

**Appendix F**  
**Noise Assessment Survey**  
**Department of Housing and Urban Development**  
**Noise Assessment Guidelines (24 CFR 51)**

**Overview**

The Office of Facility Planning and Control (OFPC) proposed the development of the University Medical Center (UMC) campus near the New Orleans Medical District bounded by Tulane Avenue, Canal Street, South Claiborne Avenue and South Galvez Street. The survey was conducted in January 2008.

**Noise Analysis**

The noise analysis evaluates the site's exposure to three major sources of noise: aircraft, roadways and railways. After the three factors are combined, the noise environment at the site will come under one of the following three categories:

**Acceptable** – DNL not exceeding 65 decibels

**Normally Unacceptable** – DNL above the 65 but not exceeding 75 decibels

**Unacceptable** – DNL above 75 decibels

Noise levels that are Normally Unacceptable or greater will require the implementation of attenuation measures such as shielding affected buildings with barriers, the installation of noise insulating materials, or reconfiguring buildings away from the noise source. USRM has used the most current information available, including traffic counts, noise contour maps, and other data collected in conjunction with this assessment.

The NAG specifies that there are three main sources of noise to any urban environment. Each is addressed below:

1. Aircraft – All military and civil airports within 15 miles of the site must be considered. There are three airports within 15 miles of the subject property. The aggregate DNL value for all three airports is **55** decibels.
  - New Orleans Lakefront Airport (*New Orleans, Louisiana*) – This airport handles almost exclusively private traffic. It is located approximately six (6) miles from the subject property. Its DNL value is lower than any measured by Figure 3. However, through the regression analysis, the linear equation used by HUD determined a DNL value of **55**.
  - Louis Armstrong International Airport (*Kenner, Louisiana*) - This airport is located approximately eleven (11) miles from the subject property. The derived equation was used to find a DNL value of **55** for New Orleans' main commercial airport.

**Appendix F**  
**Noise Assessment Survey**  
**Department of Housing and Urban Development**  
**Noise Assessment Guidelines (24 CFR 51)**

- Naval Air Station, Joint Reserve Base at Alvin Callender Field (*Belle Chasse, Louisiana*) – This military airfield lies approximately nine (9) miles from the subject property. Again, the noise from the airport is not measurable by Figure 3. The number of operations and aircraft types was not available. Since the distance is comparable to other airports in the area, a worse case scenario DNL value of **55** was used.
2. Roadways – One major roadway within 1,000 feet of the site was evaluated to predict future noise conditions. Data was collected from governmental agencies, employees in the field, and other traffic analysis studies. The distribution of current and future traffic flows collected by the Louisiana Department of Transportation and Development (LDOTD) “Classification Counts” for Tulane Avenue at South Roman Street. The DOTD collection station on the project boundary provided ADT counts for 2004 and 2008. The 2004 ADT counts represent future traffic conditions prior to Hurricane Katrina, while the 2008 data represents current conditions.

The two years in comparison, assume a nighttime traffic flow of 15 percent in accordance with NAG. The average traffic speeds of 35 mph was used for automobiles, medium and heavy trucks; therefore, the average traffic speed adjustment factor of 0.40 in Table 4 was applied to automobiles and a factor of 0.81 in Table 7 was applied to heavy trucks on Worksheet C. A nighttime fraction of 0.15 with an adjustment factor of 1.00 was applied to both the automobile and heavy truck worksheet, which yielded no change in the overall adjustment. The aggregate combined DNL for automobiles, medium and heavy trucks for future noise conditions along Tulane Avenue at an effective distance of 60 feet from the NAL was calculated to be at a normally unacceptable level of **70.8** decibels.

3. Railways – When evaluating a site’s exposure to railway noise, all rapid lines and railroads within 3,000 feet of the site must be considered. One freight railroad, the Illinois Central Railroad, is located approximately 2,712 feet west of the subject property. The Canal Streetcar and the Amtrak Passenger light rails were not considered as a major source of railway noise. The DNL for the freight railroad is <55; therefore not a major contributor of noise. A DNL value of <**55** decibels was used for railway sources.

