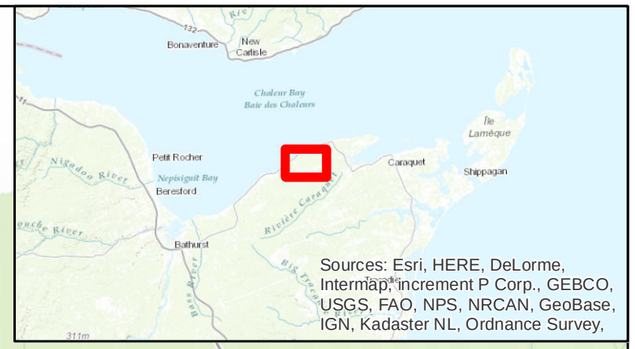
APPENDIX D. NOISE IMPACT STUDY

Data Sources:
Canada-CanVec, GeoNB



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FA
METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contrib

Legend

Receptor Sites (selected)

Layout 12.11.2018

Turbine Site

Content:
Receptor Sites

Project:
New Brunswick - Pokeshaw

Figure No.:1

IFE Project Management Canada Inc.
5657 Spring Garden Road, Suite 700
Halifax, Nova Scotia B3J 3R4 Canada

phone 902-482-1807

Size:	Scale:	create date:	change date:	created by:
DIN A3	1:25000	20.04.2016	06.02.2019	Gautier

NAD 1983 CSRS New Brunswick Stereographic

Y:\ArcGIS\10_Canada\NewBrunswick\Pokeshaw\Pokeshaw_EIA_2018.mxd

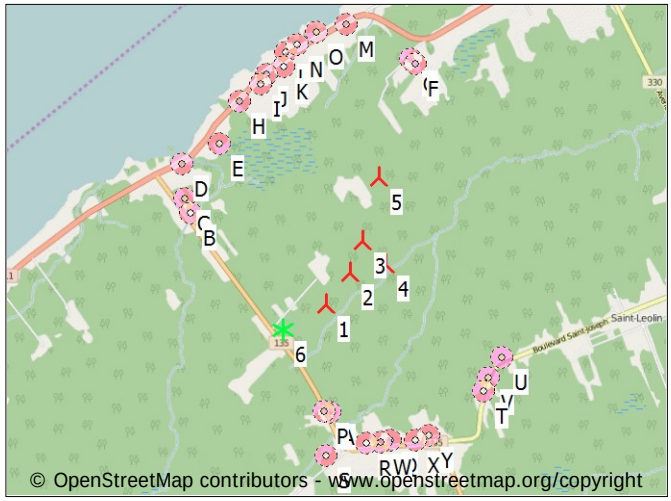
Project:
Pokeshaw

Licensed user:
IFE Eriksen AG
Industriestr. 5
DE-26122 Oldenburg
+49 (0) 441 92561 13
Gautier / gautier@ife-eriksen.de
Calculated:
03.06.2019 15:47/3.3.247

DECIBEL - Main Result

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)

Noise calculation model:
ISO 9613-2 General
Wind speed (in 10 m height):
4,0 m/s - 12,0 m/s, step 1,0 m/s
Ground attenuation:
None
Meteorological coefficient, C0:
0,0 dB
Type of demand in calculation:
1: WTG noise is compared to demand (DK, DE, SE, NL etc.)
Noise values in calculation:
All noise values are mean values (Lwa) (Normal)
Pure tones:
Fixed penalty added to source noise of WTGs with pure tones
User: 0,0 dB(A)
Height above ground level, when no value in NSA object:
1,5 m; Don't allow override of model height with height from NSA object
Uncertainty margin:
0,0 dB; Uncertainty margin in model has priority
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0,0 dB(A)



Scale 1:100.000

New WTG Existing WTG Noise sensitive area

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Noise data Creator	Name	First wind speed	LwaRef	Last wind speed	LwaRef	Pure tones
			[m]					[kW]	[m]	[m]			[m/s]	[dB(A)]	[m/s]	[dB(A)]	
1	2.595.332	7.642.010	36,2	ENERCON E-126 EP3 4000 12...	Yes	ENERCON	E-126 EP3-4.000	4.000	127,0	132,0	EMD	Level 0 - OM 0s - 4000 kW	4,0	96,3	12,0	107,1	No
2	2.595.650	7.642.430	31,8	ENERCON E-126 EP3 4000 12...	Yes	ENERCON	E-126 EP3-4.000	4.000	127,0	132,0	EMD	Level 0 - OM 0s - 4000 kW	4,0	96,3	12,0	107,1	No
3	2.595.814	7.642.857	28,0	ENERCON E-126 EP3 4000 12...	Yes	ENERCON	E-126 EP3-4.000	4.000	127,0	132,0	EMD	Level 0 - OM 0s - 4000 kW	4,0	96,3	12,0	107,1	No
4	2.596.114	7.642.559	27,8	ENERCON E-126 EP3 4000 12...	Yes	ENERCON	E-126 EP3-4.000	4.000	127,0	132,0	EMD	Level 0 - OM 0s - 4000 kW	4,0	96,3	12,0	107,1	No
5	2.596.009	7.643.700	21,9	ENERCON E-126 EP3 4000 12...	Yes	ENERCON	E-126 EP3-4.000	4.000	127,0	132,0	EMD	Level 0 - OM 0s - 4000 kW	4,0	96,3	12,0	107,1	No
6	2.594.764	7.641.669	40,6	ABC Substation 20MW 1-1 1.0...	No	ABC	Substation 20MW-1/1	1	1,0	4,0	USER	Noise (0)	4,0	89,0	12,0	89,0	No g

g) Data calculated from data for other wind speed (uncertain)

