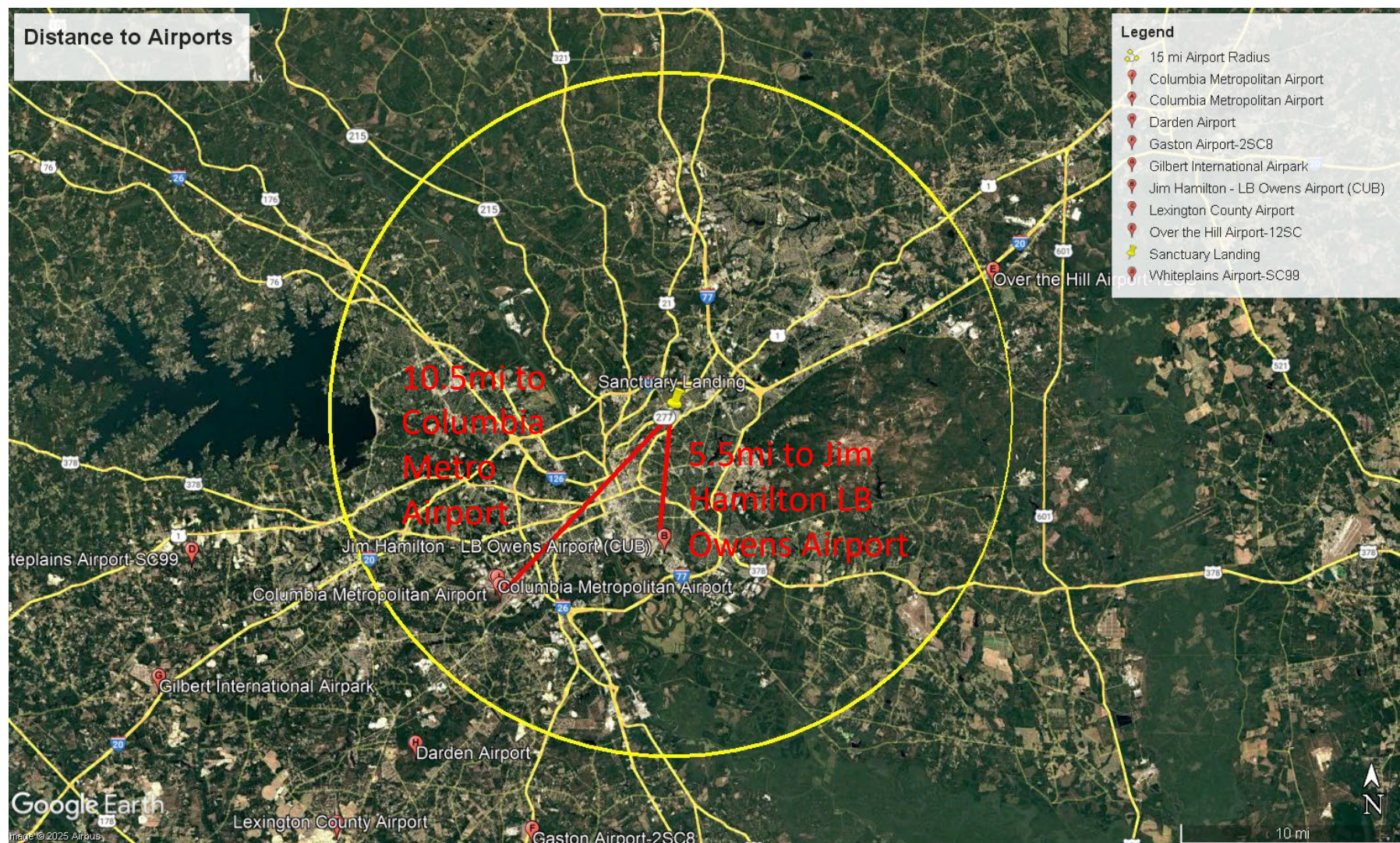
April 17, 2025 | Insight Group No. 09-250108



