

Appendix L

WindPRO SHADOW Results

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 1

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Main Result**Calculation:** Elecon T600**Assumptions for shadow calculations**

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational hours are calculated from WTGs in calculation and wind distribution:

SODAR

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values.

A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

Height contours used: Height Contours: CONTOURLINE_5247Windpro_0.wpo

Obstacles used in calculation

Eye height: 1.5 m

Grid resolution: 10 m



Scale 1:12,500

New WTG

Shadow receptor

WTGs

UTM NAD83 Zone: 19				WTG type			Shadow data				
East	North	Z	Row	Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Calculation distance	RPM
		[m]	data/Description				[kW]	[m]	[m]	[m]	[RPM]
UTM NAD83 Zone: 19											
1	343,656	4,704,476	27.7 Elecon T600	Yes	TURBOWINDS	T600-48-600/120	600	48.0	60.0	815	23.0

Shadow receptor-Input

UTM NAD83 Zone: 19											
No.	Name	East	North	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode	
				[m]	[m]	[m]	[m]	[°]	[°]		
A	Tedesco Country Club	343,854	4,704,716	28.8	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
B	Davenport Drive	343,962	4,704,501	14.0	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
C	Route 1A	343,416	4,704,739	16.1	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
D	Parsons Drive	343,368	4,704,506	36.7	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
E	Middle School	343,623	4,704,177	24.3	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
F	End of Nason Road	343,727	4,704,197	18.6	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
G	Burke Drive	343,332	4,704,234	23.7	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
H	End of Neighborhood Road	344,154	4,704,182	13.2	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 2

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Main Result**Calculation:** Elecon T600**Calculation Results**

Shadow receptor

Shadow, expected values

No.	Name	Shadow hours per year [h/year]
A	Tedesco Country Club	3:09
B	Davenport Drive	7:26
C	Route 1A	9:56
D	Parsons Drive	8:43
E	Middle School	0:00
F	End of Nason Road	0:00
G	Burke Drive	0:00
H	End of Neighborhood Road	0:00

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
1	Elecon T600	91:11	29:16

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 3

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar**Calculation: Elecon T600Shadow receptor: A - Tedesco Country Club****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	14:27 (1)	06:59	06:21	06:28	05:40	05:10	05:35	06:08	06:40	06:17	06:53
2	16:21	14:49 (1)	16:57	17:33	19:09	19:43	20:13	20:06	19:20	18:27	16:38	16:12
3	07:14	14:28 (1)	06:58	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:54
4	16:22	14:49 (1)	16:58	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37
5	07:14	14:29 (1)	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:55
6	16:23	14:49 (1)	17:00	17:35	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36
7	07:14	14:30 (1)	06:56	06:16	06:23	05:36	05:08	05:12	05:39	06:11	06:44	06:56
8	16:24	14:49 (1)	17:01	17:37	19:13	19:47	20:16	20:25	20:02	19:14	18:22	16:34
9	07:14	14:32 (1)	06:55	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:57
10	16:25	14:48 (1)	17:02	17:38	19:14	19:48	20:17	20:25	20:01	19:13	18:20	16:33
11	07:14	14:34 (1)	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:58
12	16:26	14:48 (1)	17:04	17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32
13	07:14	14:36 (1)	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:59
14	16:27	14:47 (1)	17:05	17:40	19:16	19:50	20:18	20:24	19:57	19:09	18:17	16:31
15	07:14	14:38 (1)	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:56
16	16:28	14:44 (1)	17:06	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30
17	07:13	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27	07:01
18	16:29	17:08	18:43	19:18	19:52	20:19	20:24	19:55	19:06	18:13	16:29	16:11
19	07:13	06:49	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28	07:02
20	16:30	17:09	18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:11	16:27	16:11
21	07:13	06:47	07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29	07:03
22	16:31	17:10	18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	16:11
23	07:13	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31	07:04
24	16:32	17:12	18:46	19:22	19:55	20:21	20:22	19:51	19:01	18:08	16:25	16:11
25	07:12	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32	07:05
26	16:33	17:13	18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:07	16:24	16:11
27	07:12	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33	07:05
28	16:35	17:14	18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	16:11
29	07:12	06:42	06:57	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34	07:06
30	16:36	17:15	18:50	19:25	19:58	20:22	20:21	19:46	18:55	18:03	16:23	16:12
31	07:11	06:41	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36	07:07
32	16:37	17:17	18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	16:12
33	07:11	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37	07:08
34	16:38	17:18	18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	16:12
35	07:10	06:38	06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38	07:08
36	16:39	17:19	18:53	19:29	20:00	20:24	20:19	19:42	18:50	17:58	16:20	16:13
37	07:09	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39	07:09
38	16:40	17:21	18:54	19:30	20:01	20:24	20:18	19:41	18:48	17:57	16:19	16:13
39	07:09	06:35	06:49	05:56	05:18	05:07	05:24	05:55	06:28	07:02	06:40	07:09
40	16:42	17:22	18:56	19:31	20:02	20:24	20:17	19:39	18:46	17:55	16:18	16:13
41	07:08	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42	07:10
42	16:43	17:23	18:57	19:32	20:03	20:25	20:16	19:37	18:45	17:54	16:18	16:14
43	07:07	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43	07:11
44	16:44	17:24	18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	16:14
45	07:07	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44	07:11
46	16:45	17:26	18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	16:15
47	07:06	06:29	06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45	07:12
48	16:47	17:27	19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	16:15
49	07:05	06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46	07:12
50	16:48	17:28	19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	16:16
51	07:04	06:26	06:38	05:47	05:13	05:08	05:29	06:02	06:35	07:09	06:48	07:12
52	16:49	17:29	19:02	19:38	20:08	20:25	20:12	19:30	18:36	17:46	16:15	16:17
53	07:04	06:24	06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49	07:13
54	16:51	17:31	19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	16:17
55	07:03	06:22	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50	07:13
56	16:52	17:32	19:05	19:40	20:10	20:25	20:10	19:26	18:32	17:44	16:14	16:18
57	07:02	06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51	07:13	16:24
58	16:53	19:06	19:41	20:11	20:25	20:09	19:25	18:30	17:42	16:13	16:19	16:25
59	07:01	06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52	07:13	16:25
60	16:54	19:07	19:42	20:12	20:25	20:08	19:23	18:29	17:41	16:13	16:19	16:24
61	07:00	06:30	05:40	05:10	05:10	05:34	06:07	06:40	07:16	07:14	07:14	16:26
62	16:56	19:08	19:43	20:13	20:26	20:07	19:21	19:21	17:40	16:20	16:20	16:23
63	Potential sun hours	293	295	370	401	452	457	464	431	375	343	294
64	Total, worst case	129										638
65	Sun reduction	0.56										0.45
66	Oper. time red.	0.93										0.93
67	Wind dir. red.	0.57										0.57
68	Total reduction	0.30										0.24
69	Total, real	39										151

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 4

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar**Calculation:** Elecon T600Shadow receptor: B - Davenport Drive**Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14 16:21	06:59 16:57 17:33	06:21 17:33 06:19	06:28 19:09 35 18:10 (1) 17:34 (1) 05:39	05:40 19:43 05:09	05:10 20:13 20:25	05:35 20:06 05:11	06:08 19:20 18 17:58 (1) 17:37 (1) 06:41	17:40 (1) 18:27 16:38 16:12	06:40 18:27 16:38 16:12	06:17 16:38 16:12	06:53 16:12 16:54
2	07:14 16:22	06:58 16:58 17:34	06:19 17:34 06:18	06:26 19:10 35 18:09 (1) 19:44	05:39 19:44 05:37	05:09 20:14 20:25	05:11 20:05 05:38	06:09 19:18 22 17:59 (1) 17:35 (1) 06:43	17:58 (1) 18:25 16:37 16:12	18:25 18:25 16:37 16:12	16:37 16:12 16:55	16:12 16:55
3	07:14 16:23	06:57 17:00 17:35	06:18 17:35 06:16	06:24 19:12 35 18:10 (1) 19:45	05:37 19:45 05:36	05:09 20:15 20:25	05:11 20:04 05:39	06:10 19:16 26 18:01 (1) 17:34 (1) 06:44	17:35 (1) 18:23 16:36 16:12	16:43 18:23 16:36 16:12	06:43 16:12 16:56	06:55 16:12 16:56
4	07:14 16:24	06:56 17:01 17:37	06:16 17:37 06:14	06:23 19:13 34 18:09 (1) 19:47	05:36 19:47 05:35	05:08 20:16 20:25	05:12 20:02 05:40	06:11 19:14 28 18:02 (1) 17:32 (1) 06:45	17:34 (1) 18:22 16:34 16:12	16:44 18:22 16:34 16:12	06:45 18:22 16:34 16:12	06:56 16:12 16:57
5	07:14 16:25	06:55 17:02 17:38	06:14 17:38 06:13	06:21 19:13 33 18:08 (1) 19:48	05:35 19:48 05:34	05:08 20:17 20:25	05:12 20:01 05:41	06:13 19:13 30 18:02 (1) 17:31 (1) 06:46	17:32 (1) 18:20 16:33 16:11	16:45 18:20 16:33 16:11	06:46 18:20 16:33 16:11	06:57 16:11 16:58
6	07:14 16:26	06:53 17:04 17:39	06:13 17:39 06:11	06:19 19:14 32 18:08 (1) 19:49	05:34 19:49 05:32	05:08 20:17 20:24	05:13 20:00 05:42	06:14 19:11 32 18:03 (1) 17:30 (1) 06:47	17:31 (1) 18:18 16:32 16:11	16:46 18:18 16:32 16:11	06:47 18:18 16:32 16:11	06:59 16:11 16:59
7	07:14 16:27	06:52 17:05 17:40	06:11 17:40 07:09	06:18 19:16 30 18:06 (1) 19:50	05:32 19:50 05:31	05:07 20:18 20:24	05:14 19:57 05:43	06:15 19:09 33 18:03 (1) 17:29 (1) 06:48	17:30 (1) 18:17 16:31 16:11	06:47 18:17 16:31 16:11	06:48 18:17 16:31 16:11	06:59 16:11 16:59
8	07:14 16:28	06:51 17:06 18:42	07:09 18:42 07:08	06:16 19:17 28 18:05 (1) 19:51	05:31 19:51 05:30	05:07 20:19 20:24	05:14 19:56 05:44	06:16 19:08 34 18:03 (1) 17:28 (1) 06:49	17:29 (1) 18:15 16:30 16:11	06:48 18:15 16:30 16:11	06:49 18:15 16:30 16:11	06:59 16:11 16:59
9	07:13 16:29	06:50 17:08 18:43	07:08 18:43 07:06	06:14 19:18 26 18:04 (1) 19:52	05:30 19:52 05:29	05:07 20:19 20:23	05:15 19:55 05:45	06:17 19:06 35 18:03 (1) 17:28 (1) 06:50	17:28 (1) 18:13 16:29 16:11	06:49 18:13 16:29 16:11	06:50 18:13 16:29 16:11	06:59 16:11 16:59
10	07:13 16:30	06:49 17:09 18:44	07:06 18:44 07:04	06:13 19:19 22 18:01 (1) 19:53	05:29 19:53 05:28	05:07 20:20 20:23	05:16 19:54 05:46	06:18 19:04 36 18:04 (1) 17:28 (1) 06:52	17:28 (1) 18:11 16:27 16:11	06:50 18:11 16:27 16:11	06:51 18:11 16:27 16:11	06:59 16:11 16:59
11	07:13 16:31	06:47 17:10 18:45	07:04 18:45 07:03	06:11 19:21 18 17:59 (1) 19:54	05:28 19:54 05:26	05:07 20:20 20:23	05:16 19:52 05:47	06:19 19:02 35 18:03 (1) 17:27 (1) 06:53	17:28 (1) 18:10 16:26 16:11	06:52 18:10 16:26 16:11	06:53 18:10 16:26 16:11	06:59 16:11 16:59
12	07:13 16:32	06:46 17:12 18:46	07:03 18:46 07:01	06:09 19:22 12 17:56 (1) 19:55	05:26 19:55 05:25	05:06 20:21 20:22	05:17 19:51 05:48	06:20 19:01 36 18:03 (1) 17:27 (1) 06:54	17:27 (1) 18:08 16:25 16:11	06:53 18:08 16:25 16:11	06:31 18:08 16:25 16:11	07:04 16:11 16:59
13	07:12 16:33	06:45 17:13 18:47	07:01 18:47 06:59	06:08 19:23 06:06	05:25 19:56 05:24	05:06 20:21 20:22	05:18 19:49 05:19	06:21 18:59 35 18:02 (1) 17:27 (1) 06:55	17:27 (1) 18:07 16:24 16:11	06:54 18:07 16:24 16:11	06:32 18:07 16:24 16:11	07:05 16:11 16:59
14	07:12 16:35	06:43 17:14 18:49	06:59 18:49 06:57	06:06 19:24 06:04	05:24 19:57 05:23	05:06 20:22 20:21	05:19 19:48 05:50	06:22 18:57 34 18:01 (1) 17:27 (1) 06:56	17:27 (1) 18:05 16:23 16:12	06:55 18:05 16:23 16:12	06:33 18:05 16:23 16:12	07:05 16:12 16:59
15	07:12 16:36	06:42 17:15 18:50	06:57 18:50 06:56	06:04 19:25 06:03	05:23 19:58 05:22	05:06 20:22 20:20	05:50 19:46 05:51	06:23 18:55 34 18:01 (1) 17:27 (1) 06:57	17:27 (1) 18:03 16:23 16:12	06:56 18:03 16:23 16:12	06:34 18:03 16:23 16:12	07:06 16:12 16:59
16	07:11 16:37	06:41 17:17 18:51	06:56 18:51 06:54	06:03 19:26 06:01	05:22 19:59 05:21	05:06 20:23 20:20	05:50 19:45 05:51	06:24 18:53 32 17:59 (1) 17:28 (1) 06:59	17:27 (1) 18:02 16:22 16:12	06:57 18:02 16:22 16:12	06:36 18:02 16:22 16:12	07:07 16:12 16:59
17	07:11 16:38	06:39 17:18 18:52	06:54 18:52 06:52	06:01 19:27 06:00	05:21 20:00 05:20	05:06 20:23 20:19	05:51 19:44 05:52	06:25 18:52 30 17:58 (1) 17:28 (1) 07:00	17:28 (1) 18:00 16:21 16:12	06:59 18:00 16:21 16:12	06:37 18:00 16:21 16:12	07:08 16:12 16:59
18	07:10 16:39	06:38 17:19 18:53	06:52 18:53 06:51	06:00 19:29 05:58	05:20 20:00 05:19	05:06 20:24 20:19	05:22 19:42 05:53	06:26 18:50 29 17:57 (1) 17:29 (1) 07:01	17:28 (1) 17:58 16:20 16:13	07:00 17:58 16:20 16:13	06:38 17:58 16:20 16:13	07:08 16:13 16:59
19	07:09 16:40	06:36 17:21 18:54	06:51 18:54 06:49	05:58 19:30 05:56	05:19 20:01 05:18	05:06 20:24 20:18	05:23 19:41 05:54	06:27 18:48 26 17:55 (1) 17:30 (1) 07:02	17:29 (1) 17:57 16:19 16:13	07:01 17:57 16:19 16:13	06:39 17:57 16:19 16:13	07:09 16:13 16:59
20	07:09 16:42	06:35 17:22 18:56	06:49 18:56 06:47	05:56 19:31 05:55	05:18 20:02 05:17	05:07 20:24 20:17	05:24 19:39 05:55	06:28 18:46 23 17:53 (1) 17:32 (1) 07:03	17:55 (1) 17:55 16:18 16:13	07:02 17:55 16:18 16:13	06:40 17:55 16:18 16:13	07:09 16:13 16:59
21	07:08 16:43	06:33 17:23 18:57	06:47 18:57 06:45	17:51 (1) 19:32 05:55	05:55 19:32 05:53	05:07 20:25 20:16	05:25 19:37 05:57	06:30 18:45 18 17:50 (1) 17:35 (1) 07:04	17:53 (1) 17:54 16:18 16:14	07:03 17:54 16:18 16:14	06:42 17:54 16:18 16:14	07:10 16:14 16:59
22	07:07 16:44	06:32 17:24 18:58	06:45 18:58 06:44	17:48 (1) 19:33 05:53	05:53 19:33 05:52	05:07 20:26 20:16	05:57 19:36 05:58	06:31 18:43 11 17:46 (1) 17:32 (1) 07:05	17:50 (1) 17:52 16:17 16:14	07:04 17:52 16:17 16:14	06:43 17:52 16:17 16:14	07:11 16:14 16:59
23	07:07 16:45	06:30 17:26 18:59	06:44 18:59 06:42	17:45 (1) 19:34 05:52	05:52 19:34 05:51	05:07 20:25 20:15	05:27 19:34 05:59	06:32 18:41 17:45 (1) 17:32 (1) 07:06	17:51 17:51 16:16 16:15	07:06 17:51 16:16 16:15	06:44 17:51 16:16 16:15	07:11 16:15 16:59
24	07:06 16:47	06:29 17:27 19:00	06:42 19:00 06:40	17:42 (1) 19:35 05:50	05:50 19:35 05:49	05:07 20:26 20:14	05:28 19:33 06:00	06:33 18:39 25 18:07 (1) 17:42 (1) 07:07	17:52 (1) 17:49 16:16 16:15	07:07 17:49 16:16 16:15	06:45 17:49 16:16 16:15	07:12 16:15 16:59
25	07:05 16:48	06:27 17:28 19:01	06:40 19:01 06:38	17:40 (1) 19:36 05:49	05:49 19:36 05:48	05:08 20:25 20:13	05:29 19:31 06:01	06:34 18:37 28 18:08 (1) 17:40 (1) 07:08	17:50 (1) 17:48 16:15 16:16	07:08 17:48 16:15 16:16	06:46 17:48 16:15 16:16	07:12 16:16 16:59
26	07:04 16:49	06:26 17:29 19:02	06:38 19:02 06:37	17:40 (1) 19:38 05:47	05:47 19:38 05:46	05:08 20:26 20:12	05:29 19:29 06:02	06:35 18:36 30 18:10 (1) 17:38 (1) 05:46	17:49 (1) 17:46 16:15 16:17	07:09 17:46 16:15 16:17	06:48 17:46 16:15 16:17	07:12 16:17 16:59
27	07:04 16:51	06:24 17:31 19:04	06:37 19:04 06:35	17:38 (1) 19:39 05:46	05:46 19:39 05:44	05:08 20:25 20:11	06:03 19:28 06:04	06:36 18:34 32 18:10 (1) 17:37 (1) 05:44	17:45 (1) 17:45 16:14 16:17	06:49 17:45 16:14 16:17	07:13 17:45 16:14 16:17	07:13 16:17 16:59
28	07:03 16:52	06:22 17:32	06:35 19:05	17:37 (1) 19:40	05:44 19:40	05:09 20:25	05:31 20:10	06:04 19:26	06:37 18:32	07:12 17:44	06:50 16:14	07:13 16:18
29	07:02 16:53	06:20 17:33	06:33 19:06	17:36 (1) 19:41	05:43 19:41	05:09 20:25	05:32 20:09	06:05 19:25	06:38 18:30	07:13 17:42	06:51 16:13	07:13 16:19
30	07:01 16:54	06:18 17:34	06:31 19:07	17:36 (1) 19:42	05:42 19:42	05:11 20:25	05:33 20:08	06:06 19:23	06:39 18:29	07:14 17:41	06:52 16:13	07:13 16:19
31	07:00 16:56	06:16 17:36	06:30 19:08	17:35 (1) 19:43	05:41 19:43	05:10 20:13	05:34 20:07	06:07 19:21	17:43 (1) 17:55 (1)	07:15 17:40	06:53 16:20	07:14 16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case			298	340				12	637			
Sun reduction			0.49	0.55				0.66	0.53			
Oper. time red.			0.93	0.93				0.93	0.93			
Wind dir. red.			0.71	0.71				0.71	0.71			
Total reduction			0.32	0.36				0.43	0.35			
Total, real			96	123				5	223			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 5

