STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:
APPLICATION OF NEW CINGULAR WIRELESS PCS, LLC (AT&T) FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF A TELECOMMUNICATIONS TOWER FACILITY AT 522 COLEBROOK ROAD IN THE TOWN OF COLEBROOK

DOCKET NO. 440

October 17, 2013

NEW CINGULAR WIRELESS, PCS LLC (AT&T) RESPONSES TO
CONNECTICUT SITING COUNCIL PRE-HEARING QUESTIONS SET II

Q41. Provide the sources of information for the noise level calculations and the noise level chart behind Tab 4 of the applicant's response to interrogatories dated October 3, 2013.

A41. Included in Attachment 1 are updated noise level calculations for the estimated cumulative noise level for the emergency back-up generator and AC units at the southern property line. Source information is provided in the column to the right of the calculations. A copy of the noise level chart provided in response to interrogatory 26 is also included in Attachment 1. This chart is available at noisehelp.com. The updated calculation indicates that the cumulative noise level at the closest property line is the level of conversational speech.

Q42. Are two air conditioning units (AC units) proposed for reliability reasons in the event that one fails? Would both units typically run at the same time because they would share the load, or would one unit run normally and the second would only operate as needed during hot weather?

A42. Two air conditioning units are provided in every equipment shelter. Typically, only one unit operates to control the temperature in the shelter. The second unit may operate in conjunction with the first unit during extreme heat situations.

Q43. What is the cumulative noise level at the nearest property line of both AC units operating simultaneously? (In other words, repeat the calculation already performed taking into account only air conditioning and neglecting the backup generator.) How often would both AC units operate simultaneously?

A43. The southern property line is the nearest property line to the equipment compound. The estimated calculated cumulative noise of both AC units at the southern property line is approximately 59.77dbA. Included in attachment 2 is the anticipated noise level

calculation. As noted in response number 42 above, both AC units typically do not operate simultaneously.

Q44. Would the cumulative noise level of both AC units operating simultaneously comply with the state noise control regulations?

A44. As shown in the calculations provided in Attachment 2, the cumulative noise level of both AC units operating simultaneously would be higher than the day and night state noise control regulations.

Q45. What noise attenuation methods are available to ensure the cumulative noise levels of both AC units operating simultaneously would comply with the state noise control regulations?

A45. A wood fence lined with a sound blanket along the fence that faces the southern property boundary can be used to reduce further the noise levels at the closest property boundary for those times when both AC units operate simultaneously.

Q46. Reference the responses to questions 12 and 13 of the applicant's response to the first set of interrogatories dated October 3, 2013. Are all of the streets listed located in Colebrook? Would the proposed tower provide any coverage to the gaps identified on Moses Road or Wolfords Hill Road?

A46. The vast majority of road coverage identified in AT&T's responses to interrogatories 12 and 13 is in Colebrook with some coverage in Norfolk and Winchester. The proposed Facility will not provide any new in-vehicle or in-building service to Moses Road or Wolfords Hill Road.

Q47. Reference the response to question number 4 of the applicant's response to the first set of interrogatories dated October 3, 2013. Provide the approximate longitude and latitude coordinates of the center of the search ring.

A47. The approximate longitude and latitude coordinates of the center of the search ring included in Attachment 1 of AT&T's response to interrogatory number 4 are:

41^0-59'-3'N and 73^0-5'-32"W

Q48. Provide the approximate distance (in feet) and direction from the proposed tower to the existing home located on the subject property.

A48. The existing home on the subject site is located approximately 1,600' to the west.

CERTIFICATE OF SERVICE

I hereby certify that on this day, an original and fifteen copies of the foregoing was sent electronically and by overnight mail to the Connecticut Siting Council and to:

Thomas D. McKeon
First Selectman
Town of Colebrook
P.O. Box 5
Colebrook, CT 06021
860-379-3359
tmckeon@colebrooktownhall.org

Dated: October 17, 2013

Lucia Chiocchio

cc: Michele Briggs, AT&T
David Vivian
Tony Wells
Martin Lavin
Mike Libertine
Dean Gustafson
Paul Lusitani
Christopher B. Fisher, Esq.