**Conclusions**

The evaluation of the three main contributors to noise to the proposed development of LSU AMC has been found to have a Normally Unacceptable Level of noise at **71.0** DNL.

**Terms**

Definition and explanation of commonly used terms and acronyms

**Appendix F**  
**Noise Assessment Survey**  
**Department of Housing and Urban Development**  
**Noise Assessment Guidelines (24 CFR 51)**

- dB – Decibel, unit used to measure sound
- DNL – Outdoor day-night average sound level in decibels; this value is a function of noise generated and distance from an NAL to that noise
- NAL – Noise Assessment Location, representative locations around a site where noise is expected
- NEF – Noise Exposure Forecast
- Nighttime – Between the hours of 10pm and 7am

**References**

U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Noise Assessment Guidelines. <http://www.hud.gov/offices/cpd/energyenviron/environment/resources/guidebooks/noise/chapter5.pdf>.

**Appendix F**  
**Noise Assessment Survey**  
**Department of Housing and Urban Development**  
**Noise Assessment Guidelines (24 CFR 51)**

**Worksheet A, Site Evaluation (page 26 of Noise Assessment Guidelines)**

<b>Necessary Information</b>			
Site Location	The subject property is bounded by Canal Street, Tulane Avenue, South Galvez Street and South Claiborne Avenue, Orleans Parish, Louisiana		
Program			
Project Name	LSU Academic Medical Center		
Locality			
File Number			
Sponsor's Name	Office of Facility Planning and Controls		
Sponsor's Phone			
Street Address	Claiborne Building, Suite 7-270 1201 North 3 <sup>rd</sup> Street Baton Rouge, Louisiana 70802		
	<b>Acceptability Category</b>	<b>DNL</b>	<b>Predicted for</b>
1. Roadway Noise	Normally Unacceptable	70.8	Future
2. Aircraft Noise	Acceptable	55	Present
3. Railway Noise	Acceptable	<55	Present
	<b>Final Site Evaluation</b>	71.0	

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_

**Appendix F**  
**Noise Assessment Survey**  
**Department of Housing and Urban Development**  
**Noise Assessment Guidelines (24 CFR 51)**

**Worksheet B, Aircraft Noise (from page 27 of Noise Assessment Guidelines)**

Necessary Information			
Airports (within 15 miles)	Lakefront Airport	Louis Armstrong International	Naval Air Station
1. Are DNL, NEF, or CNR Contours Available?	Yes	Yes	Yes
2. Any supersonic aircraft operations?	No	No	Yes
3. Estimating approximate contours from Figure 3			
a. number of nighttime jet operations	7	71	n/a
b. number of daytime jet operations	212	241	n/a
c. effective number of operations (10a+b)	282	951	n/a
d. distance A for 65 dB			
70 dB			
75 dB			
e. distance B for 65 dB			
70 dB			
75 dB			
4. Estimating DNL from Table 2			
a. distance (in miles) from 65 dB contour to flight plan (D1)	.07	.03	
b. distance from NAL to flight plan (D2*)	3.88	9.73	
c. D2 divided by D1	55.43	324.33	
d. DNL**	<55	<55	55
5. Operations projected for what year	2009	2009	2009
<b>6. Total DNL for all airports</b>		<b>55</b>	

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\*Note: These measurements were made relative to the NAL for the specific purpose of this noise assessment survey.  
 \*\*Note: Table 2 does not give a DNL level for values where D2 divided by D1 is a value greater than 3.16, an equation derived to find the DNL values.