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar**Calculation: Elecon T600Shadow receptor: C - Route 1A****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	08:20 (1)	06:59	06:21	06:28	05:40	05:10	05:35	06:08	06:40	06:17	06:53
2	07:14	08:20 (1)	06:58	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:18
3	07:14	08:21 (1)	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19
4	07:14	08:21 (1)	06:56	06:16	06:23	05:36	05:08	05:12	05:39	06:11	06:44	06:21
5	07:14	08:22 (1)	06:55	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22
6	07:14	08:23 (1)	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23
7	07:14	08:23 (1)	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24
8	07:14	08:23 (1)	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26
9	07:13	08:24 (1)	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27
10	07:13	08:25 (1)	06:49	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28
11	07:13	08:25 (1)	06:47	07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29
12	07:13	08:26 (1)	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31
13	07:12	08:27 (1)	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32
14	07:12	08:27 (1)	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33
15	07:12	08:29 (1)	06:42	06:58	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34
16	07:11	08:29 (1)	06:41	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36
17	07:11	08:30 (1)	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37
18	07:10	08:31 (1)	06:38	06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38
19	07:09	08:32 (1)	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39
20	07:09	08:34 (1)	06:35	06:49	05:56	05:18	05:07	05:24	05:56	06:28	07:02	06:41
21	07:08	08:36 (1)	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42
22	07:08	08:38 (1)	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43
23	07:07	08:41 (1)	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44
24	07:06	08:47 (1)	06:29	06:43	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45
25	07:05		06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46
26	07:04		06:26	06:38	05:47	05:13	05:08	05:30	06:02	06:35	07:09	06:48
27	07:04		06:24	06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49
28	07:03		06:23	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50
29	07:02		06:21	06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51
30	07:01		06:19	06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52
31	07:00		06:17	06:29	05:40	05:10	05:09	05:31	06:07	06:40	07:15	06:53
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case	630										269	1034
Sun reduction	0.56										0.47	0.45
Oper. time red.	0.93										0.93	0.93
Wind dir. red.	0.69										0.69	0.69
Total reduction	0.36										0.30	0.28
Total, real	225										79	292

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 6

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar**Calculation: Elecon T600Shadow receptor: D - Parsons Drive****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14 16:21	06:59 16:57	06:21 17:33	06:28 19:09	07:10 (1) 07:47 (1)	05:40 19:43	05:10 20:13	05:36 20:06	06:08 19:20	06:40 18:27	06:17 16:38	06:53 16:12
2	07:14 16:22	06:58 16:58	06:19 17:34	06:26 19:10	07:10 (1) 07:45 (1)	05:39 19:44	05:09 20:14	05:37 20:05	06:09 19:18	06:41 18:25	06:18 16:37	06:54 16:12
3	07:14 16:23	06:57 17:00	06:18 17:36	06:24 19:12	07:11 (1) 07:45 (1)	05:37 19:45	05:09 20:15	05:38 20:04	06:10 19:16	07:16 (1) 07:30 (1)	06:43 18:23	06:55 16:12
4	07:14 16:24	06:56 17:01	06:16 17:37	06:23 19:13	07:11 (1) 07:43 (1)	05:36 19:47	05:09 20:16	05:39 20:02	06:11 19:14	07:13 (1) 07:33 (1)	06:44 18:22	06:56 16:12
5	07:14 16:25	06:55 17:02	06:14 17:38	06:21 19:14	07:12 (1) 07:42 (1)	05:35 19:48	05:08 20:17	05:12 20:01	06:13 19:13	07:11 (1) 07:34 (1)	06:45 18:20	06:57 16:11
6	07:14 16:26	06:53 17:04	06:13 17:39	06:19 19:15	07:14 (1) 07:41 (1)	05:34 19:49	05:08 20:17	05:13 20:04	06:14 19:11	07:09 (1) 07:36 (1)	06:46 18:18	06:58 16:11
7	07:14 16:27	06:52 17:05	06:11 17:40	06:18 19:16	07:15 (1) 07:38 (1)	05:32 19:50	05:07 20:18	05:14 20:04	06:15 19:58	07:07 (1) 07:37 (1)	06:47 18:17	06:59 16:11
8	07:14 16:28	06:51 17:06	07:09 18:42	06:16 19:17	07:16 (1) 07:36 (1)	05:31 19:51	05:07 20:19	05:14 20:24	06:16 19:56	07:07 (1) 07:38 (1)	06:48 18:15	07:00 16:11
9	07:13 16:29	06:50 17:08	07:08 18:43	06:14 19:18	07:19 (1) 07:33 (1)	05:30 19:52	05:07 20:19	05:15 20:24	06:17 19:55	07:05 (1) 07:39 (1)	06:49 18:13	07:01 16:11
10	07:13 16:30	06:49 17:09	07:06 18:44	06:13 19:19	07:20 (1) 19:53	05:29 20:20	05:07 20:23	05:16 19:54	06:18 19:04	07:04 (1) 07:39 (1)	06:50 18:12	07:02 16:11
11	07:13 16:31	06:47 17:10	07:04 18:45	06:11 19:21	07:21 (1) 19:54	05:28 20:20	05:07 20:23	05:16 19:52	06:19 19:02	07:03 (1) 07:40 (1)	06:52 18:10	07:03 16:11
12	07:13 16:32	06:46 17:12	07:03 18:46	06:09 19:22	07:22 (1) 19:55	05:26 20:21	05:06 20:22	05:17 19:51	06:20 19:01	07:03 (1) 07:40 (1)	06:53 18:08	07:04 16:11
13	07:12 16:33	06:45 17:13	07:01 18:47	06:08 19:23	07:23 (1) 19:56	05:25 20:21	05:06 20:22	05:18 19:49	06:21 18:59	07:02 (1) 07:40 (1)	06:54 18:07	07:05 16:11
14	07:12 16:35	06:43 17:14	06:59 18:49	06:06 19:24	07:24 (1) 19:57	05:24 20:22	05:06 20:21	05:19 19:48	06:22 18:57	07:01 (1) 07:39 (1)	06:55 18:05	07:06 16:12
15	07:12 16:36	06:42 17:15	06:58 18:50	06:04 19:25	07:25 (1) 19:58	05:23 20:22	05:06 20:21	05:20 19:47	06:23 18:55	07:01 (1) 07:39 (1)	06:56 18:03	07:06 16:12
16	07:11 16:37	06:41 17:17	06:56 18:51	06:03 19:26	07:26 (1) 19:59	05:22 20:23	05:06 20:20	05:20 19:45	06:24 18:53	07:01 (1) 07:39 (1)	06:57 18:02	07:07 16:12
17	07:11 16:38	06:39 17:18	06:54 18:52	06:01 19:27	07:27 (1) 20:00	05:21 20:23	05:06 20:19	05:21 19:44	06:25 18:52	07:00 (1) 07:38 (1)	06:59 18:00	07:08 16:12
18	07:10 16:39	06:38 17:19	06:52 18:53	06:00 19:29	07:28 (1) 20:00	05:20 20:24	05:06 20:19	05:22 19:42	06:26 18:50	07:00 (1) 07:37 (1)	07:00 17:58	07:08 16:13
19	07:09 16:41	06:36 17:21	06:51 18:54	05:58 19:30	07:29 (1) 20:02	05:19 20:24	05:06 20:18	05:23 19:41	06:27 18:48	07:00 (1) 07:37 (1)	07:01 17:57	07:09 16:13
20	07:09 16:42	06:35 17:22	06:49 18:56	05:56 19:31	07:30 (1) 20:03	05:18 20:24	05:07 20:17	05:24 19:39	06:28 18:46	07:01 (1) 07:35 (1)	07:02 17:55	07:10 16:13
21	07:08 16:43	06:33 17:23	06:47 18:57	05:55 19:32	07:31 (1) 20:04	05:17 20:25	05:07 20:16	05:25 19:37	06:30 18:45	07:01 (1) 07:34 (1)	07:03 17:54	07:11 16:14
22	07:08 16:44	06:32 17:24	06:45 18:58	05:53 19:33	07:32 (1) 20:04	05:17 20:25	05:07 20:16	05:26 19:36	06:31 18:43	07:02 (1) 07:33 (1)	07:04 17:52	07:11 16:14
23	07:07 16:45	06:30 17:26	06:44 18:59	05:52 19:34	07:33 (1) 20:05	05:16 20:25	05:07 20:15	05:27 19:34	06:32 18:41	07:03 (1) 07:31 (1)	07:06 17:51	07:11 16:15
24	07:06 16:47	06:29 17:27	06:42 19:00	05:50 19:35	07:34 (1) 20:06	05:15 20:25	05:07 20:14	05:28 19:33	06:00 18:39	07:04 (1) 07:29 (1)	07:07 17:49	07:12 16:15
25	07:05 16:48	06:27 17:28	06:40 19:01	05:49 19:36	07:35 (1) 20:07	05:14 20:25	05:08 20:13	05:29 19:31	06:01 18:37	07:05 (1) 07:27 (1)	07:08 17:48	07:12 16:16
26	07:04 16:49	06:26 17:29	06:38 19:02	05:47 19:38	07:36 (1) 20:08	05:14 20:25	05:08 20:12	05:30 19:30	06:02 18:36	07:06 (1) 07:24 (1)	07:09 17:46	07:13 16:15
27	07:04 16:51	06:24 17:31	06:37 19:04	05:46 19:39	07:37 (1) 20:09	05:13 20:25	05:08 20:11	05:30 19:28	06:03 18:34	07:07 (1) 07:18 (1)	07:11 17:45	07:13 16:14
28	07:03 16:52	06:23 17:32	06:35 19:05	05:44 19:40	07:38 (1) 20:10	05:12 20:26	05:09 20:10	05:31 19:26	06:04 18:32	07:08 (1) 07:12	07:12 17:44	07:13 16:14
29	07:02 16:53		06:33 19:06	05:43 19:41	07:39 (1) 20:11	05:11 20:26	05:09 20:09	05:32 19:25	06:05 18:30	07:09 (1) 07:13	07:13 17:42	07:13 16:19
30	07:01 16:54		06:31 19:07	05:42 19:42	07:40 (1) 20:12	05:11 20:25	05:10 20:08	05:33 19:23	06:06 18:29	07:10 (1) 07:14	07:14 17:41	07:13 16:20
31	07:00 16:56		06:30 19:08	05:41 19:48	07:41 (1) 20:13	05:10 20:25	05:09 20:07	05:34 19:21	06:07 19:21	07:11 (1) 07:16	07:15 17:40	07:14 16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case			484	252					748			
Sun reduction			0.49	0.55					0.53			
Oper. time red.			0.93	0.93					0.93			
Wind dir. red.			0.73	0.73					0.73			
Total reduction			0.33	0.37					0.36			
Total, real			161	94					269			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 7