ATTACHMENT 1

By:	PAL		Project No.:	18301.1025.43000		
Project Name:	AT&T Colebrook		Sheet:	1	of	1
Project Location:	Colebrook, CT		Date:	October 14, 2013		
Subject:	NOISE LEVEL AT PROPERTY LINE BASED ON TWO AC UNITS AND GENERATOR					

Calculation to Determine Noise Level At Nearest Property Line:

Data:

Equipment:

	Item:	Noise Level (dbA)	Distance to Initial Noise Level, D_1 (ft)	Distance to Property Line, D_2 (ft)
Noise Source 1:	Air Conditioning Unit 1	73	23	118
Noise Source 2:	Air Conditioning Unit 2	73	23	122
Noise Source 3:	Generator	71	23	114

Source Documentation:
AC Unit Specifications
AC Unit Specifications
Generator Specifications

118
122
114

Length of Vegetation Buffer Between Noise Source and Property Line =	63	ft
Tower Facility Class (A-Residential, B-Commercial, C-Industrial) =	B	
Adjacent Property Class =	A	

Drop in Noise Level Based on Distance:

Drop in Noise Level = $20 \times \log_{10} (D_1/D_2)$ — mcsquared.com

D_1 = Distance 1

D_2 = Disatnce 2

	Drop in Noise Level (dbA)	Noise Level at D_2 (dbA)
Noise Source 1:	-14.20	58.80
Noise Source 2:	-14.49	58.51
Noise Source 3:	-13.90	57.10

Alternatively, everytime the distance from the noise source is doubled, the level drops by 6dbA. — mcsquared.com

Cumulative Noise Level at D_2:

When adding noise levels, the following guidelines will be followed:

$L_{Total} = 10 \log_{10} (\Sigma 10^{Li/10})$ — OSHA.gov Noise and Hearing Appendix I

L_{Total} = Total Noise Level

Li = Noise Level of Each Piece of Equipment

L_{Total} No Tree Buffer=	**62.97**	**dbA**

Alternatively, the following procedure can be used to add sound levels. Sound levels must be added in pairs of two until a final noise level is achieved. — OSHA.gov Noise and Hearing Appendix I

3 db(A) if level differs by 0 to 1 db(A)
2 db(A) if level differs by 2 to 3 db(A)
1 db(A) if level differs by 4 to 9 db(A)
0 db(A) if level differs by 10db(A) or more

This procedure is not utilized but it yields the same result.

Drop in Noise Level at D_2 Due to Tree Buffer: — fhwa.dot.gov Noise Compatible Planning Federal Approach for Audible Landscape

Tree Buffer: 3 to 5 dbA drop per every 100 feet of vegetation

Be conservative and use a drop of	3	dbA per 100 ft of vegetation
Drop due to vegetation =	-1.89	dbA

L_{Total} Including Tree Buffer =	**61.08**	**dbA**

Noise Level Chart

A noise level chart showing examples of sounds with dB levels ranging from 0 to 180 decibels.

dBA	Example	Home & Yard Appliances	Workshop & Construction
0	healthy hearing threshold		
10	a pin dropping		
20	rustling leaves		
30	whisper		
40	babbling brook	computer	
50	light traffic	refrigerator	
60	conversational speech	air conditioner	
70	shower	dishwasher	
75	toilet flushing	vacuum cleaner	
80	alarm clock	garbage disposal	
85	passing diesel truck	snow blower	
90	squeeze toy	lawn mower	arc welder
95	inside subway car	food processor	belt sander
100	motorcycle (riding)		handheld drill
105	sporting event		table saw
110	rock band		jackhammer
115	emergency vehicle siren		riveter
120	thunderclap		oxygen torch
125	balloon popping		
130	peak stadium crowd noise		
135	air raid siren		
140	jet engine at takeoff		
145	firecracker		
150	fighter jet launch		
155	cap gun		
160	shotgun		
165	.357 magnum revolver		
170	safety airbag		

175	howitzer cannon		
180	rocket launch		
...			
194	sound waves become shock waves		

Most noise levels are given in dBA, which are decibels adjusted to reflect the ear's response to different frequencies of sound. Sudden, brief impulse sounds, like many of those shown at 120 dB or greater, are often given in dB (no adjustment).

