NCR39566: 39 – 121 Ludlow Street, Newark, New Jersey

HUD Noise Screening Analysis

The project does not involve new stationary noise sources and the effect of a Training, Recreation, and Education Center on mobile source noise generation is negligible. The project would generate noise temporarily during demolition and 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). Construction would represent a temporary source of noise impacts for the project site and adjacent areas. Noise levels generated by heavy equipment typically range from about 65 A-weighted decibels (dBA) to about 90 dBA at a distance of 50 feet. Most heavy equipment produces noise levels of 85 dBA or less at a distance of 50 feet. Pile drivers, demolition shears, crushing/screening plants, and a few other types of equipment can produce noise levels above 90 dBA at a distance of 50 feet. Noise from construction equipment typically diminishes at about 6 dBA per doubling of distance. For example, a noise level of 85 dBA at a distance of 50 feet typically drops to 79 dBA at 100 feet and to 73 dBA at 200 feet. Construction at the project site generally would be limited to daytime hours. The project sponsor would require construction contractors to implement noise reduction measures that include maintaining proper mufflers on equipment, relocating equipment away from noise-sensitive receptors where possible, and shutting off idling equipment.

The following sections access the existing noise exposure of the project site 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

No military airfields were observed within 15 miles of the project site. Civil airports are defined as commercial service airports designated in the Federal Aviation Administration's National Plan of Integrated Airport Systems (NPIAS) (24 CFR 51.301(c)). The only New Jersey airports listed as commercial service airports in the current NPIAS are Newark Liberty International Airport in Essex and Union Counties and Atlantic City International Airport in Atlantic County. Newark Liberty International Airport is approximately 1.4 miles east of the project site. The project site is outside the 60 dB DNL noise contour of Newark Liberty International Airport. Atlantic City International Airport is located approximately 86 miles south of the project site. Therefore, in accordance with HUD guidance, no airports were included in the HUD noise assessment.

Railroads

Amtrak's Northeast Regional Line is located approximately 1,577 feet east of the project site. The following inputs were developed for use in the HUD DNL calculator:

- **Average train speed: 54 mph.** Speed was calculated based on the Amtrak Northeast Regional Line schedule showing a travel time of 16 minutes between the Newark, NJ Station and Metropark, NJ Station. The two stations are approximately 14.45 miles apart.

- **Average train operations** – 43 / day (both directions). The average train operations was determined based on the Amtrak Northeast Regional Line schedule which shows the following service frequency:
    - Weekday to New York: 22 trains/day
    - Weekday from New York: 21 trains/day
    - Weekend and Holiday to New York: 21 trains/day
    - Weekend and Holiday from New York: 22 trains/day

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

- Train horn noise was not included because there are no at-grade crossings within 3,000 feet of the project site.
- It was assumed operations typically consist of one electric locomotive and six rail cars per train.

The resulting railroad DNL estimate for the project site was 40.8 dBA, as shown in the figure below.

Railroad #1 Track Identifier: Amtrak Northeast Regional Line

Rail # 1		
Train Type	Electric ☑	Diesel ☐
Effective Distance	1577	
Average Train Speed	54	
Engines per Train	1	
Railway cars per Train	6	
Average Train Operations (ATO)	43	
Night Fraction of ATO	15	
Railway whistles or horns?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Bolted Tracks?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Train DNL	40.767	
Calculate Rail #1 DNL	40.767	Reset

Amtrak's Acela Express Line is located approximately 1,560 feet east of the project site. The following inputs were developed for use in the HUD DNL calculator:

- **Average train speed: 66 mph.** Speed was calculated based on the Amtrak Acela Express Line schedule showing a travel time of 13 minutes between the Newark, NJ Station and Metropark, NJ Station. The two stations are approximately 14.45 miles apart.

- **Average train operations** – 32 / day (both directions). The average train operations was determined based on the Amtrak Acela Express Line schedule which shows the following service frequency:
    - Weekday to New York: 16 trains/day
    - Weekday from New York: 16 trains/day
    - Weekend and Holiday to New York: 11 trains/day
    - Weekend and Holiday from New York: 12 trains/day

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

- Train horn noise was not included because there are no at-grade crossings within 3,000 feet of the project site.
- It was assumed operations typically consist of one electric locomotive and eight rail cars per train.

The resulting railroad DNL estimate for the project site was 42.3 dBA, as shown in the figure below.