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar**Calculation: Elecon T600Shadow receptor: E - Middle School****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	06:59	06:21	06:28	05:40	05:10	05:10	05:36	06:08	06:40	06:17	06:53
	16:21	16:57	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38	16:12
2	07:14	06:58	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:18	06:54
	16:22	16:58	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37	16:12
3	07:14	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19	06:55
	16:23	17:00	17:35	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36	16:12
4	07:14	06:56	06:16	06:23	05:36	05:09	05:12	05:39	06:11	06:44	06:21	06:56
	16:24	17:01	17:37	19:13	19:47	20:16	20:25	20:02	19:14	18:22	16:34	16:12
5	07:14	06:55	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22	06:57
	16:25	17:02	17:38	19:14	19:48	20:17	20:25	20:01	19:13	18:20	16:33	16:11
6	07:14	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23	06:58
	16:26	17:04	17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32	16:11
7	07:14	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24	06:59
	16:27	17:05	17:40	19:16	19:50	20:18	20:24	19:57	19:09	18:17	16:31	16:11
8	07:14	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26	07:00
	16:28	17:06	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30	16:11
9	07:13	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27	07:01
	16:29	17:08	18:43	19:18	19:52	20:19	20:24	19:55	19:06	18:13	16:29	16:11
10	07:13	06:49	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28	07:02
	16:30	17:09	18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:11	16:28	16:11
11	07:13	06:47	07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29	07:03
	16:31	17:10	18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	16:11
12	07:13	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31	07:04
	16:32	17:12	18:46	19:22	19:55	20:21	20:22	19:51	19:01	18:08	16:25	16:11
13	07:12	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32	07:05
	16:33	17:13	18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:07	16:24	16:11
14	07:12	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33	07:05
	16:35	17:14	18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	16:12
15	07:12	06:42	06:57	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34	07:06
	16:36	17:15	18:50	19:25	19:58	20:22	20:21	19:47	18:55	18:03	16:23	16:12
16	07:11	06:41	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36	07:07
	16:37	17:17	18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	16:12
17	07:11	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37	07:08
	16:38	17:18	18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	16:12
18	07:10	06:38	06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38	07:08
	16:39	17:19	18:53	19:29	20:00	20:24	20:19	19:42	18:50	17:58	16:20	16:13
19	07:09	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39	07:09
	16:41	17:21	18:54	19:30	20:01	20:24	20:18	19:41	18:48	17:57	16:19	16:13
20	07:09	06:35	06:49	05:56	05:18	05:07	05:24	05:56	06:28	07:02	06:40	07:09
	16:42	17:22	18:56	19:31	20:02	20:24	20:17	19:39	18:46	17:55	16:18	16:13
21	07:08	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42	07:10
	16:43	17:23	18:57	19:32	20:03	20:25	20:16	19:37	18:45	17:54	16:18	16:14
22	07:07	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43	07:11
	16:44	17:24	18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	16:14
23	07:07	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44	07:11
	16:45	17:26	18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	16:15
24	07:06	06:29	06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45	07:12
	16:47	17:27	19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	16:15
25	07:05	06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46	07:12
	16:48	17:28	19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	16:16
26	07:04	06:26	06:38	05:47	05:14	05:08	05:30	06:02	06:35	07:09	06:48	07:12
	16:49	17:29	19:02	19:38	20:08	20:25	20:12	19:30	18:36	17:46	16:15	16:17
27	07:04	06:24	06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49	07:13
	16:51	17:31	19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	16:17
28	07:03	06:23	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50	07:13
	16:52	17:32	19:05	19:40	20:10	20:25	20:10	19:26	18:32	17:44	16:14	16:18
29	07:02		06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51	07:13
	16:53		19:06	19:41	20:11	20:25	20:09	19:25	18:30	17:42	16:13	16:19
30	07:01		06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52	07:13
	16:54		19:07	19:42	20:12	20:25		20:08	19:23	18:29	17:41	16:20
31	07:00		06:30		05:10		05:34	06:07		07:16		07:14
	16:56		19:08		20:13		20:07	19:21		17:40		16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 8

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar**Calculation: Elecon T600Shadow receptor: F - End of Nason Road****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	06:59	06:21	06:28	05:40	05:10	05:10	05:35	06:08	06:40	06:17	06:53
	16:21	16:57	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38	16:12
2	07:14	06:58	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:18	06:54
	16:22	16:58	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37	16:12
3	07:14	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19	06:55
	16:23	17:00	17:35	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36	16:12
4	07:14	06:56	06:16	06:23	05:36	05:08	05:12	05:39	06:11	06:44	06:21	06:56
	16:24	17:01	17:37	19:13	19:47	20:16	20:25	20:02	19:14	18:22	16:34	16:12
5	07:14	06:55	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22	06:57
	16:25	17:02	17:38	19:14	19:48	20:17	20:25	20:01	19:13	18:20	16:33	16:11
6	07:14	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23	06:58
	16:26	17:04	17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32	16:11
7	07:14	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24	06:59
	16:27	17:05	17:40	19:16	19:50	20:18	20:24	19:57	19:09	18:17	16:31	16:11
8	07:14	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26	07:00
	16:28	17:06	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30	16:11
9	07:13	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27	07:01
	16:29	17:08	18:43	19:18	19:52	20:19	20:23	19:55	19:06	18:13	16:29	16:11
10	07:13	06:49	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28	07:02
	16:30	17:09	18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:11	16:28	16:11
11	07:13	06:47	07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29	07:03
	16:31	17:10	18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	16:11
12	07:13	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31	07:04
	16:32	17:12	18:46	19:22	19:55	20:21	20:22	19:51	19:01	18:08	16:25	16:11
13	07:12	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32	07:05
	16:33	17:13	18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:07	16:24	16:11
14	07:12	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33	07:05
	16:35	17:14	18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	16:12
15	07:12	06:42	06:57	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34	07:06
	16:36	17:15	18:50	19:25	19:58	20:22	20:21	19:46	18:55	18:03	16:23	16:12
16	07:11	06:41	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36	07:07
	16:37	17:17	18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	16:12
17	07:11	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37	07:08
	16:38	17:18	18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	16:12
18	07:10	06:38	06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38	07:08
	16:39	17:19	18:53	19:29	20:00	20:24	20:19	19:42	18:50	17:58	16:20	16:13
19	07:09	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39	07:09
	16:41	17:21	18:54	19:30	20:01	20:24	20:18	19:41	18:48	17:57	16:19	16:13
20	07:09	06:35	06:49	05:56	05:18	05:07	05:24	05:56	06:28	07:02	06:40	07:09
	16:42	17:22	18:56	19:31	20:02	20:24	20:17	19:39	18:46	17:55	16:18	16:13
21	07:08	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42	07:10
	16:43	17:23	18:57	19:32	20:03	20:25	20:16	19:37	18:45	17:54	16:18	16:14
22	07:07	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43	07:11
	16:44	17:24	18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	16:14
23	07:07	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44	07:11
	16:45	17:26	18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	16:15
24	07:06	06:29	06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45	07:12
	16:47	17:27	19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	16:15
25	07:05	06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46	07:12
	16:48	17:28	19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	16:16
26	07:04	06:26	06:38	05:47	05:13	05:08	05:30	06:02	06:35	07:09	06:48	07:12
	16:49	17:29	19:02	19:38	20:08	20:25	20:12	19:30	18:36	17:46	16:15	16:17
27	07:04	06:24	06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49	07:13
	16:51	17:31	19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	16:17
28	07:03	06:22	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50	07:13
	16:52	17:32	19:05	19:40	20:10	20:25	20:10	19:26	18:32	17:44	16:14	16:18
29	07:02		06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51	07:13
	16:53		19:06	19:41	20:11	20:25	20:09	19:25	18:30	17:42	16:13	16:19
30	07:01		06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52	07:13
	16:54		19:07	19:42	20:12	20:25		20:08	19:23	18:29	17:41	16:20
31	07:00		06:30		05:10		05:34	06:07		07:16		07:14
	16:56		19:08		20:13		20:07	19:21		17:40		16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 9

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar**Calculation: Elecon T600Shadow receptor: G - Burke Drive****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	06:59	06:21	06:28	05:40	05:10	05:10	05:36	06:08	06:40	06:17	06:53
	16:21	16:57	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38	16:12
2	07:14	06:58	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:18	06:54
	16:22	16:58	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37	16:12
3	07:14	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19	06:55
	16:23	17:00	17:36	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36	16:12
4	07:14	06:56	06:16	06:23	05:36	05:09	05:12	05:39	06:11	06:44	06:21	06:56
	16:24	17:01	17:37	19:13	19:47	20:16	20:25	20:02	19:14	18:22	16:34	16:12
5	07:14	06:55	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22	06:57
	16:25	17:02	17:38	19:14	19:48	20:17	20:25	20:01	19:13	18:20	16:33	16:11
6	07:14	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23	06:58
	16:26	17:04	17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32	16:11
7	07:14	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24	06:59
	16:27	17:05	17:40	19:16	19:50	20:18	20:24	19:58	19:09	18:17	16:31	16:11
8	07:14	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26	07:00
	16:28	17:06	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30	16:11
9	07:13	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27	07:01
	16:29	17:08	18:43	19:18	19:52	20:19	20:24	19:55	19:06	18:13	16:29	16:11
10	07:13	06:49	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28	07:02
	16:30	17:09	18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:12	16:28	16:11
11	07:13	06:47	07:04	06:11	05:28	05:07	05:17	05:46	06:19	06:52	06:29	07:03
	16:31	17:10	18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	16:11
12	07:13	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31	07:04
	16:32	17:12	18:46	19:22	19:55	20:21	20:22	19:51	19:01	18:08	16:25	16:11
13	07:12	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32	07:05
	16:33	17:13	18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:07	16:24	16:11
14	07:12	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33	07:05
	16:35	17:14	18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	16:12
15	07:12	06:42	06:58	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34	07:06
	16:36	17:15	18:50	19:25	19:58	20:22	20:21	19:47	18:55	18:03	16:23	16:12
16	07:11	06:41	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36	07:07
	16:37	17:17	18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	16:12
17	07:11	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37	07:08
	16:38	17:18	18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	16:12
18	07:10	06:38	06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38	07:08
	16:39	17:19	18:53	19:29	20:00	20:24	20:19	19:42	18:50	17:58	16:20	16:13
19	07:09	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39	07:09
	16:41	17:21	18:54	19:30	20:02	20:24	20:18	19:41	18:48	17:57	16:19	16:13
20	07:09	06:35	06:49	05:56	05:18	05:07	05:24	05:56	06:28	07:02	06:40	07:10
	16:42	17:22	18:56	19:31	20:03	20:24	20:17	19:39	18:46	17:55	16:18	16:13
21	07:08	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42	07:10
	16:43	17:23	18:57	19:32	20:04	20:25	20:16	19:37	18:45	17:54	16:18	16:14
22	07:08	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43	07:11
	16:44	17:24	18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	16:14
23	07:07	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44	07:11
	16:45	17:26	18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	16:15
24	07:06	06:29	06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45	07:12
	16:47	17:27	19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	16:15
25	07:05	06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46	07:12
	16:48	17:28	19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	16:16
26	07:04	06:26	06:38	05:47	05:14	05:08	05:30	06:02	06:35	07:09	06:48	07:12
	16:49	17:29	19:02	19:38	20:08	20:25	20:12	19:30	18:36	17:46	16:15	16:17
27	07:04	06:24	06:37	05:46	05:13	05:08	05:31	06:03	06:36	07:11	06:49	07:13
	16:51	17:31	19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	16:17
28	07:03	06:23	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50	07:13
	16:52	17:32	19:05	19:40	20:10	20:26	20:10	19:26	18:32	17:44	16:14	16:18
29	07:02		06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51	07:13
	16:53		19:06	19:41	20:11	20:26	20:09	19:25	18:30	17:42	16:13	16:19
30	07:01		06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52	07:13
	16:55		19:07	19:42	20:12	20:25	20:08	19:23	18:29	17:41	16:13	16:20
31	07:00		06:30		05:10		05:34	06:07		07:16		07:14
	16:56		19:08		20:13		20:07	19:21		17:40		16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 10