Calculation Results

Sound level

Noise sensitive area No.	Name	Easting	Northing	Z [m]	Imission height [m]	Demands Min Noise [dB(A)]	Sound level Max From WTGs [dB(A)]	Demands fulfilled ? Noise
A	Noise sensitive point: User defined (538)	2.595.416	7.640.587	42,9	1,5	40,0	36,7	Yes
B	Noise sensitive point: User defined (539)	2.593.521	7.643.184	14,5	1,5	40,0	34,1	Yes
C	Noise sensitive point: User defined (540)	2.593.442	7.643.379	14,2	1,5	40,0	33,4	Yes
D	Noise sensitive point: User defined (541)	2.593.399	7.643.833	14,6	1,5	40,0	32,4	Yes
E	Noise sensitive point: User defined (542)	2.593.892	7.644.107	13,9	1,5	40,0	33,9	Yes
F	Noise sensitive point: User defined (543)	2.596.479	7.645.206	23,0	1,5	40,0	34,6	Yes
G	Noise sensitive point: User defined (544)	2.596.410	7.645.275	23,0	1,5	40,0	34,3	Yes
H	Noise sensitive point: User defined (545)	2.594.150	7.644.677	15,9	1,5	40,0	33,2	Yes
I	Noise sensitive point: User defined (546)	2.594.431	7.644.910	18,4	1,5	40,0	33,3	Yes
J	Noise sensitive point: User defined (547)	2.594.500	7.645.032	18,0	1,5	40,0	33,0	Yes
K	Noise sensitive point: User defined (548)	2.594.722	7.645.143	16,0	1,5	40,0	33,2	Yes
L	Noise sensitive point: User defined (549)	2.594.748	7.645.333	17,0	1,5	40,0	32,4	Yes
M	Noise sensitive point: User defined (550)	2.595.553	7.645.714	12,5	1,5	40,0	31,9	Yes
N	Noise sensitive point: User defined (551)	2.594.896	7.645.439	14,7	1,5	40,0	32,2	Yes
O	Noise sensitive point: User defined (552)	2.595.150	7.645.603	12,0	1,5	40,0	31,9	Yes
P	Noise sensitive point: User defined (553)	2.595.328	7.640.591	43,0	1,5	40,0	36,7	Yes
Q	Noise sensitive point: User defined (554)	2.596.223	7.640.221	41,0	1,5	40,0	33,9	Yes
R	Noise sensitive point: User defined (555)	2.595.903	7.640.188	42,1	1,5	40,0	34,1	Yes
S	Noise sensitive point: User defined (556)	2.595.373	7.640.008	43,0	1,5	40,0	33,2	Yes
T	Noise sensitive point: User defined (557)	2.597.447	7.640.900	37,0	1,5	40,0	33,7	Yes
U	Noise sensitive point: User defined (558)	2.597.680	7.641.345	34,0	1,5	40,0	34,3	Yes
V	Noise sensitive point: User defined (559)	2.597.511	7.641.075	36,0	1,5	40,0	34,1	Yes
W	Noise sensitive point: User defined (560)	2.596.096	7.640.197	40,7	1,5	40,0	34,0	Yes
X	Noise sensitive point: User defined (561)	2.596.551	7.640.235	43,1	1,5	40,0	33,4	Yes
Y	Noise sensitive point: User defined (562)	2.596.728	7.640.297	41,1	1,5	40,0	33,3	Yes

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IFE Eriksen AG
Industriestr. 5
DE-26122 Oldenburg
+49 (0) 441 92561 13
Gautier / gautier@ife-eriksen.de
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DECIBEL - Main Result

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)

Distances (m)

	WTG					
NSA	1	2	3	4	5	6
A	1425	1858	2304	2092	3168	1263
B	2158	2258	2316	2667	2541	1959
C	2333	2403	2428	2795	2587	2161
D	2657	2652	2604	2999	2613	2558
E	2543	2429	2292	2708	2155	2589
F	3395	2897	2441	2672	1577	3930
G	3438	2944	2490	2732	1625	3963
H	2917	2701	2466	2888	2100	3070
I	3036	2763	2475	2891	1988	3258
J	3134	2844	2541	2953	2012	3373
K	3191	2867	2533	2935	1933	3474
L	3373	3039	2695	3092	2063	3663
M	3710	3285	2868	3204	2065	4121
N	3456	3102	2740	3126	2064	3772
O	3597	3212	2825	3193	2088	3952
P	1419	1867	2317	2119	3182	1216
Q	1998	2282	2667	2340	3485	2055
R	1909	2256	2670	2380	3513	1868
S	2002	2437	2882	2656	3746	1769
T	2388	2360	2548	2128	3147	2791
U	2440	2301	2401	1981	2887	2933
V	2371	2302	2460	2038	3024	2810
W	1967	2277	2675	2362	3504	1985
X	2153	2372	2723	2364	3507	2291
Y	2209	2390	2718	2343	3478	2395

