

145-147 Philadelphia Avenue, Egg Harbor City, NJ 08215

HUD Noise Screening Analysis

The project does not involve new stationary noise sources and the effect of 7 residential units on mobile source noise generation is negligible. The project would generate noise temporarily during construction, but no significant construction noise impacts are anticipated because of the scale and type of construction involved (e.g. construction of one 3,990 square-foot, three story building).

The following sections assess the existing noise exposure of the project sites for comparison to the HUD criterion for outdoor noise at residential buildings. The analysis is consistent with 24 CFR Part 51 and the HUD Noise Guidebook.

Airports

There are no major commercial airports in the vicinity of the project site. The Atlantic City International Airport is located approximately 6 miles to the southeast and thus would not contribute substantially to overall existing noise levels at the project site.

Railroads

New Jersey Transit's Atlantic City Line is located 1,150 feet southwest of the project site. The following inputs were developed for use in the HUD DNL calculator:

- **Average train speed- 59 mph.** Speed was calculated based on the NJTransit schedule showing a travel time of 11 minutes between the Hammonton Station and Egg Harbor City Station. The two stations are approximately 10.82 miles apart.
- **Average train operations- 25 /day (both directions).** The average train operations was determined based on the Atlantic City Line schedule which shows the following service frequency:
 - Weekday to Atlantic City: 12 trains/day
 - Weekday from Atlantic City: 13 trains/day
 - Weekend and Holiday to Atlantic City: 12 trains/day
 - Weekend and Holiday from Atlantic City: 13/day.

The average train operations calculation assumed 252 weekdays and a total 113 weekend plus holiday days. The default night fraction of 15% was used for screening purposes.

- Train horn noise was included because there is an at-grade crossing where the railroad tracks cross South Philadelphia Ave.
- It was assumed operations typically consist of one diesel locomotive and six rail cars per train.

The resulting railroad DNL estimate for the project site was 56.4 dBA, as shown in the figure below. This train-related noise was combined with roadway noise as discussed in the next section.

Railroad #1 Track Identifier:

Rail # 1		
Train Type	Electric <input type="checkbox"/>	Diesel <input checked="" type="checkbox"/>
Effective Distance	<input type="text"/>	<input type="text" value="1150"/>
Average Train Speed	<input type="text"/>	<input type="text" value="59"/>
Engines per Train	<input type="text"/>	<input type="text" value="1"/>
Railway cars per Train	<input type="text"/>	<input type="text" value="6"/>
Average Train Operations (ATO)	<input type="text"/>	<input type="text" value="25"/>
Night Fraction of ATO	<input type="text"/>	<input type="text" value="15"/>
Railway whistles or horns?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
Bolted Tracks?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>
Train DNL	<input type="text"/>	<input type="text" value="56.3711"/>
<input type="button" value="Calculate Rail #1 DNL"/>	<input type="text" value="56.3711"/>	<input type="button" value="Reset"/>

Roadway Traffic

The two primary sources of traffic noise for the project are Philadelphia Ave. (NJ 50) and White Horse Pike/ Agassiz St. (U.S. 30). NJDOT intersection turning movement counts from 2008 are available for the intersection of these two roadways south of the project site. Based on these counts, AADT for Philadelphia Ave north of White Horse Pike was 6,650. AADT on White Horse Pike east of Philadelphia Ave. was 18,140 (east side volumes were used because the volumes west of Philadelphia Ave. were lower). Vehicle classification data is not available, but for screening purposes is assumed to consist of 89% autos, 10% medium trucks, and 1% heavy trucks.

The figure below shows the input and output from HUD’s “Site DNL Calculator” for the traffic noise analysis of Philadelphia Ave. and White Horse Pike.

Road # 1 Name: Philadelphia Ave.

Road #1			
Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	50	50	50
Distance to Stop Sign			
Average Speed	30	30	30
Average Daily Trips (ADT)	5919	665	67
Night Fraction of ADT	15	15	15
Road Gradient (%)			0
Vehicle DNL	60.691	51.1968	61.586
Calculate Road #1 DNL	64.3638	Reset	

Road # 2 Name: White Horse Pike

Road #2			
Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	440	440	440
Distance to Stop Sign			
Average Speed	35	35	35
Average Daily Trips (ADT)	16145	1814	181
Night Fraction of ADT	15	15	15
Road Gradient (%)			0
Vehicle DNL	52.2206	42.7266	51.7345
Calculate Road #2 DNL	55.2028	Reset	

Combined Noise Level

Taking into account the railroad and roadway noise assessments discussed above, the predicted combined noise level at the project site is 65.4 dBA DNL, which is just over the HUD threshold for “normally unacceptable” exterior noise.

Mitigation

As discussed above, the noise screening analysis shows the 65 DNL criterion for acceptable noise would be exceeded at the project site, primarily due to traffic noise on Philadelphia Ave. The most appropriate noise mitigation in this case is to incorporate building sound insulation measures into the design of the new building. The maximum interior noise level per HUD regulation is 45 DNL. However, HUD regulations also require at least 5 dB of additional attenuation over that provided by typical construction practices if the predicted exterior sound level is above 65 dB, but not exceeding 70 dB (24 CFR 51.104).

Based on these requirements, the required Sound Transmission Class (STC) for this project is 25. During the design of the project, the project architect should use HUD's " Sound Transmission Classification Assessment Tool" to ensure the selected building wall, window and door materials meet the required 25 dB attenuation.¹ Incorporation of this mitigation measure in project specifications will ensure no significant noise impact occurs.

¹ http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/environment/stracat