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar**Calculation:** Elecon T600Shadow receptor: H - End of Neighborhood Road**Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	06:59	06:21	06:28	05:40	05:10	05:10	05:35	06:08	06:40	06:17	06:53
	16:21	16:57	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38	16:12
2	07:14	06:58	06:19	06:26	05:39	05:09	05:11	05:36	06:09	06:41	06:18	06:54
	16:22	16:58	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37	16:12
3	07:14	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19	06:55
	16:23	17:00	17:35	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36	16:12
4	07:14	06:56	06:16	06:23	05:36	05:08	05:12	05:39	06:11	06:44	06:20	06:56
	16:24	17:01	17:37	19:13	19:46	20:16	20:25	20:02	19:14	18:22	16:34	16:12
5	07:14	06:54	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22	06:57
	16:25	17:02	17:38	19:14	19:48	20:16	20:25	20:01	19:13	18:20	16:33	16:11
6	07:14	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23	06:58
	16:26	17:04	17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32	16:11
7	07:14	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24	06:59
	16:27	17:05	17:40	19:16	19:50	20:18	20:24	19:57	19:09	18:17	16:31	16:11
8	07:14	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26	07:00
	16:28	17:06	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30	16:11
9	07:13	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27	07:01
	16:29	17:08	18:43	19:18	19:52	20:19	20:23	19:55	19:06	18:13	16:29	16:11
10	07:13	06:48	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28	07:02
	16:30	17:09	18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:11	16:27	16:11
11	07:13	06:47	07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29	07:03
	16:31	17:10	18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	16:11
12	07:13	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31	07:04
	16:32	17:12	18:46	19:22	19:55	20:21	20:22	19:51	19:00	18:08	16:25	16:11
13	07:12	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32	07:05
	16:33	17:13	18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:06	16:24	16:11
14	07:12	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33	07:05
	16:35	17:14	18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	16:11
15	07:11	06:42	06:57	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34	07:06
	16:36	17:15	18:50	19:25	19:58	20:22	20:21	19:46	18:55	18:03	16:23	16:12
16	07:11	06:40	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36	07:07
	16:37	17:17	18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	16:12
17	07:11	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37	07:08
	16:38	17:18	18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	16:12
18	07:10	06:38	06:52	05:59	05:20	05:06	05:22	05:53	06:26	07:00	06:38	07:08
	16:39	17:19	18:53	19:28	20:00	20:24	20:19	19:42	18:50	17:58	16:20	16:13
19	07:09	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39	07:09
	16:40	17:21	18:54	19:30	20:01	20:24	20:18	19:41	18:48	17:57	16:19	16:13
20	07:09	06:35	06:49	05:56	05:18	05:07	05:24	05:55	06:28	07:02	06:40	07:09
	16:42	17:22	18:56	19:31	20:02	20:24	20:17	19:39	18:46	17:55	16:18	16:13
21	07:08	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:29	07:03	06:42	07:10
	16:43	17:23	18:57	19:32	20:03	20:25	20:16	19:37	18:45	17:54	16:18	16:14
22	07:07	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43	07:11
	16:44	17:24	18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	16:14
23	07:07	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44	07:11
	16:45	17:26	18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	16:15
24	07:06	06:29	06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45	07:11
	16:47	17:27	19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	16:15
25	07:05	06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46	07:12
	16:48	17:28	19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	16:16
26	07:04	06:26	06:38	05:47	05:13	05:08	05:29	06:02	06:35	07:09	06:48	07:12
	16:49	17:29	19:02	19:38	20:08	20:25	20:12	19:29	18:36	17:46	16:15	16:17
27	07:04	06:24	06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49	07:13
	16:51	17:31	19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	16:17
28	07:03	06:22	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50	07:13
	16:52	17:32	19:05	19:40	20:10	20:25	20:10	19:26	18:32	17:44	16:14	16:18
29	07:02		06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51	07:13
	16:53		19:06	19:41	20:11	20:25	20:09	19:25	18:30	17:42	16:13	16:19
30	07:01		06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52	07:13
	16:54		19:07	19:42	20:12	20:25		20:08	19:23	18:29	17:41	16:19
31	07:00		06:30		05:10		05:34	06:07		07:15		07:14
	16:56		19:08		20:13		20:07	19:21		17:40		16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 11

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

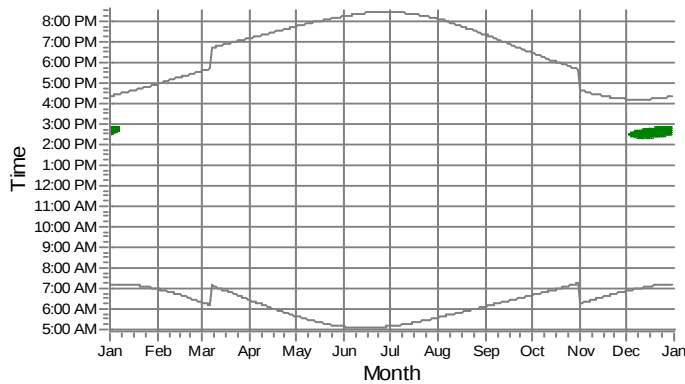
Calculated:

5/23/2011 1:57 PM/2.7.486

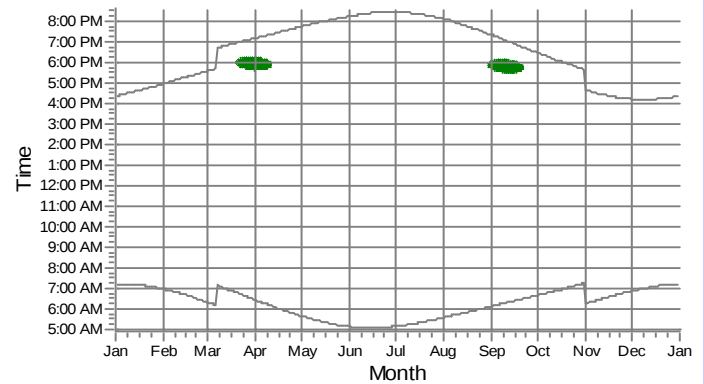
SHADOW - Calendar, graphical

Calculation: Elecon T600

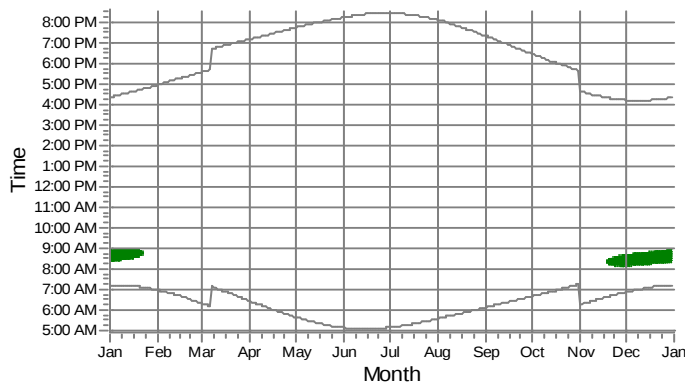
A: Tedesco Country Club



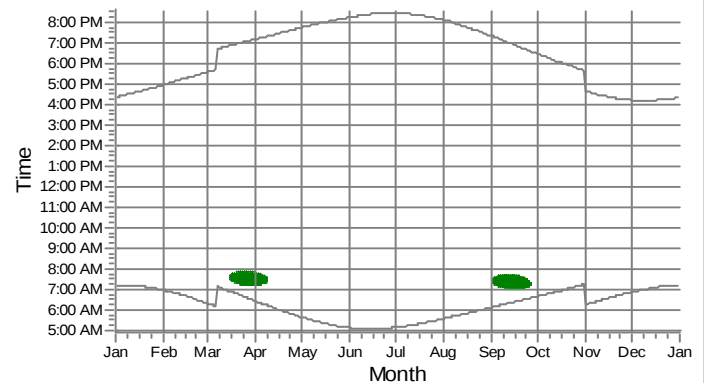
B: Davenport Drive



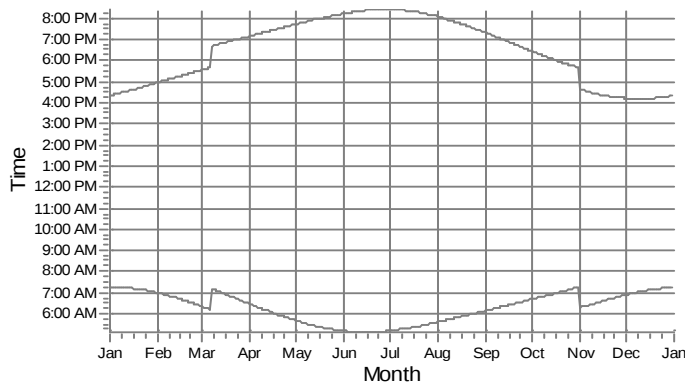
C: Route 1A



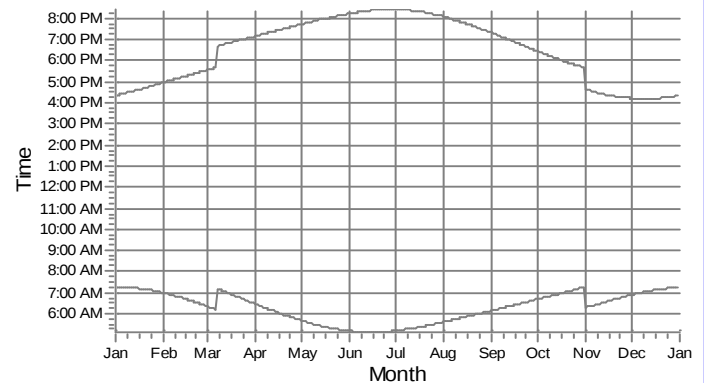
D: Parsons Drive



E: Middle School



F: End of Nason Road



WTGs



1: Elecon T600

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 12

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

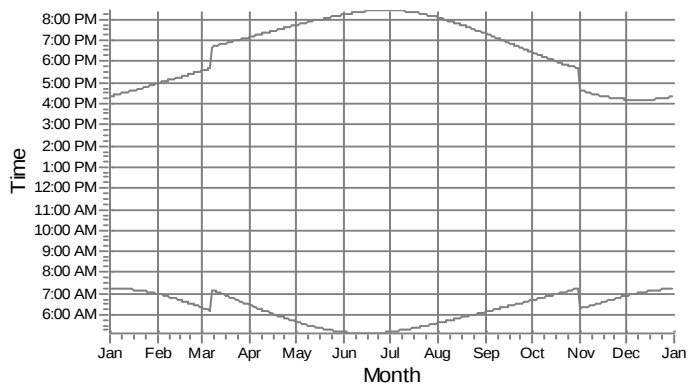
Calculated:

5/23/2011 1:57 PM/2.7.486

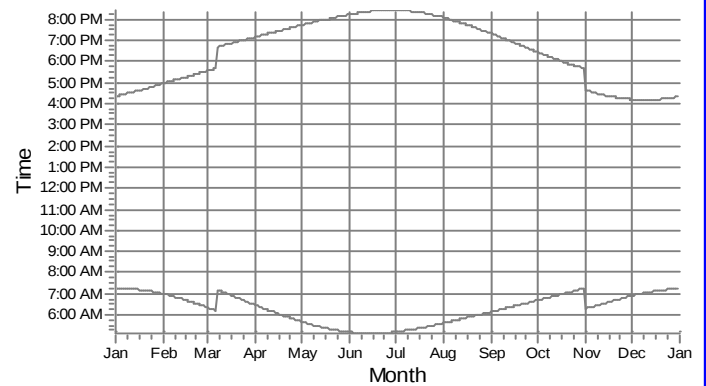
SHADOW - Calendar, graphical

Calculation: Elecon T600

G: Burke Drive



H: End of Neighborhood Road



WTGs

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 13

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar per WTG**Calculation: Elecon T600WTG: 1 - Elecon T600****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:14 08:20-08:53/33 16:21 14:27-14:49/22	06:59 06:21 16:57 17:33	06:21 17:33 06:19 17:34	06:28 07:10-07:47/37 19:09 17:35-18:10/35	05:40 19:43 05:39 20:13	05:10 20:13
2	07:14 08:20-08:54/34 16:22 14:28-14:49/21	06:58 06:19 16:58 17:34	06:18 17:34 06:18 17:35	06:26 07:10-07:45/35 19:10 17:34-18:09/35	05:37 19:44 05:37 20:14	05:09 20:14
3	07:14 08:21-08:54/33 16:23 14:29-14:49/20	06:57 06:18 17:00 17:35	06:18 17:35 06:16 17:36	06:24 07:11-07:45/34 19:12 17:35-18:10/35	05:37 19:45 05:36 20:15	05:09 20:15
4	07:14 08:21-08:55/34 16:24 14:30-14:49/19	06:56 06:16 17:01 17:37	06:16 17:37 06:14 17:38	06:23 07:11-07:43/32 19:13 17:35-18:09/34	05:36 19:47 05:35 20:16	05:08 20:16
5	07:14 08:22-08:55/33 16:25 14:32-14:48/16	06:55 06:14 17:02 17:38	06:14 17:38 06:13 17:39	06:21 07:12-07:42/30 19:14 17:35-18:08/33	05:35 19:48 05:34 20:17	05:08 20:17
6	07:14 08:23-08:56/33 16:26 14:34-14:48/14	06:53 06:13 17:04 17:39	06:13 17:39 06:11 17:40	06:19 07:14-07:41/27 19:15 17:36-18:08/32	05:34 19:49 05:32 20:17	05:08 20:17
7	07:14 08:23-08:56/33 16:27 14:36-14:47/11	06:52 06:11 17:05 17:40	06:11 17:40 06:09 17:41	06:18 07:15-07:38/23 19:16 17:36-18:06/30	05:32 19:50 05:31 20:18	05:07 20:18
8	07:14 08:23-08:56/33 16:28 14:38-14:44/6	06:51 07:09 17:06 18:42	07:09 18:42 07:08 18:43	06:16 07:16-07:36/20 19:17 17:37-18:05/28	05:31 19:51 05:30 20:19	05:07 20:19
9	07:13 08:24-08:56/32 16:29 17:08	06:50 07:08 17:08 18:43	07:08 18:43 07:06 18:44	06:14 07:19-07:33/14 19:18 17:38-18:04/26	05:30 19:52 05:29 20:19	05:07 20:19
10	07:13 08:25-08:57/32 16:30 17:09	06:49 07:06 17:09 18:44	07:06 18:44 07:04 18:45	06:13 17:39-18:01/22 19:19 17:44-17:56/12	05:29 19:53 05:28 20:20	05:07 20:20
11	07:13 08:25-08:56/31 16:31 17:10	06:47 07:04 17:10 18:45	07:04 18:45 07:03 18:46	06:11 17:41-17:59/18 19:21 19:54	05:28 19:54 05:26 20:20	05:07 20:20
12	07:13 08:26-08:56/30 16:32 17:12	06:46 07:03 17:12 18:46	07:03 18:46 07:01 18:47	06:09 17:44-17:56/12 19:22 19:55	05:26 19:55 05:25 20:21	05:06 20:21
13	07:12 08:27-08:57/30 16:33 17:13	06:45 07:01 17:13 18:47	07:01 18:47 06:59 18:49	06:08 05:25 19:23 19:56	05:25 05:06 05:24 20:21	05:06 20:21
14	07:12 08:27-08:56/29 16:35 17:14	06:43 06:59 17:14 18:49	06:59 18:49 06:57 18:50	06:06 05:24 19:24 19:57	05:24 20:22 05:23 20:22	05:06 20:22
15	07:12 08:29-08:57/28 16:36 17:15	06:42 06:57 17:15 18:50	06:57 18:50 06:56 18:51	06:04 05:23 19:25 19:58	05:23 20:22 05:22 20:22	05:06 20:22
16	07:11 08:29-08:56/27 16:37 17:17	06:41 06:56 17:17 18:51	06:56 18:51 06:54 18:52	06:03 05:22 19:26 19:59	05:22 20:23 05:21 20:23	05:06 20:23
17	07:11 08:30-08:55/25 16:38 17:18	06:39 06:54 17:18 18:52	06:54 18:52 06:52 18:53	06:01 05:21 19:27 20:00	05:21 20:23 05:20 20:24	05:06 20:24
18	07:10 08:31-08:55/24 16:39 17:19	06:38 06:52 17:19 18:53	06:52 18:53 06:51 18:54	06:00 05:20 19:29 20:01	05:20 20:24 05:19 20:24	05:06 20:24
19	07:09 08:32-08:54/22 16:41 17:21	06:36 06:51 17:21 18:54	06:51 18:54 06:49 18:56	05:58 05:19 19:30 20:01	05:19 20:24 05:18 20:24	05:06 20:24
20	07:09 08:34-08:54/20 16:42 17:22	06:35 06:49 17:22 18:56	06:49 18:56 06:47 18:57	05:56 05:18 19:31 20:03	05:18 20:24 05:17 20:24	05:07 20:24
21	07:08 08:36-08:52/16 16:43 17:23	06:33 06:47 17:23 18:57	06:47 18:57 06:45 18:58	05:55 05:17 19:32 20:03	05:17 20:25 05:17 20:25	05:07 20:25
22	07:08 08:38-08:50/12 16:44 17:24	06:32 06:45 17:24 18:58	06:45 18:58 06:44 18:59	05:53 05:16 19:33 20:04	05:16 20:25 05:16 20:25	05:07 20:25
23	07:07 08:41-08:47/6 16:45 17:26	06:30 06:44 17:26 18:59	06:44 18:59 06:42 18:59	05:52 05:15 19:34 20:05	05:15 20:25 05:15 20:25	05:07 20:25
24	07:06 16:47	06:29 17:27	06:42 19:00	05:50 19:35	05:15 20:25	05:07 20:25
25	07:05 16:48	06:27 17:28	06:40 19:01	05:49 19:36	05:14 20:25	05:08 20:25
26	07:04 16:49	06:26 17:29	06:38 19:02	05:47 19:38	05:13 20:25	05:08 20:25
27	07:04 16:51	06:24 17:31	06:37 19:04	05:46 19:39	05:13 20:25	05:08 20:25
28	07:03 16:52	06:23 17:32	06:35 19:05	05:44 19:40	05:12 20:25	05:09 20:25
29	07:02 16:53	06:23 17:32	06:33 19:06	05:43 19:41	05:12 20:25	05:09 20:25
30	07:01 16:54	06:23 17:32	06:31 19:07	05:42 19:42	05:11 20:25	05:10 20:25
31	07:00 16:56	06:23 17:32	06:30 19:08	05:42 19:42	05:10 20:25	05:10 20:25
Potential sun hours	293	295	370	401	452	457
Sum of minutes with flicker	759	0	782	592	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 14

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Calendar per WTG**Calculation: Elecon T600WTG: 1 - Elecon T600****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
926	347	138	164	321	334	326	394	841	1,211	2,172	935	8,109

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	05:10 20:25	05:35 20:06	06:08 17:40-17:58/18 19:20	06:40 18:27	06:17 16:38	06:53 08:07-08:38/31 16:12
2	05:11 20:25	05:37 20:05	06:09 17:37-17:59/22 19:18	06:41 18:25	06:18 16:37	06:54 08:08-08:40/32 16:12
3	05:11 20:25	05:38 20:04	06:10 07:16-07:30/14 19:16 17:35-18:01/26	06:43 18:23	06:19 16:36	06:55 08:08-08:40/32 16:12
4	05:12 20:25	05:39 20:02	06:11 07:13-07:33/20 19:14 17:34-18:02/28	06:44 18:22	06:21 16:34	06:56 08:08-08:41/33 16:12 14:24-14:29/5
5	05:12 20:25	05:40 20:01	06:13 07:11-07:34/23 19:13 17:32-18:02/30	06:45 18:20	06:22 16:33	06:57 08:08-08:41/33 16:11 14:21-14:32/11
6	05:13 20:24	05:41 20:00	06:14 07:09-07:36/27 19:11 17:31-18:03/32	06:46 18:18	06:23 16:32	06:58 08:09-08:42/33 16:11 14:20-14:34/14
7	05:14 20:24	05:42 19:58	06:15 07:07-07:37/30 19:09 17:30-18:03/33	06:47 18:17	06:24 16:31	06:59 08:09-08:42/33 16:11 14:19-14:35/16
8	05:14 20:24	05:43 19:56	06:16 07:07-07:38/31 19:08 17:29-18:03/34	06:48 18:15	06:26 16:30	07:00 08:09-08:43/34 16:11 14:19-14:37/18
9	05:15 20:24	05:44 19:55	06:17 07:05-07:39/34 19:06 17:28-18:03/35	06:49 18:13	06:27 16:29	07:01 08:10-08:43/33 16:11 14:18-14:38/20
10	05:16 20:23	05:45 19:54	06:18 07:04-07:39/35 19:04 17:28-18:04/36	06:50 18:11	06:28 16:28	07:02 08:09-08:43/34 16:11 14:17-14:38/21
11	05:16 20:23	05:46 19:52	06:19 07:03-07:40/37 19:02 17:28-18:03/35	06:52 18:10	06:29 16:26	07:03 08:10-08:43/33 16:11 14:17-14:39/22
12	05:17 20:22	05:47 19:51	06:20 07:03-07:40/37 19:01 17:27-18:03/36	06:53 18:08	06:31 16:25	07:04 08:10-08:44/34 16:11 14:17-14:40/23
13	05:18 20:22	05:48 19:49	06:21 07:02-07:40/38 18:59 17:27-18:02/35	06:54 18:07	06:32 16:24	07:05 08:11-08:45/34 16:11 14:17-14:41/24
14	05:19 20:21	05:49 19:48	06:22 07:01-07:39/38 18:57 17:27-18:01/34	06:55 18:05	06:33 16:23	07:05 08:12-08:45/33 16:12 14:18-14:42/24
15	05:20 20:21	05:50 19:47	06:23 07:01-07:39/38 18:55 17:27-18:01/34	06:56 18:03	06:34 16:23	07:06 08:11-08:45/34 16:12 14:17-14:42/25
16	05:20 20:20	05:51 19:45	06:24 07:01-07:39/38 18:53 17:27-17:59/32	06:57 18:02	06:36 16:22	07:07 08:12-08:46/34 16:12 14:17-14:43/26
17	05:21 20:19	05:52 19:44	06:25 07:00-07:38/38 18:52 17:28-17:58/30	06:59 18:00	06:37 16:21	07:08 08:13-08:47/34 16:12 14:18-14:44/26
18	05:22 20:19	05:53 19:42	06:26 07:00-07:37/37 18:50 17:28-17:57/29	07:00 17:58	06:38 16:20	07:08 08:13-08:47/34 16:13 14:18-14:44/26
19	05:23 20:18	05:54 19:41	06:27 07:00-07:37/37 18:48 17:29-17:55/26	07:01 17:57	06:39 08:16-08:22/6 16:19	07:09 08:14-08:47/33 16:13 14:18-14:45/27
20	05:24 20:17	05:56 19:39	06:28 07:01-07:35/34 18:46 17:30-17:53/23	07:02 17:55	06:40 08:13-08:25/12 16:18	07:09 08:15-08:48/33 16:13 14:19-14:46/27
21	05:25 20:16	05:57 19:37	06:30 07:01-07:34/33 18:45 17:32-17:50/18	07:03 17:54	06:42 08:11-08:27/16 16:18	07:10 08:14-08:48/34 16:14 14:19-14:46/27
22	05:26 20:16	05:58 19:36	06:31 07:02-07:33/31 18:43 17:35-17:46/11	07:04 17:52	06:43 08:10-08:30/20 16:17	07:11 08:15-08:49/34 16:14 14:20-14:47/27
23	05:27 20:15	05:59 19:34	06:32 07:03-07:31/28 18:41	07:06 17:51	06:44 08:09-08:31/22 16:16	07:11 08:16-08:49/33 16:15 14:20-14:47/27
24	05:28 20:14	06:00 19:33	06:33 07:04-07:29/25 18:39	07:07 17:49	06:45 08:08-08:32/24 16:16	07:12 08:16-08:49/33 16:15 14:20-14:47/27
25	05:29 20:13	06:01 19:31	06:34 07:05-07:27/22 18:37	07:08 17:48	06:46 08:08-08:33/25 16:15	07:12 08:17-08:50/33 16:16 14:22-14:48/26
26	05:30 20:12	06:02 19:30	06:35 07:07-07:24/17 18:36	07:09 17:46	06:48 08:08-08:35/27 16:15	07:12 08:17-08:51/34 16:17 14:22-14:48/26
27	05:30 20:11	06:03 19:28	06:36 07:12-07:18/6 18:34	07:11 17:45	06:49 08:08-08:36/28 16:14	07:13 08:17-08:51/34 16:17 14:22-14:48/26
28	05:31 20:10	06:04 19:26	06:37 18:32	07:12 17:44	06:50 08:07-08:36/29 16:14	07:13 08:18-08:52/34 16:18 14:24-14:49/25
29	05:32 20:09	06:05 19:25	06:38 18:30	07:13 17:42	06:51 08:07-08:37/30 16:13	07:13 08:19-08:52/33 16:19 14:24-14:49/25
30	05:33 20:08	06:06 19:23	06:39 18:29	07:14 17:41	06:52 08:07-08:37/30 16:13	07:13 08:19-08:53/34 16:20 14:25-14:49/24
31	05:34 20:07	06:07 19:21	17:43-17:55/12	07:16 17:40		07:14 08:19-08:53/34 16:20 14:26-14:49/23
Potential sun hours	464	431	375	343	294	283
Sum of minutes with flicker	0	12	1385	0	269	1672

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

5247Windpro

Printed/Page

5/23/2011 2:10 PM / 15

Licensed user:

Meridian Associates, Inc.