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Industriestr. 5
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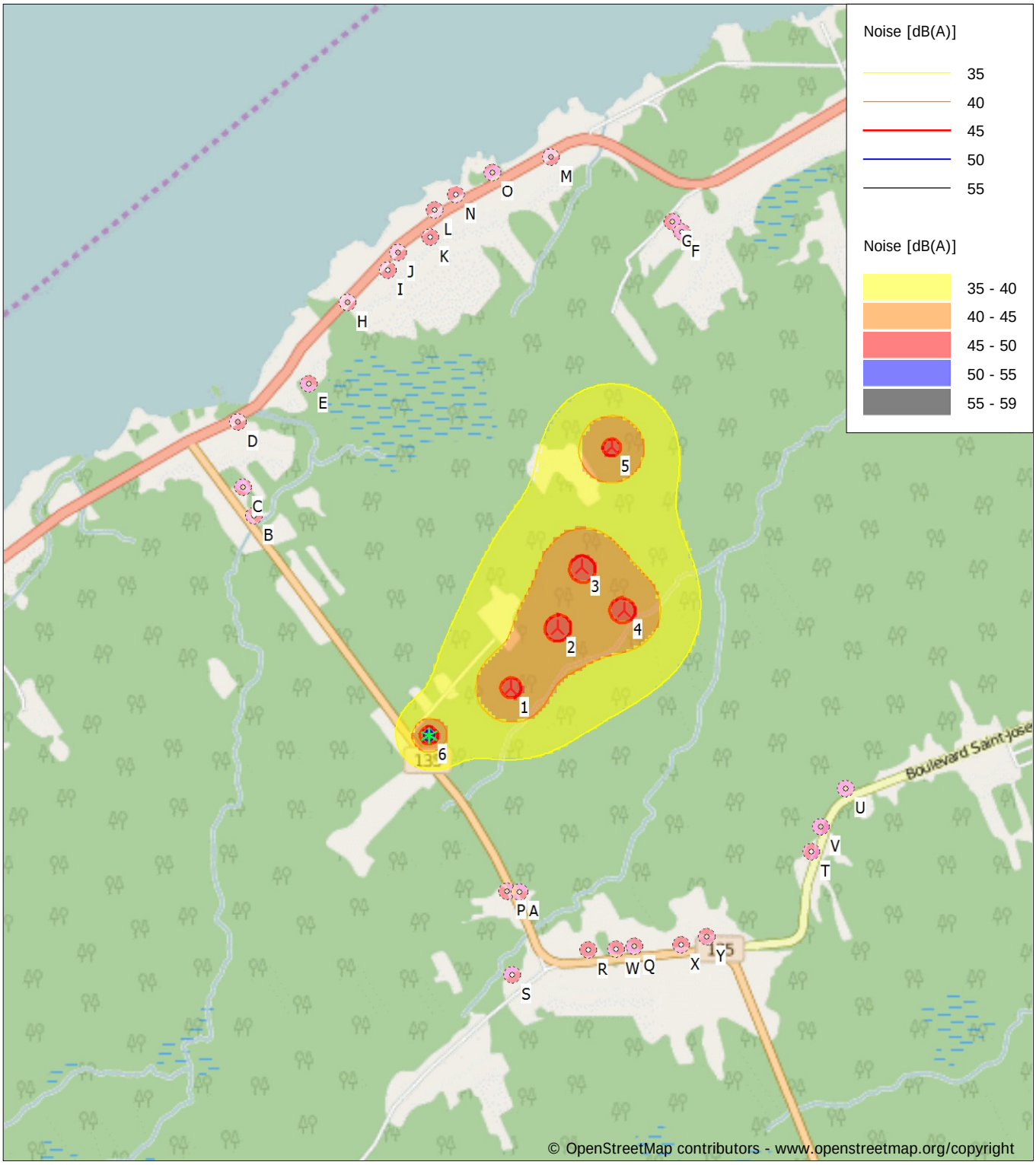
DECIBEL - Map 4,0 m/s

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)



0 500 1000 1500 2000 m

Map: Open Street Map 001 , Print scale 1:40.000, Map center CA New Brunswick NAD83-NAD83 (US+CA) East: 2.595.472 North: 7.642.861

New WTG Existing WTG Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 4,0 m/s
Height above sea level from active line object

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IFE Eriksen AG
Industriestr. 5
DE-26122 Oldenburg
+49 (0) 441 92561 13
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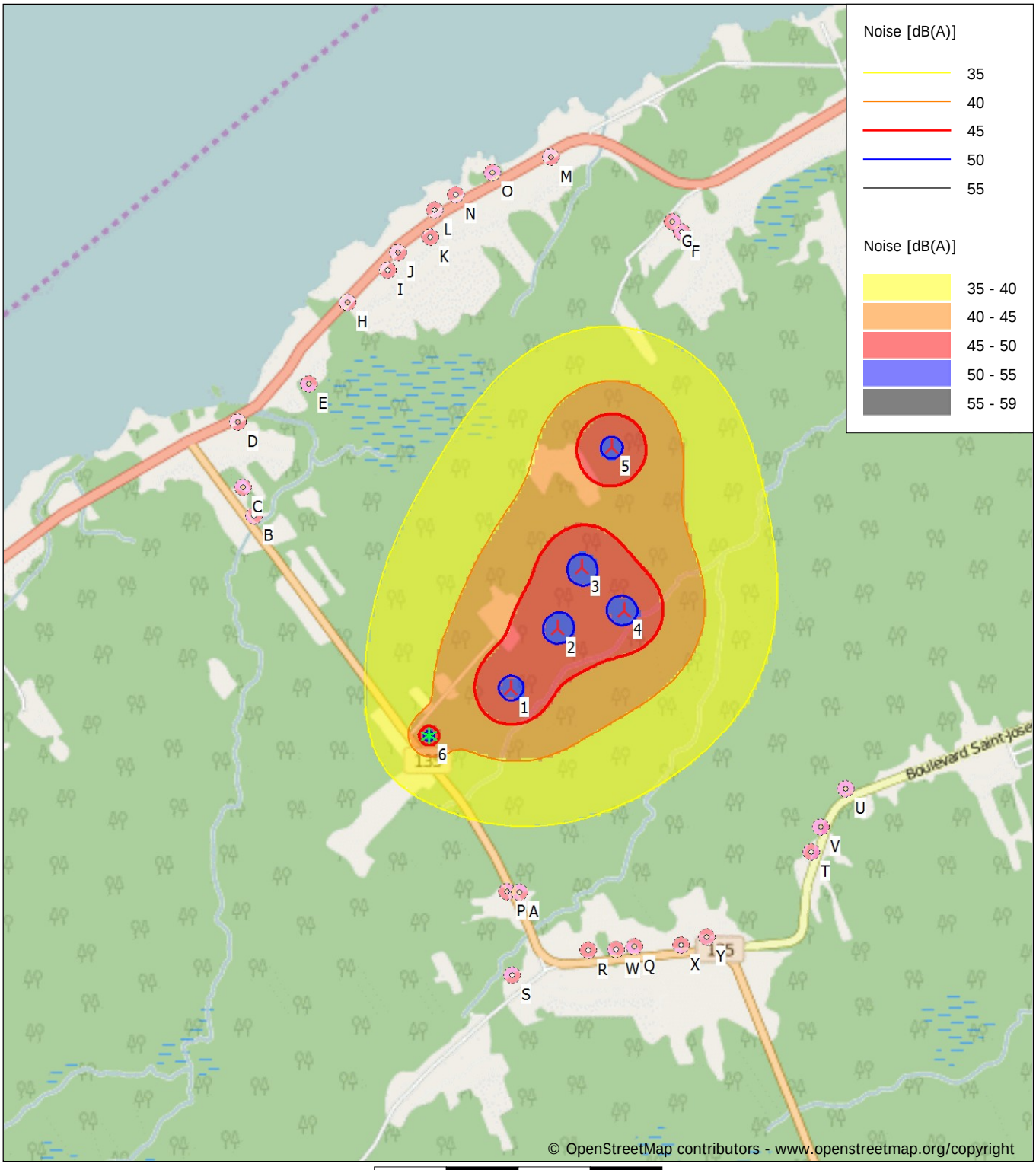
DECIBEL - Map 5,0 m/s