EXHIBIT C

Distances to Noise Sources

Distance to Airports



Legend



3359 Meeting St. N. Charleston, SC 29405
Phone: (843) 779 9824 InsightGrp.com

Project Name: Sanctuary Landing

Project Number: 09-250108

Date: 4/17/2025

Distances to Noise Sources – Airports

Sanctuary Landing Noise Study

Columbia

South Carolina

Exhibit

C.1

Distance to RR

from Building 7

608ft to CSX RR

Sanctuary Landing

Google Earth



Legend

Project Name: Sanctuary Landing

Project Number: 09-250108

Date: 4/17/2025

3359 Meeting St. N. Charleston, SC 29405

Phone: (843) 779 9824 InsightGrp.com

Distances to Noise Sources – Railroad

Sanctuary Landing Noise Study

Columbia

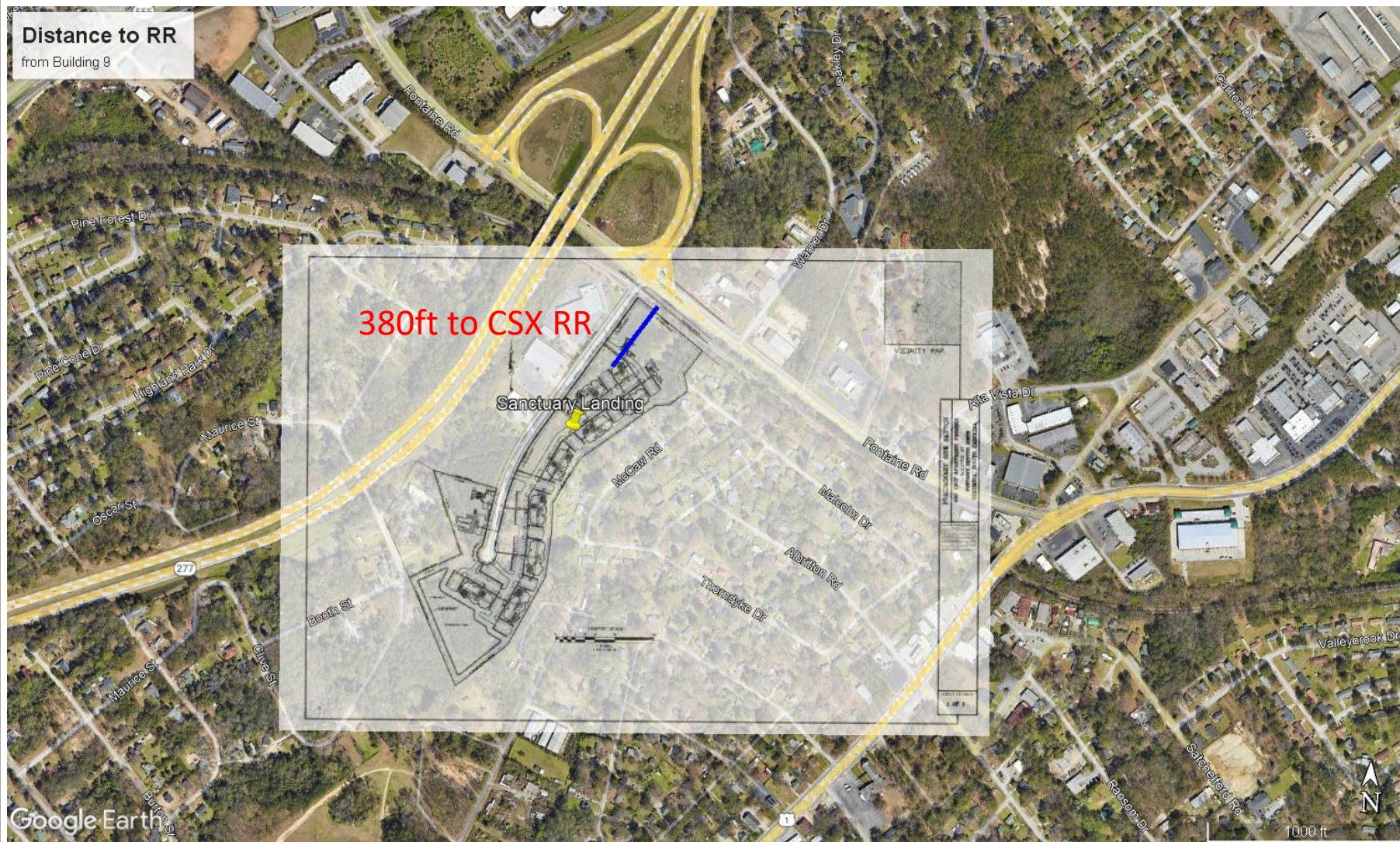
South Carolina

Exhibit

C.2a