152 Conant Street

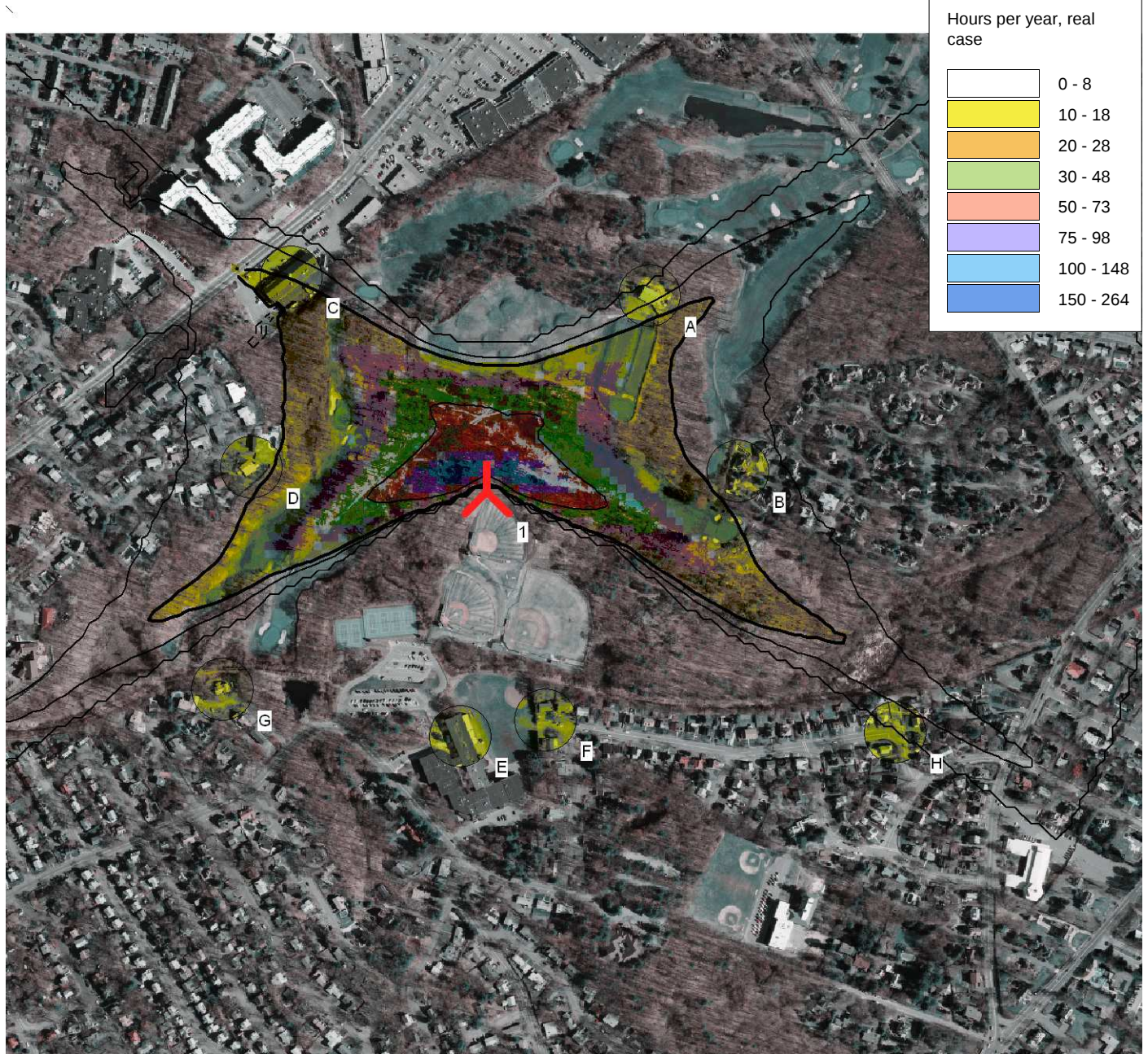
US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 1:57 PM/2.7.486

SHADOW - Map**Calculation:** Elecon T600WTG: 1 - Elecon T600

0 100 200 300 400 m

Map: , Print scale 1:7,500, Map center UTM NAD 83 Zone: 19 East: 343,760 North: 4,704,430

New WTG

Shadow receptor

Isolines showing shadow in Hours per year, real case

— 0

— 5

— 10

— 50

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 1

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Main Result

Calculation: GE 1.5sle

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational hours are calculated from WTGs in calculation and wind distribution:

SODAR

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values.

A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

Height contours used: Height Contours: CONTOURLINE_5247Windpro_0.wpo

Obstacles used in calculation

Eye height: 1.5 m

Grid resolution: 10 m



Scale 1:12,500

New WTG

Shadow receptor

WTGs

UTM NAD83 Zone: 19				WTG type						Shadow data		
East	North	Z	Row	Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Calculation distance	RPM	
		[m]	data/Description				[kW]	[m]	[m]	[m]	[RPM]	
UTM NAD83 Zone: 19												
1	343,656	4,704,476	27.7	GE 1.5sle	Yes	GE WIND ENERGY	GE 1.5sle-1,500	1,500	77.0	80.0	1,000	20.0

Shadow receptor-Input

UTM NAD83 Zone: 19											
No.	Name	East	North	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode	
				[m]	[m]	[m]	[m]	[°]	[°]		
A	Tedesco Country Club	343,854	4,704,716	28.8	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
B	Davenport Drive	343,962	4,704,501	14.0	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
C	Route 1A	343,416	4,704,739	16.1	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
D	Parsons Drive	343,368	4,704,506	36.7	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
E	Middle School	343,623	4,704,177	24.3	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
F	End of Nason Road	343,727	4,704,197	18.6	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
G	Burke Drive	343,332	4,704,234	23.7	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	
H	End of Neighborhood Road	344,154	4,704,182	13.2	1.0	1.0	1.0	-180.0	90.0	"Green house mode"	

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 2

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Main Result**Calculation:** GE 1.5sle**Calculation Results**

Shadow receptor

Shadow, expected values

No.	Name	Shadow hours per year [h/year]
A	Tedesco Country Club	18:22
B	Davenport Drive	18:25
C	Route 1A	22:16
D	Parsons Drive	21:42
E	Middle School	0:00
F	End of Nason Road	0:00
G	Burke Drive	0:00
H	End of Neighborhood Road	0:00

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
1	GE 1.5sle	264:46	80:46

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 3

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Calendar**Calculation: GE 1.5sleShadow receptor: A - Tedesco Country Club****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May		June		July		August		September		October		November		December	
1	07:14	60	14:00 (1)	06:59	17	14:34 (1)	06:21	06:28	05:40		05:10	05:10	05:35	06:08	06:40	06:17		06:53					13:47 (1)	
	16:21		15:00 (1)	16:57		14:51 (1)	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38			16:12	58				14:45 (1)	
2	07:14	60	14:00 (1)	06:58		14:41 (1)	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:18			06:54					13:47 (1)	
	16:22		15:00 (1)	16:58	3	14:44 (1)	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37			16:12	58				14:45 (1)	
3	07:14	60	14:01 (1)	06:57			06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19			06:55					13:48 (1)	
	16:23		15:01 (1)	17:00			17:35	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36			16:12	59				14:47 (1)	
4	07:14	60	14:01 (1)	06:56			06:16	06:23	05:36	05:08	05:12	05:39	06:11	06:44	06:21			06:56					13:48 (1)	
	16:24		15:01 (1)	17:01			17:37	19:13	19:47	20:16	20:25	20:02	19:14	18:22	16:34			16:12	59				14:47 (1)	
5	07:14	60	14:02 (1)	06:55			06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22			06:57					13:48 (1)	
	16:25		15:02 (1)	17:02			17:38	19:14	19:48	20:17	20:25	20:01	19:13	18:20	16:33			16:11	60				14:48 (1)	
6	07:14	60	14:03 (1)	06:53			06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23			06:58					13:49 (1)	
	16:26		15:02 (1)	17:04			17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32			16:11	59				14:48 (1)	
7	07:14	60	14:03 (1)	06:52			06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24			06:59					13:49 (1)	
	16:27		15:03 (1)	17:05			17:40	19:16	19:50	20:18	20:24	19:57	19:09	18:17	16:31			16:11	60				14:49 (1)	
8	07:14	60	14:03 (1)	06:51			07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26			07:00					13:49 (1)	
	16:28		15:02 (1)	17:06			18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30			16:11	60				14:49 (1)	
9	07:13	59	14:04 (1)	06:50			07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27			14:10 (1)					13:50 (1)	
	16:29		15:03 (1)	17:08			18:43	19:18	19:52	20:19	20:24	19:55	19:06	18:13	16:29	6		14:16 (1)	60				14:50 (1)	
10	07:13	59	14:05 (1)	06:49			07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28			14:04 (1)					13:49 (1)	
	16:30		15:03 (1)	17:09			18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:11	16:27	18		14:22 (1)	60				14:49 (1)	
11	07:13	58	14:05 (1)	06:47			07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29			14:01 (1)					13:50 (1)	
	16:31		15:03 (1)	17:10			18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	24		14:25 (1)	60				14:50 (1)	
12	07:13	58	14:06 (1)	06:46			07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31			13:58 (1)					13:50 (1)	
	16:32		15:04 (1)	17:12			18:46	19:22	19:55	20:21	20:22	19:51	19:01	18:08	16:25	29		14:27 (1)	61				14:51 (1)	
13	07:12	57	14:07 (1)	06:45			07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32			13:57 (1)					13:51 (1)	
	16:33		15:04 (1)	17:13			18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:07	16:24	32		14:29 (1)	60				14:51 (1)	
14	07:12	57	14:07 (1)	06:43			06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33			13:55 (1)					13:51 (1)	
	16:35		15:04 (1)	17:14			18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	36		14:31 (1)	61				14:52 (1)	
15	07:12	56	14:08 (1)	06:42			06:57	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34			13:53 (1)					13:51 (1)	
	16:36		15:04 (1)	17:15			18:50	19:25	19:58	20:22	20:21	19:46	18:55	18:03	16:23	39		14:32 (1)	61				14:52 (1)	
16	07:11	55	14:09 (1)	06:41			06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36			13:53 (1)					13:52 (1)	
	16:37		15:04 (1)	17:17			18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	41		14:34 (1)	61				14:53 (1)	
17	07:11	54	14:09 (1)	06:39			06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37			13:51 (1)					13:53 (1)	
	16:38		15:03 (1)	17:18			18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	44		14:35 (1)	60				14:53 (1)	
18	07:10	53	14:11 (1)	06:38			06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38			13:50 (1)					13:52 (1)	
	16:39		15:04 (1)	17:19			18:53	19:29	20:00	20:24	20:19	19:42	18:50	17:58	16:20	45		14:35 (1)	61				14:53 (1)	
19	07:09	52	14:11 (1)	06:36			06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39			13:50 (1)					13:53 (1)	
	16:40		15:03 (1)	17:21			18:54	19:30	20:01	20:24	20:18	19:41	18:48	17:57	16:19	47		14:37 (1)	61				14:54 (1)	
20	07:09	51	14:13 (1)	06:35			06:49	05:56	05:18	05:07	05:24	05:55	06:28	07:02	06:40			13:49 (1)					13:54 (1)	
	16:42		15:04 (1)	17:22			18:56	19:31	20:02	20:24	20:17	19:39	18:46	17:55	16:18	49		14:38 (1)	61				14:55 (1)	
21	07:08	50	14:13 (1)	06:33			06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42			13:48 (1)					13:54 (1)	
	16:43		15:03 (1)	17:23			18:57	19:32	20:03	20:25	20:16	19:37	18:45	17:54	16:18	50		14:38 (1)	61				14:55 (1)	
22	07:07	49	14:14 (1)	06:32			06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43			13:49 (1)					13:55 (1)	
	16:44		15:03 (1)	17:24			18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	51		14:40 (1)	61				14:56 (1)	
23	07:07	47	14:15 (1)	06:30			06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44			13:48 (1)					13:55 (1)	
	16:45		15:02 (1)	17:26			18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	52		14:40 (1)	61				14:56 (1)	
24	07:06	45	14:16 (1)	06:29			06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45			13:48 (1)					13:55 (1)	
	16:47		15:01 (1)	17:27			19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	53		14:41 (1)	61				14:56 (1)	
25	07:05	44	14:18 (1)	06:27			06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46			13:47 (1)					13:56 (1)	
	16:48		15:02 (1)	17:28			19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	54		14:41 (1)	61				14:57 (1)	
26	07:04	41	14:20 (1)	06:26			06:38	05:47	05:13	05:08	05:29	06:02	06:35	07:09	06:48			13:48 (1)					13:57 (1)	
	16:49		15:01 (1)	17:29			19:02	19:38	20:08	20:25	20:12	19:30	18:36	17:46	16:15	55		14:43 (1)	60				14:57 (1)	
27	07:04	39	14:21 (1)	06:24			06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49			13:47 (1)					13:57 (1)	
	16:51		15:00 (1)	17:31			19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	56		14:43 (1)	60				14:57 (1)	
28	07:03	36	14:23 (1)	06:22			06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50			13:47 (1)					13:58 (1)	
	16:52		14:59 (1)	17:32			19:05	19:40	20:10	20:25	20:10	19:26	18:32	17:44	16:14	57		14:44 (1)	61				14:59 (1)	
29	07:02	32	14:25 (1)				06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51			13:47 (1)					13:58 (1)	
	16:53		14:57 (1)				19:06	19:41	20:11	20:25	20:09	19:25	18:30	17:42	16:13	57		14:44 (1)	61				14:59 (1)	
30	07:01	29	14:27 (1)				06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52			13:47 (1)					13:59 (1)	
	16:54		14:56 (1)				19:07	19:42	20:12	20:25	20:08	19:23	18:29	17:41	16:13	58		14:45 (1)	60				14:59 (1)	
31	07:00	24	14:30 (1)				06:30		05:10		05:34	06:07		07:16				13:59 (1)					13:59 (1)	
	16:56		14:54 (1)				19:08		20:13		20:07	19:21		17:40				16:20	61				15:00 (1)	
Potential sun hours	293	295					370	401	452	457	464	431	375	343	294			283						
Total, worst case	1582	20																						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 4