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)



0 500 1000 1500 2000 m

Map: Open Street Map 001 , Print scale 1:40.000, Map center CA New Brunswick NAD83-NAD83 (US+CA) East: 2.595.472 North: 7.642.861

New WTG Existing WTG Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 5,0 m/s
Height above sea level from active line object

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IFE Eriksen AG
Industriestr. 5
DE-26122 Oldenburg
+49 (0) 441 92561 13
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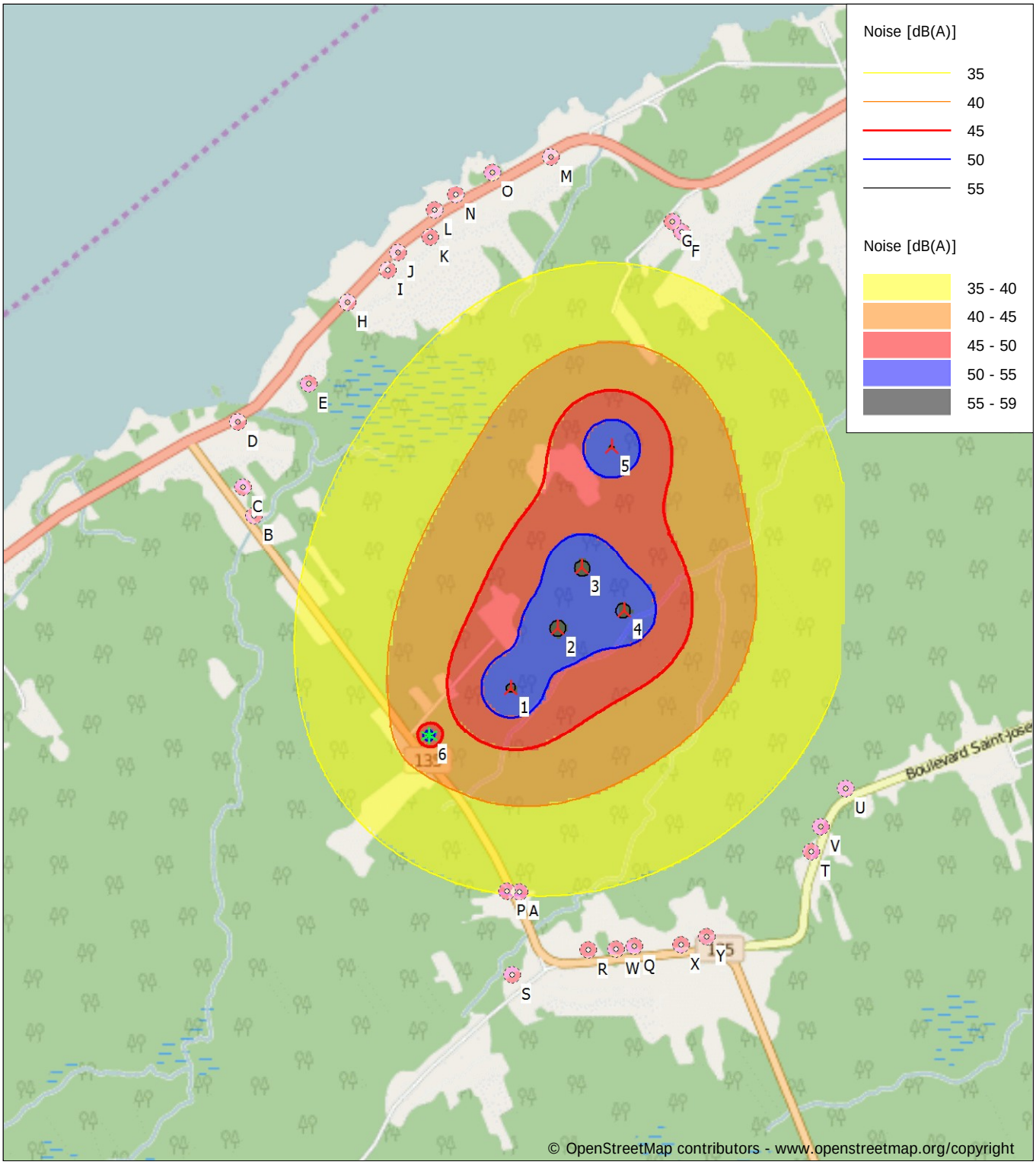
DECIBEL - Map 6,0 m/s