Distance to RR

from Building 9



Legend



3359 Meeting St. N. Charleston, SC 29405

Phone: (843) 779 9824 InsightGrp.com

Project Name: Sanctuary Landing

Project Number: 09-250108

Date: 4/17/2025

Distances to Noise Sources – Railroad

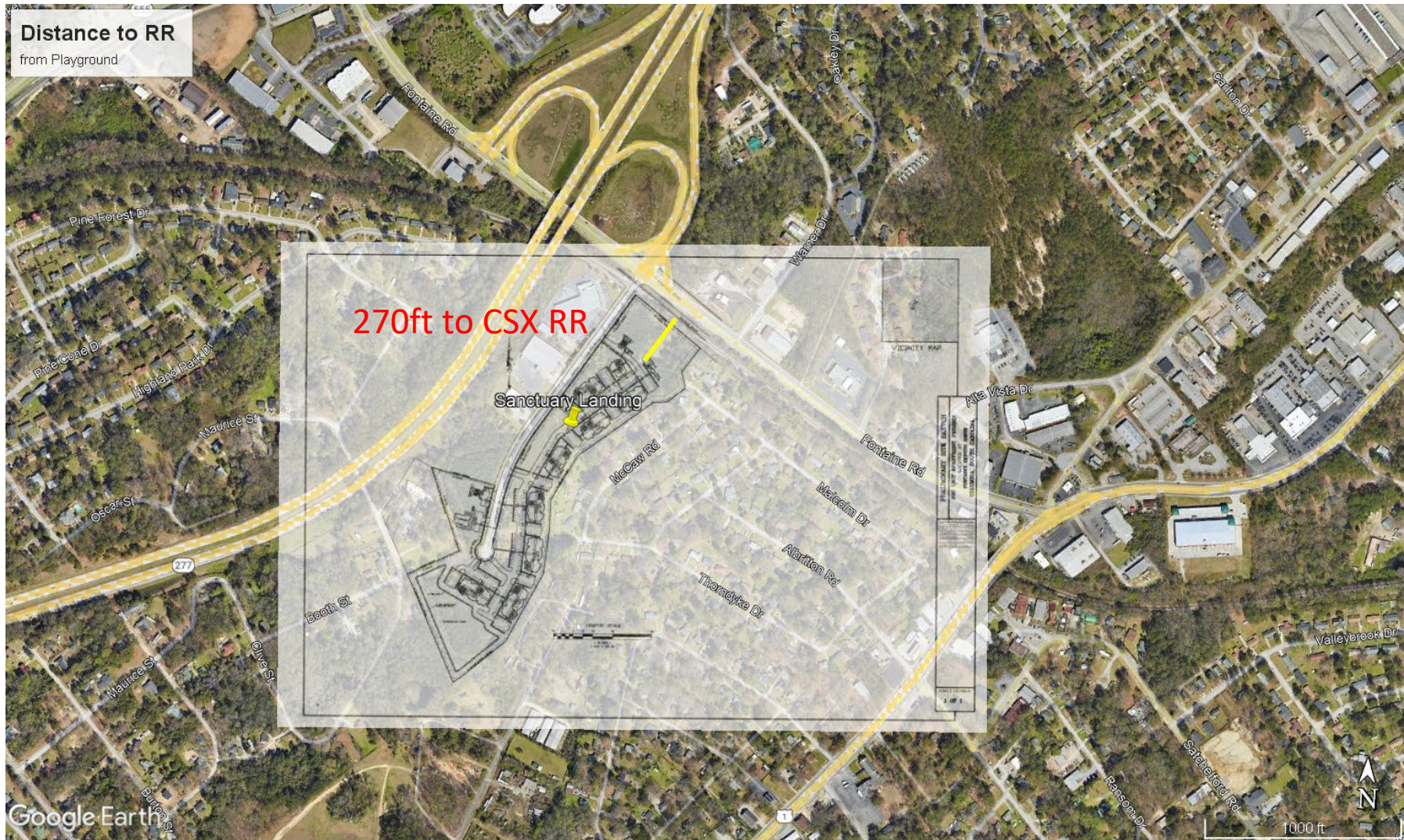
Sanctuary Landing Noise Study

Columbia

South Carolina

Exhibit

C.2b



Legend



3359 Meeting St. N. Charleston, SC 29405
Phone: (843) 779 9824 InsightGrp.com

Project Name: Sanctuary Landing

Project Number: 09-250108

Date: 4/17/2025

Distances to Noise Sources – Railroad

Sanctuary Landing Noise Study

Columbia

South Carolina

Exhibit

C.2c

Distance to Roadways

from Building 7



Legend



3359 Meeting St. N. Charleston, SC 29405