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Calendar**Calculation: GE 1.5sleShadow receptor: B - Davenport Drive****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	06:59	06:21	06:28	17:16 (1) 05:40	05:10	05:10	05:35	06:08	17:12 (1) 06:40	06:17	06:53
2	07:14	06:58	06:19	06:26	17:15 (1) 05:39	05:09	05:11	05:37	06:09	17:11 (1) 06:41	06:18	06:54
3	07:14	06:57	06:18	06:24	17:14 (1) 05:38	05:09	05:11	05:38	06:10	17:10 (1) 06:43	06:19	06:55
4	07:14	06:56	06:17	06:23	17:13 (1) 05:37	05:08	05:12	05:39	06:11	17:09 (1) 06:44	06:20	06:56
5	07:14	06:55	06:16	06:21	17:12 (1) 05:36	05:08	05:12	05:40	06:13	17:08 (1) 06:45	06:22	06:57
6	07:14	06:53	06:13	06:19	17:11 (1) 05:34	05:08	05:13	05:41	06:14	17:07 (1) 06:46	06:23	06:58
7	07:14	06:52	06:11	06:18	17:10 (1) 05:32	05:07	05:14	05:42	06:15	17:06 (1) 06:47	06:24	06:59
8	07:14	06:51	07:09	06:16	17:09 (1) 05:31	05:07	05:14	05:43	06:16	17:05 (1) 06:48	06:26	07:00
9	07:13	06:50	07:08	06:14	17:08 (1) 05:30	05:07	05:15	05:44	06:17	17:04 (1) 06:49	06:27	07:01
10	07:13	06:49	07:06	06:13	17:07 (1) 05:29	05:07	05:16	05:45	06:18	17:03 (1) 06:50	06:28	07:02
11	07:13	06:47	07:04	06:11	17:06 (1) 05:28	05:07	05:16	05:46	06:19	17:02 (1) 06:51	06:29	07:03
12	07:13	06:46	07:03	06:09	17:05 (1) 05:26	05:06	05:17	05:47	06:20	17:01 (1) 06:52	06:30	07:04
13	07:12	06:45	07:01	06:08	17:04 (1) 05:25	05:06	05:18	05:48	06:21	17:00 (1) 06:53	06:31	07:05
14	07:12	06:43	06:59	06:06	17:03 (1) 05:24	05:06	05:19	05:49	06:22	16:59 (1) 06:54	06:32	07:06
15	07:12	06:42	06:57	06:04	17:02 (1) 05:23	05:06	05:20	05:50	06:23	16:58 (1) 06:55	06:33	07:07
16	07:11	06:41	06:56	06:03	17:01 (1) 05:22	05:06	05:21	05:51	06:24	16:57 (1) 06:56	06:34	07:08
17	07:11	06:39	06:54	06:01	17:00 (1) 05:21	05:06	05:22	05:52	06:25	16:56 (1) 06:57	06:35	07:09
18	07:10	06:38	06:52	06:00	16:59 (1) 05:20	05:06	05:23	05:53	06:26	16:55 (1) 06:58	06:36	07:10
19	07:09	06:36	06:51	05:58	16:58 (1) 05:19	05:06	05:24	05:54	06:27	16:54 (1) 06:59	06:37	07:11
20	07:09	06:35	06:49	05:56	16:57 (1) 05:18	05:07	05:25	05:55	06:28	16:53 (1) 07:00	06:38	07:12
21	07:08	06:33	06:47	05:55	16:56 (1) 05:17	05:07	05:26	05:56	06:29	16:52 (1) 07:01	06:39	07:13
22	07:07	06:32	06:45	05:53	16:55 (1) 05:16	05:07	05:27	05:57	06:30	16:51 (1) 07:02	06:40	07:14
23	07:07	06:30	06:44	05:52	16:54 (1) 05:15	05:07	05:28	05:58	06:31	16:50 (1) 07:03	06:41	07:15
24	07:06	06:29	06:42	05:50	16:53 (1) 05:14	05:07	05:29	05:59	06:32	16:49 (1) 07:04	06:42	07:16
25	07:05	06:27	06:40	05:49	16:52 (1) 05:13	05:08	05:30	06:00	06:33	16:48 (1) 07:05	06:43	07:17
26	07:04	06:26	06:38	05:47	16:51 (1) 05:12	05:08	05:31	06:01	06:34	16:47 (1) 07:06	06:44	07:18
27	07:04	06:24	06:37	05:46	16:50 (1) 05:11	05:09	05:32	06:02	06:35	16:46 (1) 07:07	06:45	07:19
28	07:03	06:22	06:35	05:44	16:49 (1) 05:10	05:10	05:33	06:03	06:36	16:45 (1) 07:08	06:46	07:20
29	07:02	06:20	06:33	05:42	16:48 (1) 05:09	05:11	05:34	06:04	06:37	16:44 (1) 07:09	06:47	07:21
30	07:01	06:18	06:31	05:40	16:47 (1) 05:08	05:12	05:35	06:05	06:38	16:43 (1) 07:10	06:48	07:22
31	07:00	06:16	06:29	05:38	16:46 (1) 05:07	05:13	05:36	06:06	06:39	16:42 (1) 07:11	06:49	07:23
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 5

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Calendar**Calculation: GE 1.5sleShadow receptor: C - Route 1A****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May		June		July		August		September		October		November		December	
1	07:14	08:20 (1)	06:59	08:33 (1)	06:21	06:28	05:40	05:10	05:10	05:35	06:08	06:40	06:17			06:53	08:04 (1)							
	16:21	09:08 (1)	16:57	41	09:14 (1)	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38		16:12	52	08:56 (1)						
2	07:14	08:20 (1)	06:58		08:35 (1)	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:18		08:21 (1)	06:54	08:06 (1)						
	16:22	09:09 (1)	16:58	38	09:13 (1)	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37	4	08:25 (1)	16:12	51	08:57 (1)					
3	07:14	08:20 (1)	06:57		08:36 (1)	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19		08:15 (1)	06:55	08:06 (1)						
	16:23	09:09 (1)	17:00	36	09:12 (1)	17:36	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36	16	08:31 (1)	16:12	51	08:57 (1)					
4	07:14	08:21 (1)	06:56		08:36 (1)	06:16	06:23	05:36	05:08	05:12	05:39	06:11	06:44	06:21		08:12 (1)	06:56	08:06 (1)						
	16:24	09:10 (1)	17:01	34	09:10 (1)	17:37	19:13	19:47	20:16	20:25	20:02	19:14	18:22	16:34	23	08:35 (1)	16:12	51	08:57 (1)					
5	07:14	08:21 (1)	06:55		08:38 (1)	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22		08:10 (1)	06:57	08:07 (1)						
	16:25	09:11 (1)	17:02	31	09:09 (1)	17:38	19:14	19:48	20:17	20:25	20:01	19:13	18:20	16:33	27	08:37 (1)	16:11	50	08:57 (1)					
6	07:14	08:21 (1)	06:53		08:40 (1)	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23		08:08 (1)	06:58	08:08 (1)						
	16:26	09:11 (1)	17:04	27	09:07 (1)	17:39	19:15	19:49	20:17	20:25	20:00	19:11	18:18	16:32	31	08:39 (1)	16:11	49	08:57 (1)					
7	07:14	08:22 (1)	06:52		08:43 (1)	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24		08:07 (1)	06:59	08:08 (1)						
	16:27	09:12 (1)	17:05	22	09:05 (1)	17:40	19:16	19:50	20:18	20:24	19:58	19:09	18:17	16:31	34	08:41 (1)	16:11	50	08:58 (1)					
8	07:14	08:21 (1)	06:51		08:46 (1)	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26		08:06 (1)	07:00	08:09 (1)						
	16:28	09:12 (1)	17:06	15	09:01 (1)	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30	36	08:42 (1)	16:11	49	08:58 (1)					
9	07:13	08:22 (1)	06:50		07:08	06:14	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27		08:04 (1)	07:01	08:09 (1)						
	16:29	09:13 (1)	17:08		18:43	19:18	19:52	20:19	20:24	19:55	19:06	18:13	16:29	39	08:43 (1)	16:11	49	08:58 (1)						
10	07:13	08:23 (1)	06:49		07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28		08:04 (1)	07:02	08:09 (1)							
	16:30	09:14 (1)	17:09		18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:12	16:28	41	08:45 (1)	16:11	49	08:58 (1)						
11	07:13	08:22 (1)	06:47		07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29		08:03 (1)	07:03	08:10 (1)							
	16:31	09:13 (1)	17:10		18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	43	08:46 (1)	16:11	48	08:58 (1)						
12	07:13	08:23 (1)	06:46		07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31		08:02 (1)	07:04	08:11 (1)							
	16:32	09:14 (1)	17:12		18:46	19:22	19:55	20:21	20:22	19:51	19:01	18:08	16:25	44	08:46 (1)	16:11	48	08:59 (1)						
13	07:12	08:24 (1)	06:45		07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32		08:02 (1)	07:05	08:11 (1)							
	16:33	09:15 (1)	17:13		18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:07	16:24	46	08:48 (1)	16:11	48	08:59 (1)						
14	07:12	08:23 (1)	06:43		06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33		08:02 (1)	07:05	08:12 (1)							
	16:35	09:15 (1)	17:14		18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	46	08:48 (1)	16:12	48	09:00 (1)						
15	07:12	08:24 (1)	06:42		06:58	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34		08:01 (1)	07:06	08:12 (1)							
	16:36	09:16 (1)	17:15		18:50	19:25	19:58	20:22	20:21	19:47	18:55	18:03	16:23	48	08:49 (1)	16:12	47	08:59 (1)						
16	07:11	08:24 (1)	06:41		06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36		08:02 (1)	07:07	08:13 (1)							
	16:37	09:16 (1)	17:17		18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	48	08:50 (1)	16:12	47	09:00 (1)						
17	07:11	08:24 (1)	06:39		06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37		08:01 (1)	07:08	08:14 (1)							
	16:38	09:16 (1)	17:18		18:52	19:27	20:01	20:23	20:19	19:44	18:52	18:00	16:21	49	08:50 (1)	16:12	47	09:01 (1)						
18	07:10	08:25 (1)	06:38		06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38		08:01 (1)	07:08	08:14 (1)							
	16:39	09:17 (1)	17:19		18:53	19:29	20:01	20:24	20:19	19:42	18:50	17:58	16:20	50	08:51 (1)	16:13	46	09:00 (1)						
19	07:09	08:25 (1)	06:36		06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39		08:01 (1)	07:09	08:14 (1)							
	16:41	09:17 (1)	17:21		18:54	19:30	20:02	20:24	20:18	19:41	18:48	17:57	16:19	51	08:52 (1)	16:13	47	09:01 (1)						
20	07:09	08:26 (1)	06:35		06:49	05:56	05:18	05:07	05:24	05:56	06:28	07:02	06:41		08:01 (1)	07:10	08:15 (1)							
	16:42	09:17 (1)	17:22		18:56	19:31	20:03	20:24	20:17	19:39	18:46	17:55	16:18	51	08:52 (1)	16:13	47	09:02 (1)						
21	07:08	08:26 (1)	06:33		06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42		08:01 (1)	07:10	08:15 (1)							
	16:43	09:17 (1)	17:23		18:57	19:32	20:04	20:25	20:16	19:37	18:45	17:54	16:18	51	08:52 (1)	16:14	47	09:02 (1)						
22	07:08	08:26 (1)	06:32		06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43		08:02 (1)	07:11	08:16 (1)							
	16:44	09:17 (1)	17:24		18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	51	08:53 (1)	16:14	47	09:03 (1)						
23	07:07	08:26 (1)	06:30		06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44		08:02 (1)	07:11	08:16 (1)							
	16:45	09:17 (1)	17:26		18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	52	08:54 (1)	16:15	47	09:03 (1)						
24	07:06	08:27 (1)	06:29		06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45		08:02 (1)	07:12	08:16 (1)							
	16:47	09:17 (1)	17:27		19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	52	08:54 (1)	16:15	47	09:03 (1)						
25	07:05	08:28 (1)	06:27		06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46		08:02 (1)	07:12	08:18 (1)							
	16:48	09:17 (1)	17:28		19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	52	08:54 (1)	16:16	46	09:04 (1)						
26	07:04	08:29 (1)	06:26		06:38	05:47	05:13	05:08	05:30	06:02	06:35	07:09	06:48		08:03 (1)	07:12	08:18 (1)							
	16:49	09:17 (1)	17:29		19:02	19:38	20:08	20:25	20:12	19:30	18:36	17:46	16:15	52	08:55 (1)	16:17	47	09:05 (1)						
27	07:04	08:29 (1)	06:24		06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49		08:03 (1)	07:13	08:18 (1)							
	16:51	09:17 (1)	17:31		19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	52	08:55 (1)	16:17	47	09:05 (1)						
28	07:03	08:30 (1)	06:23		06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50		08:03 (1)	07:13	08:19 (1)							
	16:52	09:16 (1)	17:32		19:05	19:40	20:10	20:26	20:10	19:26	18:32	17:44	16:14	52	08:55 (1)	16:18	47	09:06 (1)						
29	07:02	08:31 (1)			06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51		08:04 (1)	07:13	08:19 (1)							
	16:53	09:16 (1)			19:06	19:41	20:11	20:26	20:09	19:25	18:30	17:42	16:13	51	08:55 (1)	16:19	48	09:07 (1)						
30	07:01	08:31 (1)			06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52		08:04 (1)	07:13	08:19 (1)							
	16:54	09:15 (1)			19:07	19:42	20:12	20:25	20:08	19:														