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)



Map: Open Street Map 001 , Print scale 1:40.000, Map center CA New Brunswick NAD83-NAD83 (US+CA) East: 2.595.472 North: 7.642.861

New WTG Existing WTG Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 6,0 m/s
Height above sea level from active line object

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Industriestr. 5
DE-26122 Oldenburg
+49 (0) 441 92561 13
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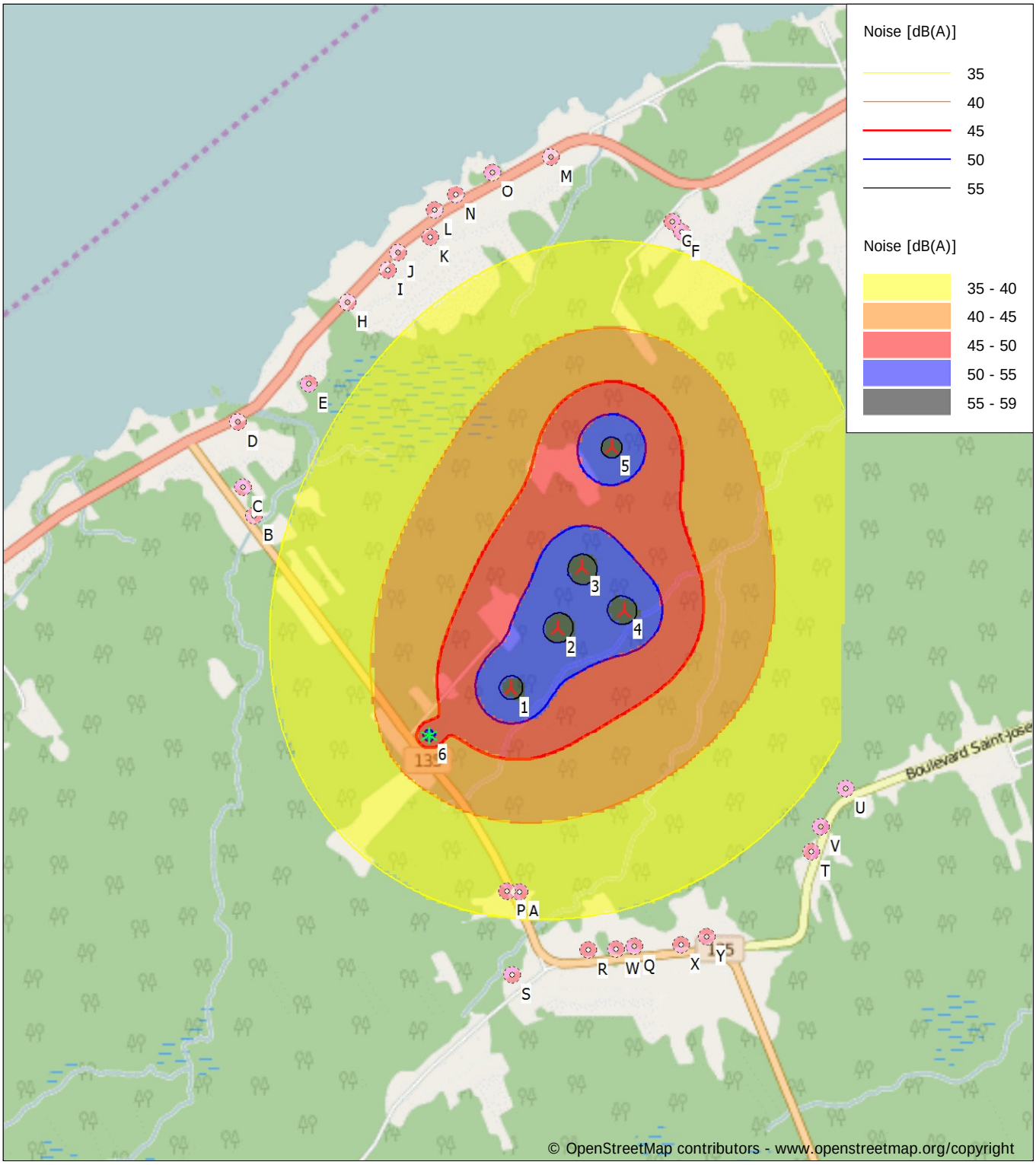
DECIBEL - Map 7,0 m/s

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)



0 500 1000 1500 2000 m

Map: Open Street Map 001 , Print scale 1:40.000, Map center CA New Brunswick NAD83-NAD83 (US+CA) East: 2.595.472 North: 7.642.861

New WTG Existing WTG Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 7,0 m/s
Height above sea level from active line object