Phone: (843) 779 9824 InsightGrp.com

Project Name: Sanctuary Landing

Project Number: 09-250108

Date: 4/17/2025

Distances to Noise Sources – Roadway

Sanctuary Landing Noise Study

Columbia

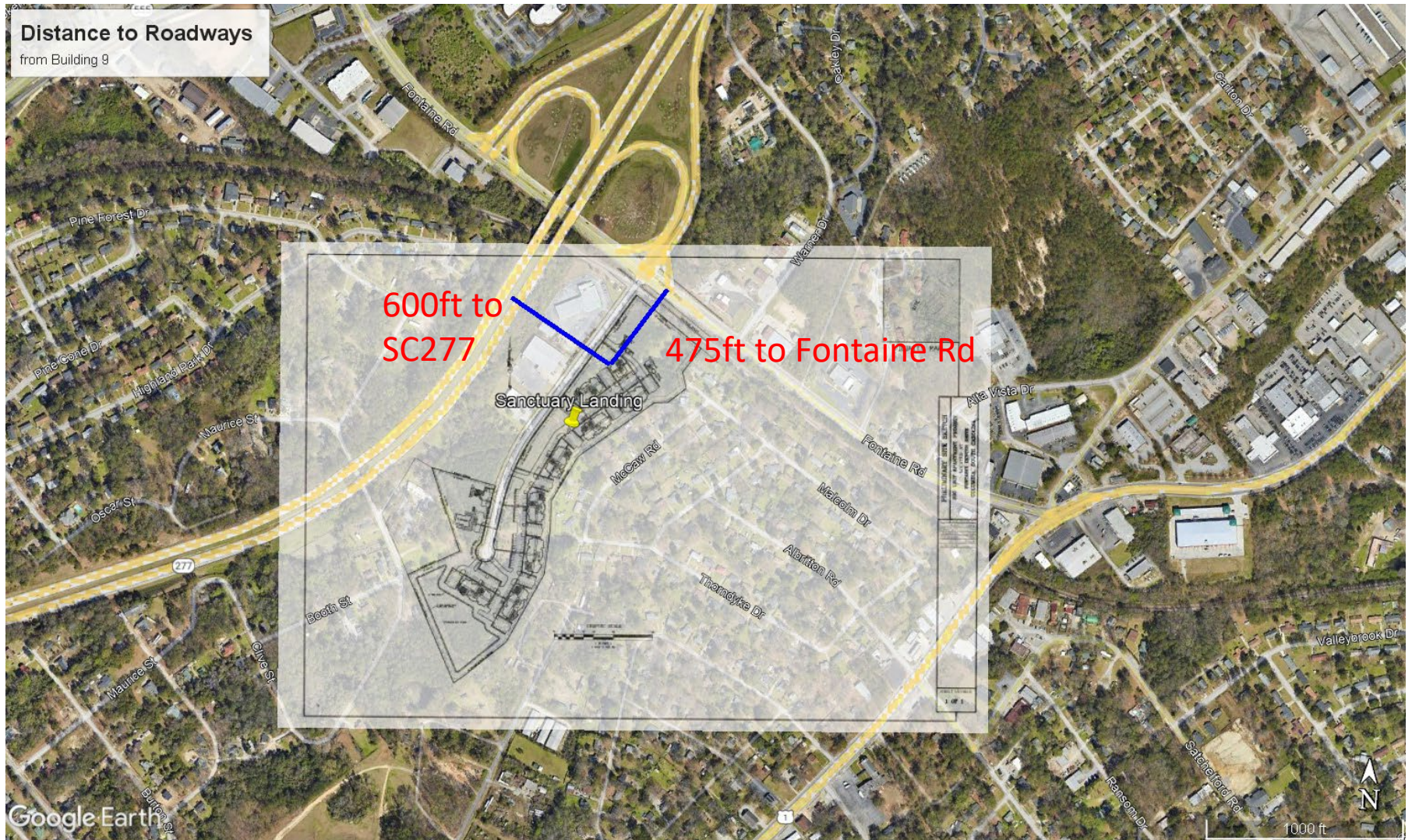
South Carolina

Exhibit

C.3a

Distance to Roadways

from Building 9



Legend



3359 Meeting St. N. Charleston, SC 29405

Phone: (843) 779 9824 InsightGrp.com

Project Name: Sanctuary Landing

Project Number: 09-250108

Date: 4/17/2025

Distances to Noise Sources – Roadway

Sanctuary Landing Noise Study

Columbia

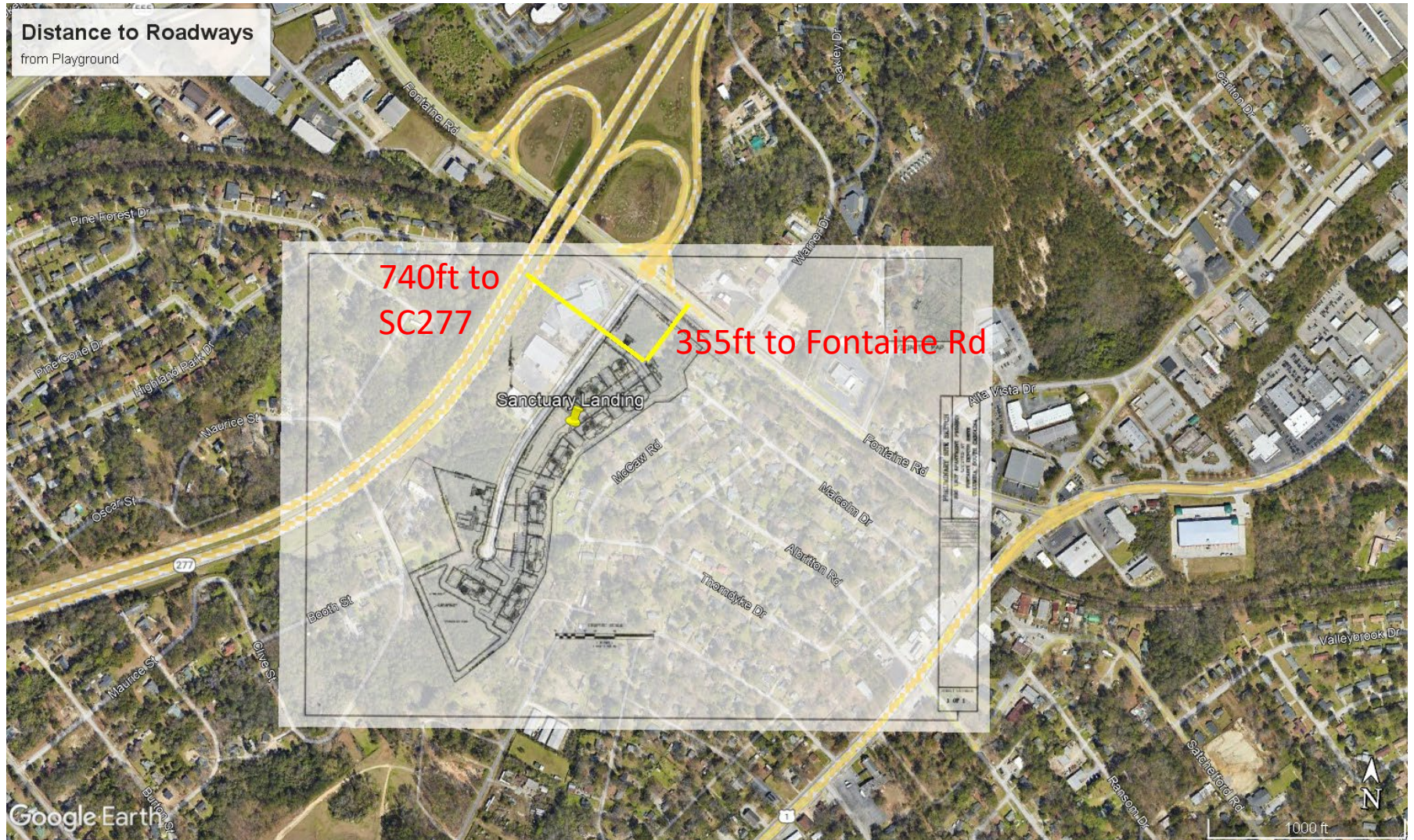
South Carolina

Exhibit

C.3b

Distance to Roadways

from Playground



Legend



3359 Meeting St. N. Charleston, SC 29405

Phone: (843) 779 9824 InsightGrp.com