**Appendix F**  
**Noise Assessment Survey**  
**Department of Housing and Urban Development**  
**Noise Assessment Guidelines (24 CFR 51)**

Worksheet C, Roadway Noise (from page 28 of Noise Assessment Guidelines)

<b>Necessary Information</b>		
Major Roads (within 1,000 feet)	YR 2008 ADT - Tulane Avenue	YR 2004 ADT - Tulane Avenue
1. Distance in feet from the NAL to the edge of the road		
a. nearest lane	30	30
b. farthest lane	90	90
c. average (effective distance)	60	60
2. Distance to stop sign	n/a	n/a
3. Road gradient in percent	0	0
4. Average speed in mph		
a. automobiles	35	35
b. heavy trucks – uphill	n/a	n/a
c. heavy trucks – downhill	n/a	n/a
5. 24 hour average number of automobiles and trucks in both directions (ADT)	17,467*	36,261*
a. automobiles	16,594	34,448
b. medium trucks	699	1,450
c. effective ADT (a+(10b))	23,584	48,948
6. 24 hour average number of heavy trucks		
a. uphill	n/a	n/a
b. downhill	n/a	n/a
c. total	174	363
7. Fraction of nighttime traffic (10pm to 7am)	15%	15%
8. Traffic projected for what year?	Present	Future

<b>Adjustments for Automobile Traffic</b>								
	9 Stop and go Table 3	10 Averag e speed Table 4	11 Nighttime Table 5	12 Auto ADT (line 5c)	13 Adjuste d Auto ADT	14 DNL Workchar t 1	15 Barrier Attenuation	16 Partia l DNL
Current	n/a	0.40	1.0	23,584	9,434	67	n/a	67
Future	n/a	0.40	1.0	48,948	19,579	70	n/a	70

<b>Adjustments for Heavy Truck Traffic</b>											
	17 Gradient Table 6	18 Averag e Speed Table 7	19 Truck ADT/2	20	21	22 Stop and go Table 8	23 Nighttime Table 5	24 Adjusted Truck ADT	25 DNL Workchar t 2	26 Barrier Attenuation	27 Partial DNL
Current	n/a	0.81	87		70	n/a	1.0	70	62	n/a	62
Future	n/a	0.81	182		147	n/a	1.0	147	63	n/a	63

<b>Total Automobile and Heavy Truck DNL</b>	
Current Level Using 2008 ADT	68.2
Future Level Using 2004 ADT	70.8

**Appendix F**  
**Noise Assessment Survey**  
**Department of Housing and Urban Development**  
**Noise Assessment Guidelines (24 CFR 51)**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\*Note: ADT based on 2004 and 2008 data collected by the Louisiana Department of Transportation and Development.

**Worksheet D, Railway Noise (from page 30 of Noise Assessment Guidelines)**

<b>Necessary Information</b>	
Railroads (within 3,000 feet of the site)	Illinois Central Railroad
1. Distance in feet from the NAL to the railway track	2,712 feet
2. Number of trains in 24 hours	6
a. Diesel	6
b. Electrified	0
3. Fraction of operations occurring at night (10pm to 7am)	0.15
4. Number of diesel locomotives per train	2
5. Number of rail cars per train	50
a. Diesel trains	8
b. Electrified trains	0
6. Average train speed	25
7. Is track welded or bolted?	Welded
8. Are whistles or horns required for grade crossings?	No

<b>Adjustments for Diesel Locomotives</b>									
	9 (No. of locomotives )/2	10 Average speed	11 Horns* (Enter 10)	12 Nighttime Table 5	13 No. of trains	14 Adj. No. of Opns.	15 DNL Workchart 3	16 Barrier Attn.	17 Partia 1 DNL
Illinois Central	1	1.25	n/a	1	6	7.5	<55	n/a	<55

<b>Adjustments for Railway Cars or Rapid Transit Lines</b>									
	18 (No. of cars)/50	19 Average speed Table 10	20 Bolted Rails (enter 4)	21 Nighttime Table 5	22 No. of trains	23 Adj. No. of Opns.	24 DNL Workchart 4	25 Barrier Attn.	26 Partia 1 DNL
Illinois Central	1	0.72	n/a	1	6.0	4.32	<55	0	<55

**Combined Locomotive and Railway Car DNL**

**Appendix F**  
**Noise Assessment Survey**  
**Department of Housing and Urban Development**  
**Noise Assessment Guidelines (24 CFR 51)**

<b>Illinois Central</b>	<b>&lt;55</b>
<b>Total DNL for all Railways</b>	<b>&lt;55</b>

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_

\*Note: The horn adjustment is used only when the NAL is near a grade crossing requiring prolonged use of the train's horn or whistle.