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IFE Eriksen AG
Industriestr. 5
DE-26122 Oldenburg
+49 (0) 441 92561 13
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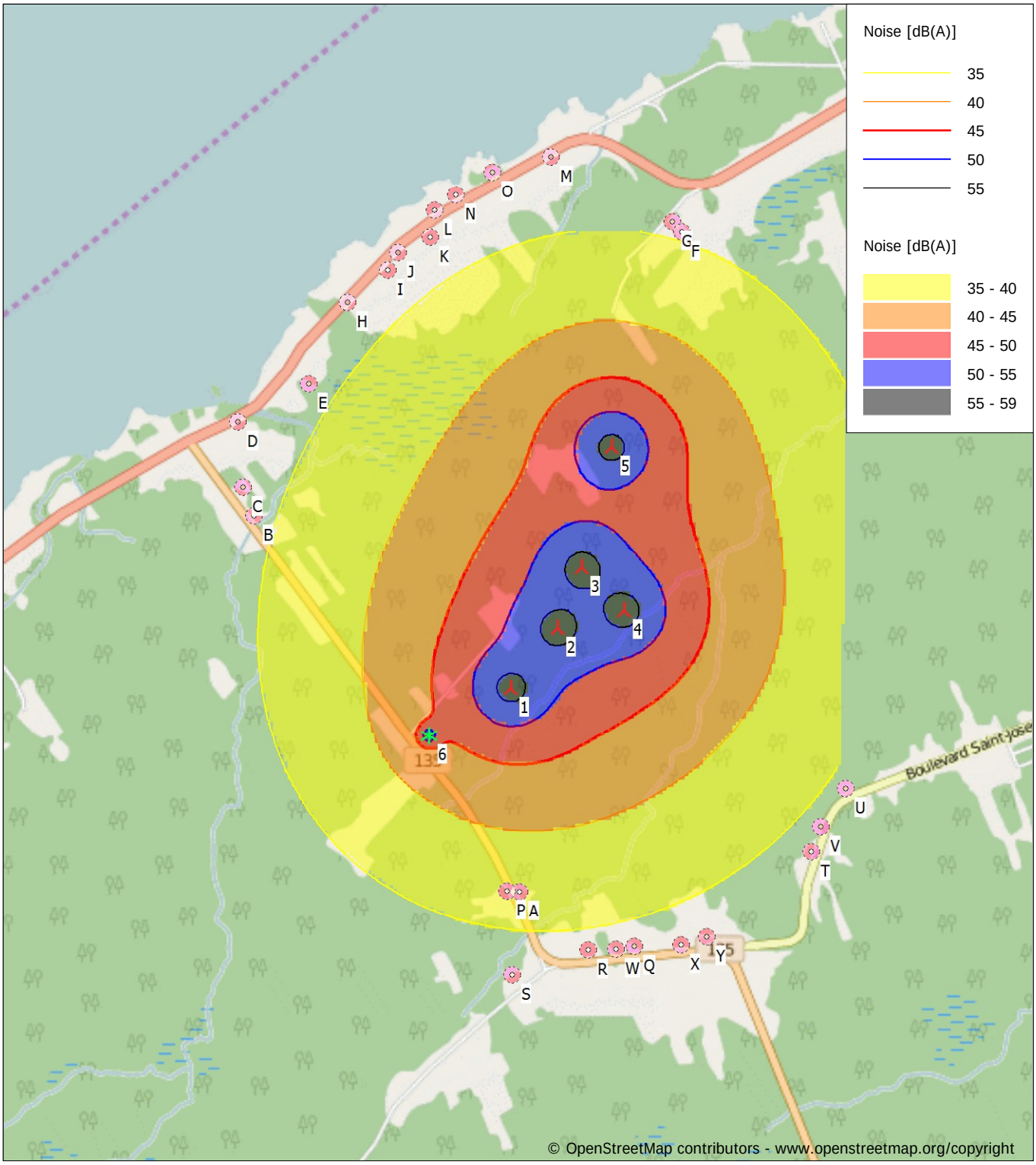
DECIBEL - Map 8,0 m/s

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)



0 500 1000 1500 2000 m

Map: Open Street Map 001 , Print scale 1:40.000, Map center CA New Brunswick NAD83-NAD83 (US+CA) East: 2.595.472 North: 7.642.861

New WTG Existing WTG Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 8,0 m/s
Height above sea level from active line object