Railroad #2 Track Identifier: Amtrak Acela Express

Rail # 2		
Train Type	Electric ☑	Diesel ☐
Effective Distance	1560	
Average Train Speed	66	
Engines per Train	1	
Railway cars per Train	8	
Average Train Operations (ATO)	32	
Night Fraction of ATO	15	
Railway whistles or horns?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Bolted Tracks?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Train DNL	42.2665	
Calculate Rail #2 DNL	42.2665	Reset

Amtrak's Atlantic Coast Service Line (Palmetto, Carolinian, Silver Star, and Silver Meteor trains) is located approximately 1,555 feet east of the project site. The following inputs were developed for use in the HUD DNL calculator:

- **Average train speed: 69 mph.** Speed was calculated based on the Amtrak Atlantic Coast Service Line schedule showing a travel time of 41 minutes between the Newark, NJ Station and Trenton, NJ Station. The two stations are approximately 47 miles apart.

- **Average train operations** – 8 / day (both directions). The average train operations was determined based on the Amtrak Atlantic Coast Service Line schedule which shows the following service frequency:
    - Daily to New York: 4 trains/day
    - Daily from New York: 4 trains/day

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

- Train horn noise was not included because there are no at-grade crossings within 3,000 feet of the project site.
- It was assumed operations typically consist of one electric locomotive and six rail cars per train.

The resulting railroad DNL estimate for the project site was 35.7 dBA, as shown in the figure below.

Railroad #3 Track Identifier: Amtrak Atlantic Coast Service Line

Rail # 3		
Train Type	Electric ☑	Diesel ☐
Effective Distance	1555	
Average Train Speed	69	
Engines per Train	1	
Railway cars per Train	6	
Average Train Operations (ATO)	8	
Night Fraction of ATO	15	
Railway whistles or horns?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Bolted Tracks?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Train DNL	35.6838	
Calculate Rail #3 DNL	35.6838	Reset

Amtrak's Northeast, Mid-Atlantic and Virginia Service Line (Cardinal and Crescent trains) is located approximately 1,550 feet east of the project site. The following inputs were developed for use in the HUD DNL calculator:

- **Average train speed: 69 mph.** Speed was calculated based on the Amtrak Mid-Atlantic and Virginia Service Line schedule showing a travel time of 41 minutes between the Newark, NJ Station and Trenton, NJ Station. The two stations are approximately 47 miles apart.
- **Average train operations** – 4 / day (both directions). The average train operations was determined based on the Amtrak Atlantic Coast Service Line schedule which shows the following service frequency:
    - Daily to New York: 2 trains/day

- Daily from New York: 2 trains/day

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

- Train horn noise was not included because there are no at-grade crossings within 3,000 feet of the project site.
- It was assumed operations typically consist of one electric locomotive and six rail cars per train.

The resulting railroad DNL estimate for the project site was 32.6 dBA, as shown in the figure below.

Railroad #4 Track Identifier: Amtrak Northeast, Mid-Atlantic, and Virginia Line

Rail # 4		
Train Type	Electric ☑	Diesel ☐
Effective Distance	1550	
Average Train Speed	69	
Engines per Train	1	
Railway cars per Train	6	
Average Train Operations (ATO)	4	
Night Fraction of ATO	15	
Railway whistles or horns?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Bolted Tracks?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Train DNL	32.6945	
Calculate Rail #4 DNL	32.6945	Reset

Amtrak's Ethan Allen Express and Vermonter Service Line is located approximately 1,550 feet east of the project site. The following inputs were developed for use in the HUD DNL calculator:

- **Average train speed: 74 mph.** Speed was calculated based on the Amtrak Ethan Allen Express and Vermonter Service Line schedule showing an average travel time of 39 minutes between the Newark, NJ Station and Trenton, NJ Station. The two stations are approximately 47 miles apart.
- **Average train operations** – 4 / day (both directions). The average train operations was determined based on the Amtrak Ethan Allen Express and Vermonter Service Line schedule which shows the following service frequency:
  - Daily to New York: 2 trains/day
  - Daily from New York: 2 trains/day

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

- Train horn noise was not included because there are no at-grade crossings within 3,000 feet of the project site.
- It was assumed operations typically consist of one electric locomotive and six rail cars per train.

The resulting railroad DNL estimate for the project site was 33.3 dBA, as shown in the figure below.