ATTACHMENT 2

By:	PAL		Project No.:	18301.1025.43000		
Project Name:	AT&T Colebrook		Sheet:	1	of	2
Project Location:	Colebrook, CT		Date:	October 14, 2013		
Subject:	NOISE LEVEL AT PROPERTY LINE BASED ON TWO AC UNITS					

Calculation to Determine Noise Level At Nearest Property Line:

118
122
114

Source Documentation:

Data:

Equipment:

	Item:	Noise Level (dbA)	Distance to Initial Noise Level, D_1 (ft)	Distance to Property Line, D_2 (ft)	
Noise Source 1:	Air Conditioning Unit 1	73	23	118	AC Unit Specifications
Noise Source 2:	Air Conditioning Unit 2	73	23	122	AC Unit Specifications
Noise Source 3:	None	0	0	0	

Length of Vegetation Buffer Between Noise Source and Property Line =	63	ft
Tower Facility Class (A-Residential, B-Commercial, C-Industrial) =	B	
Adjacent Property Class =	A	

Drop in Noise Level Based on Distance:

Drop in Noise Level = 20 x $\log_{10}$ (D_1/D_2) — mcsquared.com

D_1 = Distance 1

D_2 = Disatnce 2

	Drop in Noise Level (dbA)	Noise Level at D_2 (dbA)
Noise Source 1:	-14.20	58.80
Noise Source 2:	-14.49	58.51
Noise Source 3:	0.00	0.00

Alternatively, everytime the distance from the noise source is doubled, the level drops by 6dbA. — mcsquared.com

Cumulative Noise Level at D_2:

When adding noise levels, the following guidelines will be followed:

$L_{Total} = 10 \log_{10} (\Sigma 10^{Li/10})$ — OSHA.gov Noise and Hearing Appendix I

L_{Total} = Total Noise Level

Li = Noise Level of Each Piece of Equipment

L_{Total} No Tree Buffer=	**61.66**	**dbA**

Alternatively, the following procedure can be used to add sound levels. Sound levels must be added in pairs of two until a final noise level is achieved. — OSHA.gov Noise and Hearing Appendix I

3 db(A) if level differs by 0 to 1 db(A)
2 db(A) if level differs by 2 to 3 db(A)
1 db(A) if level differs by 4 to 9 db(A)
0 db(A) if level differs by 10db(A) or more

This procedure is not utilized but it yields the same result.

Drop in Noise Level at D_2 Due to Tree Buffer: — fhwa.dot.gov Noise Compatible Planning Federal Approach for Audible Landscape

Tree Buffer: 3 to 5 dbA drop per every 100 feet of vegetation

Be conservative and use a drop of	3	dbA per 100 ft of vegetation
Drop due to vegetation =	-1.89	dbA

L_{Total} Including Tree Buffer =	**59.77**	**dbA**

By:	**PAL**		**Project No.:**	**18301.1025.43000**	
Project Name:	**AT&T Colebrook**		**Sheet:**	**2**	**of** **2**
Project Location:	**Colebrook, CT**		**Date:**	**October 14, 2013**	
Subject:	**NOISE LEVEL AT PROPERTY LINE BASED ON TWO AC UNITS**				

Check if Noise Level at D, Is Within State Regulations:

			C (dbA)	B (dbA)	A Day (dbA)	A Night (dbA)
Class	C	(industrial) Emitter to	70	66	61	51
Class	B	(commercial) Emitter to	62	62	55	45
Class	A	(residential) Emitter to	62	55	55	45

	Limit (dbA)	Actual (dbA)	Difference	Complies?
Day	55	59.77	**4.77**	**NO**
Night	45	59.77	**14.77**	**NO**

PROVIDE NOISE BARRIER TO REDUCE NOISE LEVELS

CT DEEP Noise Regulations 22a-69-1 through 22a-69-7