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IFE Eriksen AG
Industriestr. 5
DE-26122 Oldenburg
+49 (0) 441 92561 13
Gautier / gautier@ife-eriksen.de
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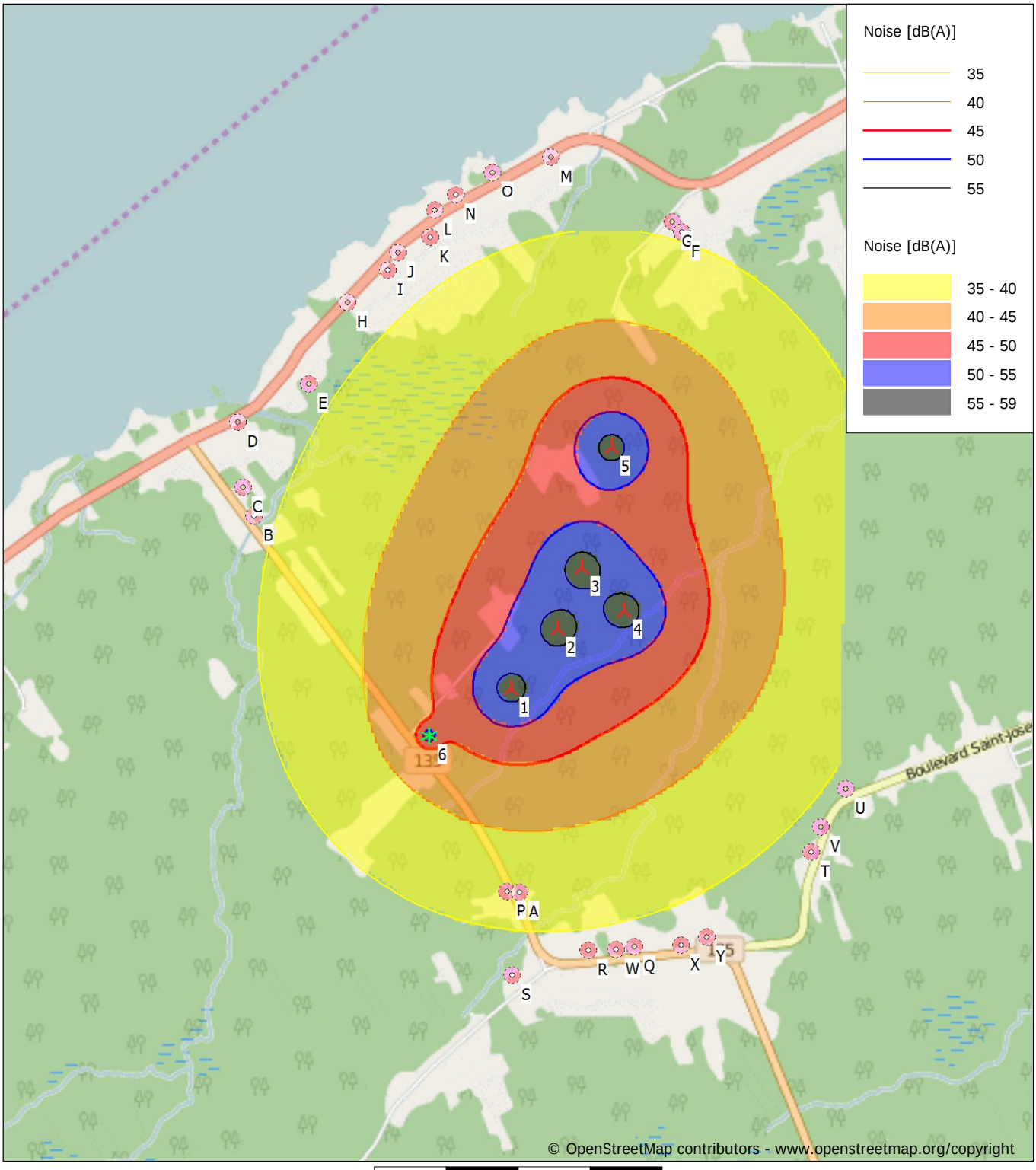
DECIBEL - Map 9,0 m/s

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)



0 500 1000 1500 2000 m

Map: Open Street Map 001 , Print scale 1:40.000, Map center CA New Brunswick NAD83-NAD83 (US+CA) East: 2.595.472 North: 7.642.861

New WTG Existing WTG Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 9,0 m/s
Height above sea level from active line object

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IFE Eriksen AG
Industriestr. 5
DE-26122 Oldenburg
+49 (0) 441 92561 13
Gautier / gautier@ife-eriksen.de
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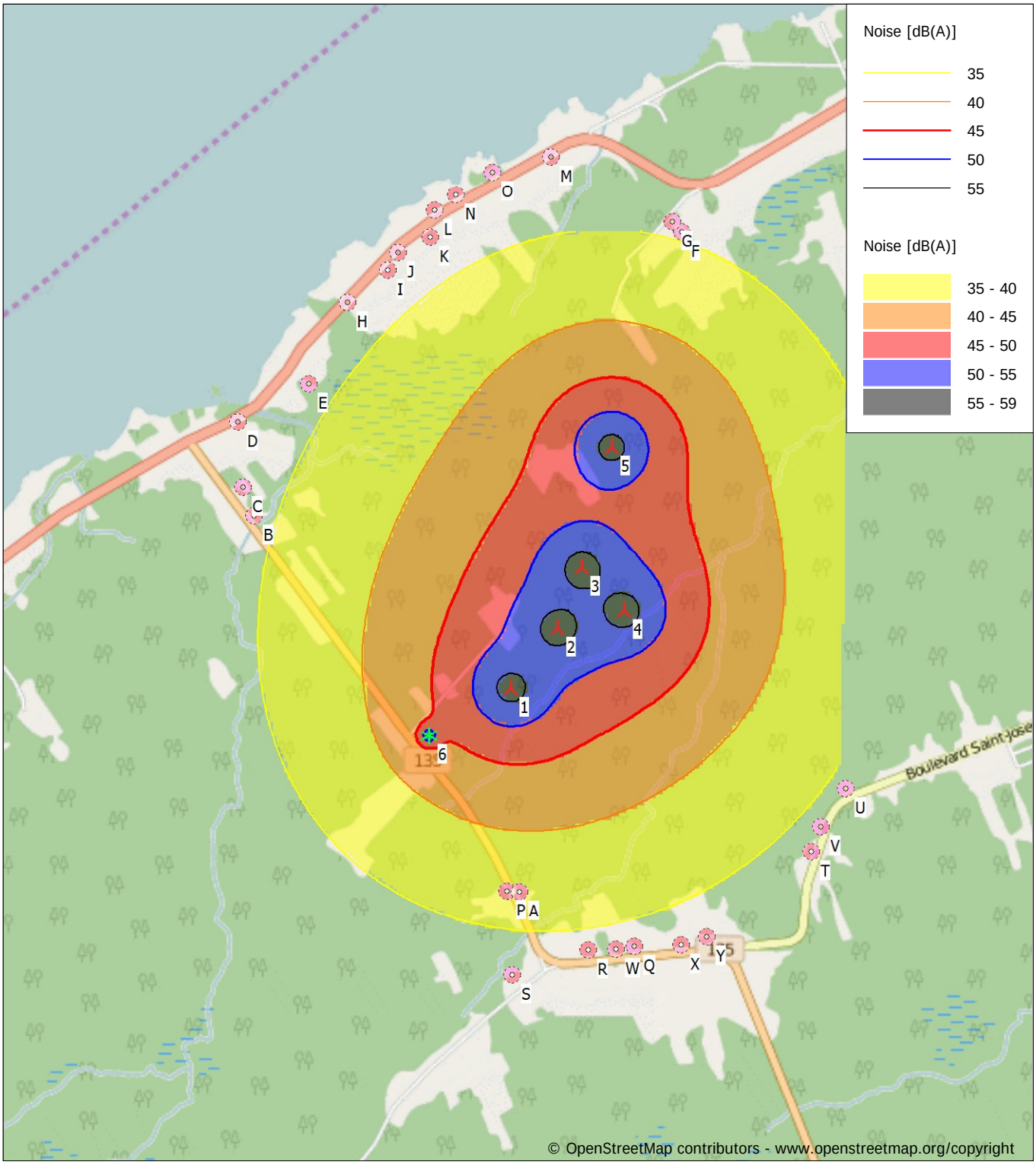
DECIBEL - Map 10,0 m/s