Railroad #5 Track Identifier: Amtrak Ethan Allen Express and Vermonter

Rail # 5		
Train Type	Electric ☑	Diesel ☐
Effective Distance	1550	
Average Train Speed	74	
Engines per Train	1	
Railway cars per Train	6	
Average Train Operations (ATO)	4	
Night Fraction of ATO	15	
Railway whistles or horns?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Bolted Tracks?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Train DNL	33.3021	
Calculate Rail #5 DNL	33.3021	Reset

Amtrak's Pennsylvanian Service Line is located approximately 1,560 feet east of the project site. The following inputs were developed for use in the HUD DNL calculator:

- **Average train speed: 81 mph.** Speed was calculated based on the Amtrak Pennsylvanian Service Line schedule showing an average travel time of 35 minutes between the Newark, NJ Station and Trenton, NJ Station. The two stations are approximately 47 miles apart.
- **Average train operations** – 2 / day (both directions). The average train operations was determined based on the Amtrak Pennsylvanian Line schedule which shows the following service frequency:
    - Daily to New York: 1 train/day
    - Daily from New York: 1 train/day

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

- Train horn noise was not included because there are no at-grade crossings within 3,000 feet of the project site.
- It was assumed operations typically consist of one electric locomotive and six rail cars per train.

The resulting railroad DNL estimate for the project site was 31.0 dBA, as shown in the figure below.

Railroad #6 Track Identifier: Amtrak Pennsylvanian

Rail # 6		
Train Type	Electric ☑	Diesel ☐
Effective Distance	1560	
Average Train Speed	81	
Engines per Train	1	
Railway cars per Train	6	
Average Train Operations (ATO)	2	
Night Fraction of ATO	15	
Railway whistles or horns?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Bolted Tracks?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Train DNL	31.035	
Calculate Rail #6 DNL	31.035	Reset

Amtrak's Keystone Service Line is located approximately 1,576 feet east of the project site. The following inputs were developed for use in the HUD DNL calculator:

- **Average train speed: 76 mph.** Speed was calculated based on the Amtrak Keystone Service Line schedule showing an average travel time of 37 minutes between the Newark, NJ Station and Trenton, NJ Station. The two stations are approximately 47 miles apart.
- **Average train operations** – 28 / day (both directions). The average train operations was determined based on the Amtrak Keystone Service Line schedule which shows the following service frequency:
    - Daily to New York: 14 trains/day
    - Daily from New York: 14 trains/day

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

- Train horn noise was not included because there are no at-grade crossings within 3,000 feet of the project site.
- It was assumed operations typically consist of one electric locomotive and six rail cars per train.

The resulting railroad DNL estimate for the project site was 41.9 dBA, as shown in the figure below.

Railroad #7 Track Identifier: Amtrak Keystone

Rail # 7		
Train Type	Electric ☑	Diesel ☐
Effective Distance	1576	
Average Train Speed	76	
Engines per Train	1	
Railway cars per Train	6	
Average Train Operations (ATO)	28	
Night Fraction of ATO	15	
Railway whistles or horns?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Bolted Tracks?	Yes: ☐ No: ☑	Yes: ☐ No: ☐
Train DNL	41.8764	
Calculate Rail #7 DNL	41.8764	Reset

NJ Transit Northeast Corridor Line is located approximately 1,550 feet east of the project site. The following inputs were developed for use in the HUD DNL calculator:

- **Average train speed: 23 mph.** Speed was calculated based on the NJ Transit Northeast Corridor schedule showing an average travel time of 5 minutes between the Newark International Airport Station and North Elizabeth, NJ Station. The two stations are approximately 1.8 miles apart.
- **Average train operations** – 199 / day (both directions). The average train operations was determined based on the NJ Transit Northeast Corridor Line schedule which shows the following service frequency:
    - Daily to New York: 97 trains/day
    - Daily from New York: 102 trains/day

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

- Train horn noise was not included because there are no at-grade crossings within 3,000 feet of the project site.
- 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 57.5 dBA, as shown in the figure below.

Railroad #8 Track Identifier: NJTransit Northeast Corridor

Rail # 8		
Train Type	Electric ☐	Diesel ☑
Effective Distance		1550
Average Train Speed		23
Engines per Train		1
Railway cars per Train		6
Average Train Operations (ATO)		199
Night Fraction of ATO		15
Railway whistles or horns?	Yes: ☐ No: ☐	Yes: ☐ No: ☑
Bolted Tracks?	Yes: ☐ No: ☐	Yes: ☐ No: ☑
Train DNL		57.527
Calculate Rail #8 DNL	57.527	Reset

Roadway Traffic

No major roadways were identified within 1,000 feet of the project site. No major roadways were observed within 1,000 feet of the project site. The largest major roadways in the vicinity of the project include Route 9, located approximately 3,570 feet east of the project, and Route 22 located approximately 3,430 feet north-northwest of the project.

Combined Noise Level

Taking into account the railroad noise assessments discussed above, the railroad noise was predicted to result in a DNL of 57.9 dBA, which is within the “acceptable” range per HUD noise criteria.

Mitigation

As discussed above, the noise screening analysis shows that the 65 DNL criterion for acceptable noise would not be exceeded at the project site. Therefore, no significant impacts would occur and no mitigation is required.