Project Name: Sanctuary Landing

Project Number: 09-250108

Date: 4/17/2025

Distances to Noise Sources – Roadway

Sanctuary Landing Noise Study

Columbia

South Carolina

Exhibit

C.3c

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



EXHIBIT D

HUD DNL Calculator

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



HUD EXCHANGE

Programs

Resources

DNL Calculator

Site ID

Sanctuary Landing Building 7

Record Date

04/17/2025

User's Name

Silveston

Road # 1 Name:

Fontaine Rd

Road #1

Vehicle Type	Cars	Medium Trucks	Heavy Trucks
Effective Distance	700		700
Distance to Stop Sign			
Average Speed	45		45
Average Daily Trips (ADT)	17738		362
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	51	0	51
Calculate Road #1 DNL	54	Reset	

Road # 2 Name:

SC 277

Road #2

Vehicle Type	Cars	Medium Trucks	Heavy Trucks
Effective Distance	513		513
Distance to Stop Sign			
Average Speed	60		60
Average Daily Trips (ADT)	56745		1755
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	61	0	62
Calculate Road #2 DNL	64	Reset	

Railroad #1 Track Identifier:

CSX Transportation

Rail # 1

Train Type	Electric	Diesel
Effective Distance		608
Average Train Speed		60
Engines per Train		2
Railway cars per Train		50
Average Train Operations (ATO)		3
Night Fraction of ATO		50
Railway whistles or horns?	Yes: No:	Yes: No:
Bolted Tracks?	Yes: No:	Yes: No:
Train DNL	0	49
Calculate Rail #1 DNL	49	Reset

Add Road Source

Add Rail Source

Airport Noise Level

Loud Impulse Sounds?