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)



0 500 1000 1500 2000 m

Map: Open Street Map 001 , Print scale 1:40.000, Map center CA New Brunswick NAD83-NAD83 (US+CA) East: 2.595.472 North: 7.642.861

New WTG Existing WTG Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 10,0 m/s
Height above sea level from active line object

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IFE Eriksen AG
Industriestr. 5
DE-26122 Oldenburg
+49 (0) 441 92561 13
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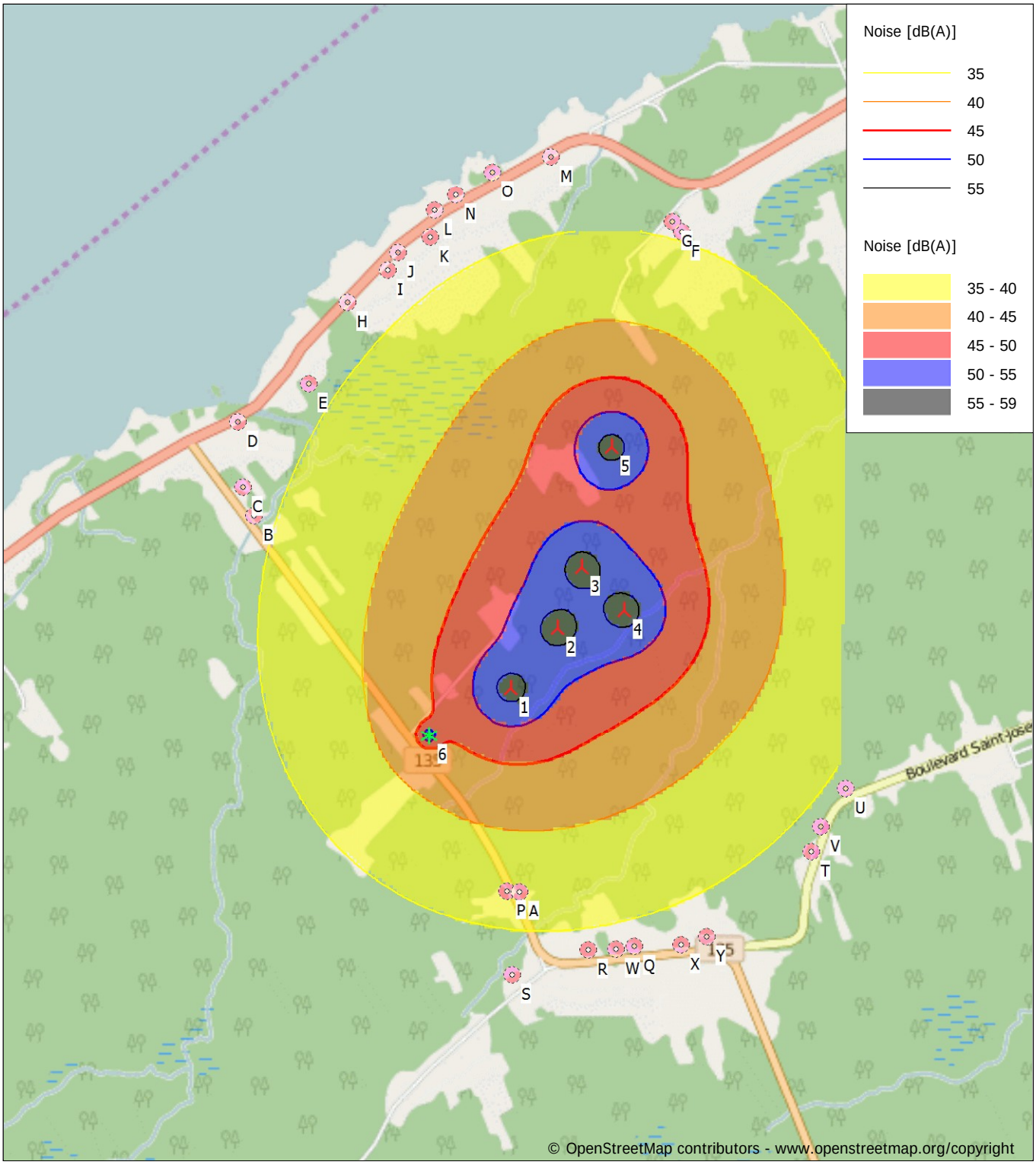
DECIBEL - Map 11,0 m/s

Calculation: 190603 5xE126 EP3 132m + substation (1+db unc)



0 500 1000 1500 2000 m

Map: Open Street Map 001 , Print scale 1:40.000, Map center CA New Brunswick NAD83-NAD83 (US+CA) East: 2.595.472 North: 7.642.861

New WTG Existing WTG Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 11,0 m/s
Height above sea level from active line object