Yes No

Combined DNL for all Road and Rail sources

65

Combined DNL including Airport

N/A

Site DNL with Loud Impulse Sound

Calculate

Reset

HUD EXCHANGE

Programs

Resources

DNL Calculator

Site ID

Sanctuary Landing Building 7, 2034

Record Date

04/17/2025

User's Name

Silveston

Road # 1 Name:

Fontaine Rd

Road #1

Vehicle Type	Cars	Medium Trucks	Heavy Trucks
Effective Distance	700		700
Distance to Stop Sign			
Average Speed	45		45
Average Daily Trips (ADT)	18714		382
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	52	0	51
Calculate Road #1 DNL	54	Reset	

Road # 2 Name:

SC 277

Road #2

Vehicle Type	Cars	Medium Trucks	Heavy Trucks
Effective Distance	513		513
Distance to Stop Sign			
Average Speed	60		60
Average Daily Trips (ADT)	59176		1830
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	61	0	62
Calculate Road #2 DNL	64	Reset	

Railroad #1 Track Identifier:

CSX Transportation

Rail # 1

Train Type	Electric	Diesel
Effective Distance		608
Average Train Speed		60
Engines per Train		2
Railway cars per Train		50
Average Train Operations (ATO)		3
Night Fraction of ATO		50
Railway whistles or horns?	Yes: No:	Yes: No:
Bolted Tracks?	Yes: No:	Yes: No:
Train DNL	0	49
Calculate Rail #1 DNL	49	Reset

Add Road Source

Add Rail Source

Airport Noise Level

Loud Impulse Sounds?

Yes No

Combined DNL for all Road and Rail sources

65

Combined DNL including Airport

N/A

Site DNL with Loud Impulse Sound

Calculate

Reset

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



HUD EXCHANGE

Programs

Resources

Site ID

Sanctuary Landing Building 9

Record Date

04/17/2025

User's Name

Silveston

Road # 1 Name:

Fontaine Rd

Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	475		475
Distance to Stop Sign			
Average Speed	45		45
Average Daily Trips (ADT)	17738		362
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	54	0	54
Calculate Road #1 DNL	57	Reset	

Road # 2 Name:

SC 277

Road #2

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	600		600
Distance to Stop Sign			
Average Speed	60		60
Average Daily Trips (ADT)	56745		1755
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	60	0	61
Calculate Road #2 DNL	63	Reset	

Railroad #1 Track Identifier:

CSX Transportation

Rail # 1

Train Type	Electric <input type="checkbox"/>	Diesel <input checked="" type="checkbox"/>
Effective Distance		380
Average Train Speed		60
Engines per Train		2
Railway cars per Train		50
Average Train Operations (ATO)		3
Night Fraction of ATO		50
Railway whistles or horns?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Bolted Tracks?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Train DNL	0	52
Calculate Rail #1 DNL	52	Reset

Add Road Source

Add Rail Source

Airport Noise Level

Loud Impulse Sounds?

☐ Yes ☒ No

Combined DNL for all Road and Rail sources

64

Combined DNL including Airport

N/A

Site DNL with Loud Impulse Sound

Calculate

Reset

HUD EXCHANGE

Programs

Resources

Site ID

Sanctuary Landing Building 9 2034

Record Date

04/17/2025

User's Name

Silveston

Road # 1 Name:

Fontaine Rd

Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	475		475
Distance to Stop Sign			
Average Speed	45		45
Average Daily Trips (ADT)	18714		382
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	54	0	54
Calculate Road #1 DNL	57	Reset	

Road # 2 Name:

SC 277

Road #2

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	600		600
Distance to Stop Sign			
Average Speed	60		60
Average Daily Trips (ADT)	59176		1830
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	60	0	61
Calculate Road #2 DNL	63	Reset	

Railroad #1 Track Identifier:

CSX Transportation

Rail # 1

Train Type	Electric <input type="checkbox"/>	Diesel <input checked="" type="checkbox"/>
Effective Distance		380
Average Train Speed		60
Engines per Train		2
Railway cars per Train		50
Average Train Operations (ATO)		3
Night Fraction of ATO		50
Railway whistles or horns?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Bolted Tracks?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Train DNL	0	52
Calculate Rail #1 DNL	52	Reset

Add Road Source

Add Rail Source

Airport Noise Level

Loud Impulse Sounds?

☐ Yes ☒ No

Combined DNL for all Road and Rail sources

65

Combined DNL including Airport

N/A

Site DNL with Loud Impulse Sound

Calculate


Reset

Noise Study Report

Sanctuary Landing | Columbia, SC

April 17, 2025 | Insight Group No. 09-250108



**HUD EXCHANGE**

Programs ▾ Resources ▾

DNL Calculator

Site ID

Sanctuary Landing Playground

Record Date

04/17/2025

User's Name

Silveston

Road # 1 Name:

Fontaine Rd

Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	355		355
Distance to Stop Sign	425		425
Average Speed	45		45
Average Daily Trips (ADT)	17738		362
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	54	0	58
Calculate Road #1 DNL	60	Reset	

Road # 2 Name:

SC 277

Road #2

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	740		740
Distance to Stop Sign			
Average Speed	60		60
Average Daily Trips (ADT)	56745		1755
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	58	0	59
Calculate Road #2 DNL	62	Reset	

Railroad #1 Track Identifier:

CSX Transportation

Rail # 1

Train Type	Electric <input type="checkbox"/>	Diesel <input checked="" type="checkbox"/>
Effective Distance		270
Average Train Speed		60
Engines per Train		2
Railway cars per Train		50
Average Train Operations (ATO)		3
Night Fraction of ATO		50
Railway whistles or horns?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Bolted Tracks?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Train DNL	0	55
Calculate Rail #1 DNL	55	Reset

Add Road Source

Add Rail Source

Airport Noise Level

Loud Impulse Sounds?

☐ Yes ☒ No

Combined DNL for all Road and Rail sources

64


Combined DNL including Airport

N/A

Site DNL with Loud Impulse Sound

Calculate

Reset

**HUD EXCHANGE**

Programs ▾ Resources ▾

DNL Calculator

Site ID

Sanctuary Landing Playground 2034

Record Date

04/17/2025

User's Name

Silveston

Road # 1 Name:

Fontaine Rd

Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	355		355
Distance to Stop Sign	425		425
Average Speed	45		45
Average Daily Trips (ADT)	18714		382
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	55	0	58
Calculate Road #1 DNL	60	Reset	

Road # 2 Name:

SC 277

Road #2

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	740		740
Distance to Stop Sign			
Average Speed	60		60
Average Daily Trips (ADT)	59176		1830
Night Fraction of ADT	15		15
Road Gradient (%)			0
Vehicle DNL	59	0	59
Calculate Road #2 DNL	62	Reset	

Railroad #1 Track Identifier:

CSX Transportation

Rail # 1

Train Type	Electric <input type="checkbox"/>	Diesel <input checked="" type="checkbox"/>
Effective Distance		270
Average Train Speed		60
Engines per Train		2
Railway cars per Train		50
Average Train Operations (ATO)		3
Night Fraction of ATO		50
Railway whistles or horns?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Bolted Tracks?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Train DNL	0	55
Calculate Rail #1 DNL	55	Reset

Add Road Source

Add Rail Source

Airport Noise Level

Loud Impulse Sounds?

☐ Yes ☒ No

Combined DNL for all Road and Rail sources

65

Combined DNL including Airport

N/A

Site DNL with Loud Impulse Sound

Calculate

Reset