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: GE 1.5sleShadow receptor: D - Parsons Drive

Assumptions for shadow calculations

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	[January	[February	[March		[April		[May	[June	[July	[August		[September		[October	[November	[December	
1	07:14	06:59	06:21		06:28		07:10 (1)	05:40	05:10	05:36		06:08		07:07 (1)	06:40	06:17	06:53
	16:21	16:57	17:33		19:09	59	08:09 (1)	19:43	20:13	20:25		19:20	55	08:02 (1)	18:27	16:38	16:12
2	07:14	06:58	06:19		06:26		07:09 (1)	05:39	05:09	05:11		06:09		07:06 (1)	06:41	06:18	06:54
	16:22	16:58	17:34		19:10	60	08:09 (1)	19:44	20:14	20:25		19:18	57	08:03 (1)	18:25	16:37	16:12
3	07:14	06:57	06:18		06:24		07:09 (1)	05:37	05:09	05:11		06:10		07:06 (1)	06:43	06:19	06:55
	16:23	17:00	17:36		19:12	60	08:09 (1)	19:45	20:15	20:25		19:16	57	08:03 (1)	18:23	16:36	16:12
4	07:14	06:56	06:16		06:23		07:09 (1)	05:36	05:09	05:12		06:11		07:05 (1)	06:44	06:21	06:56
	16:24	17:01	17:37		19:13	60	08:09 (1)	19:47	20:16	20:25		19:14	58	08:03 (1)	18:22	16:34	16:12
5	07:14	06:55	06:14		06:21		07:08 (1)	05:35	05:08	05:12		06:13		07:04 (1)	06:45	06:22	06:57
	16:25	17:02	17:38		19:14	60	08:08 (1)	19:48	20:17	20:25		19:13	59	08:03 (1)	18:20	16:33	16:11
6	07:14	06:53	06:13		06:19		07:09 (1)	05:34	05:08	05:13		06:14		07:04 (1)	06:46	06:23	06:58
	16:26	17:04	17:39		19:15	59	08:08 (1)	19:49	20:17	20:24		19:11	59	08:03 (1)	18:18	16:32	16:11
7	07:14	06:52	06:11		06:18		07:08 (1)	05:32	05:07	05:14		06:15		07:03 (1)	06:47	06:24	06:59
	16:27	17:05	17:40		19:16	59	08:07 (1)	19:50	20:18	20:24		19:09	60	08:03 (1)	18:17	16:31	16:11
8	07:14	06:51	07:09		06:16		07:08 (1)	05:31	05:07	05:14		06:16		07:04 (1)	06:48	06:26	07:00
	16:28	17:06	18:42		19:17	58	08:06 (1)	19:51	20:19	20:24		19:08	60	08:04 (1)	18:15	16:30	16:11
9	07:13	06:50	07:08		06:14		07:09 (1)	05:30	05:07	05:15		06:17		07:04 (1)	06:49	06:27	07:01
	16:29	17:08	18:43		19:18	57	08:06 (1)	19:52	20:19	20:24		19:06	59	08:03 (1)	18:13	16:29	16:11
10	07:13	06:49	07:06		06:13		07:08 (1)	05:29	05:07	05:16		06:18		07:03 (1)	06:50	06:28	07:02
	16:30	17:09	18:44		19:19	57	08:05 (1)	19:53	20:20	20:23		19:04	60	08:03 (1)	18:12	16:28	16:11
11	07:13	06:47	07:04		06:11		07:08 (1)	05:28	05:07	05:16		06:19		07:03 (1)	06:52	06:29	07:03
	16:31	17:10	18:45		19:21	55	08:03 (1)	19:54	20:20	20:23		19:02	59	08:02 (1)	18:10	16:26	16:11
12	07:13	06:46	07:03		06:09		07:09 (1)	05:26	05:06	05:17		06:20		07:03 (1)	06:53	06:31	07:04
	16:32	17:12	18:46		19:22	54	08:03 (1)	19:55	20:21	20:22		19:01	59	08:02 (1)	18:08	16:25	16:11
13	07:12	06:45	07:01		06:08		07:09 (1)	05:25	05:06	05:18		06:21		07:03 (1)	06:54	06:32	07:05
	16:33	17:13	18:47		19:23	53	08:02 (1)	19:56	20:21	20:22		18:59	58	08:01 (1)	18:07	16:24	16:11
14	07:12	06:43	06:59		06:06		07:09 (1)	05:24	05:06	05:19		06:22		07:03 (1)	06:55	06:33	07:05
	16:35	17:14	18:49		19:24	51	08:00 (1)	19:57	20:22	20:21		18:57	57	08:00 (1)	18:05	16:23	16:12
15	07:12	06:42	06:58		06:04		07:10 (1)	05:23	05:06	05:20		06:23		07:03 (1)	06:56	06:34	07:06
	16:36	17:15	18:50		19:25	49	07:59 (1)	19:58	20:22	20:21		18:55	56	07:59 (1)	18:03	16:23	16:12
16	07:11	06:41	06:56		06:03		07:11 (1)	05:22	05:06	05:20		06:24		07:03 (1)	06:57	06:36	07:07
	16:37	17:17	18:51	9	07:49 (1)	47	07:58 (1)	19:59	20:23	20:20		18:53	55	07:58 (1)	18:02	16:22	16:12
17	07:11	06:39	06:54		07:34 (1)	06:01	07:12 (1)	05:21	05:06	05:21		06:25		07:04 (1)	06:59	06:37	07:08
	16:38	17:18	18:52	21	07:55 (1)	45	07:57 (1)	20:00	20:23	20:19		18:52	53	07:57 (1)	18:00	16:21	16:12
18	07:10	06:38	06:52		07:31 (1)	06:00	07:13 (1)	05:20	05:06	05:22		06:26		07:04 (1)	07:00	06:38	07:08
	16:39	17:19	18:53	28	07:59 (1)	42	07:55 (1)	20:00	20:24	20:19		18:50	52	07:56 (1)	17:58	16:20	16:13
19	07:09	06:36	06:51		07:28 (1)	05:58	07:13 (1)	05:19	05:06	05:23		06:27		07:05 (1)	07:01	06:39	07:09
	16:41	17:21	18:54	33	08:01 (1)	39	07:52 (1)	20:02	20:24	20:18		19:41	17	07:46 (1)	18:48	16:19	16:13
20	07:09	06:35	06:49		07:25 (1)	05:56	07:15 (1)	05:18	05:07	05:24		06:26		07:06 (1)	07:02	06:40	07:10
	16:42	17:22	18:56	37	08:02 (1)	36	07:51 (1)	20:03	20:24	20:17		19:39	23	07:49 (1)	18:46	16:18	16:13
21	07:08	06:33	06:47		07:23 (1)	05:55	07:16 (1)	05:17	05:07	05:25		06:27		07:23 (1)	06:30	07:06 (1)	07:03
	16:43	17:23	18:57	41	08:04 (1)	32	07:48 (1)	20:04	20:25	20:16		19:37	29	07:52 (1)	18:45	16:18	16:14
22	07:08	06:32	06:45		07:21 (1)	05:53	07:19 (1)	05:17	05:07	05:26		06:28		07:21 (1)	06:31	07:07 (1)	07:04
	16:44	17:24	18:58	45	08:06 (1)	28	07:47 (1)	20:04	20:25	20:16		19:36	33	07:54 (1)	18:43	16:17	16:14
23	07:07	06:30	06:44		07:19 (1)	05:52	07:21 (1)	05:16	05:07	05:27		06:29		07:19 (1)	06:32	07:09 (1)	07:06
	16:45	17:26	18:59	48	08:07 (1)	22	07:43 (1)	20:05	20:25	20:15		19:34	36	07:55 (1)	18:41	16:16	16:11
24	07:06	06:29	06:42		07:18 (1)	05:50	07:25 (1)	05:15	05:07	05:28		06:00		07:17 (1)	06:33	07:10 (1)	07:07
	16:47	17:27	19:00	49	08:07 (1)	14	07:39 (1)	20:06	20:25	20:14		19:33	40	07:57 (1)	18:39	16:16	16:12
25	07:05	06:27	06:40		07:16 (1)	05:49		05:14	05:08	05:29		06:01		07:15 (1)	06:34	07:12 (1)	07:08
	16:48	17:28	19:01	52	08:08 (1)	20:07		20:25	20:13	19:31		19:31	43	07:58 (1)	18:37	16:15	16:16
26	07:04	06:26	06:38		07:16 (1)	05:47		05:14	05:08	05:30		06:02		07:14 (1)	06:35	07:15 (1)	07:09
	16:49	17:29	19:02	53	08:09 (1)	20:08		20:25	20:12	19:30		19:30	45	07:59 (1)	18:36	16:15	16:17
27	07:04	06:24	06:37		07:14 (1)	05:46		05:13	05:08	05:30		06:03		07:13 (1)	06:36	07:19 (1)	07:13
	16:51	17:31	19:04	55	08:09 (1)	20:09		20:25	20:11	19:28		19:28	47	08:00 (1)	18:34	16:14	16:17
28	07:03	06:23	06:35		07:13 (1)	05:44		05:12	05:09	05:31		06:04		07:11 (1)	06:37	07:12	07:13
	16:52	17:32	19:05	56	08:09 (1)	20:10		20:26	20:10	19:26		19:26	49	08:00 (1)	18:32	16:14	16:18
29	07:02		06:33		07:12 (1)	05:43		05:12	05:09	05:32		06:05		07:10 (1)	06:38	07:13	07:13
	16:53		19:06	57	08:09 (1)	19:41		20:11	20:26	20:09		19:25	51	08:01 (1)	18:30	16:13	16:19
30	07:01		06:31		07:12 (1)	05:42		05:11	05:10	05:33		06:06		07:09 (1)	06:39	07:14	07:13
	16:54		19:07	58	08:10 (1)	19:42		20:12	20:25	20:08		19:23	53	08:02 (1)	18:29	16:13	16:20
31	07:00		06:30		07:11 (1)			05:10		05:34		06:07		07:08 (1)		07:16	07:14
	16:56		19:08	59	08:10 (1)			20:13		20:07		19:21	54	08:02 (1)		17:40	16:20
Potential sun hours	293	295	370		401		452	457	464	431		375		343	294	283	
Total, worst case			701		1156					520		1361					
Sun reduction			0.49		0.55					0.66		0.53					
Oper. time red.			0.87		0.87					0.87		0.87					
Wind dir. red.			0.73		0.73					0.73		0.73					
Total reduction			0.31		0.35					0.42		0.34					
Total, real			219		404					219		461					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 7

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Calendar**Calculation: GE 1.5sleShadow receptor: E - Middle School****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	06:59	06:21	06:28	05:40	05:10	05:10	05:36	06:08	06:40	06:17	06:53
	16:21	16:57	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38	16:12
2	07:14	06:58	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:18	06:54
	16:22	16:58	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37	16:12
3	07:14	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19	06:55
	16:23	17:00	17:35	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36	16:12
4	07:14	06:56	06:16	06:23	05:36	05:09	05:12	05:39	06:11	06:44	06:21	06:56
	16:24	17:01	17:37	19:13	19:47	20:16	20:25	20:02	19:14	18:22	16:34	16:12
5	07:14	06:55	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22	06:57
	16:25	17:02	17:38	19:14	19:48	20:17	20:25	20:01	19:13	18:20	16:33	16:11
6	07:14	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23	06:58
	16:26	17:04	17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32	16:11
7	07:14	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24	06:59
	16:27	17:05	17:40	19:16	19:50	20:18	20:24	19:57	19:09	18:17	16:31	16:11
8	07:14	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26	07:00
	16:28	17:06	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30	16:11
9	07:13	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27	07:01
	16:29	17:08	18:43	19:18	19:52	20:19	20:24	19:55	19:06	18:13	16:29	16:11
10	07:13	06:49	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28	07:02
	16:30	17:09	18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:11	16:28	16:11
11	07:13	06:47	07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29	07:03
	16:31	17:10	18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	16:11
12	07:13	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31	07:04
	16:32	17:12	18:46	19:22	19:55	20:21	20:22	19:51	19:01	18:08	16:25	16:11
13	07:12	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32	07:05
	16:33	17:13	18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:07	16:24	16:11
14	07:12	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33	07:05
	16:35	17:14	18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	16:12
15	07:12	06:42	06:57	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34	07:06
	16:36	17:15	18:50	19:25	19:58	20:22	20:21	19:47	18:55	18:03	16:23	16:12
16	07:11	06:41	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36	07:07
	16:37	17:17	18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	16:12
17	07:11	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37	07:08
	16:38	17:18	18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	16:12
18	07:10	06:38	06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38	07:08
	16:39	17:19	18:53	19:29	20:00	20:24	20:19	19:42	18:50	17:58	16:20	16:13
19	07:09	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39	07:09
	16:41	17:21	18:54	19:30	20:01	20:24	20:18	19:41	18:48	17:57	16:19	16:13
20	07:09	06:35	06:49	05:56	05:18	05:07	05:24	05:56	06:28	07:02	06:40	07:09
	16:42	17:22	18:56	19:31	20:02	20:24	20:17	19:39	18:46	17:55	16:18	16:13
21	07:08	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42	07:10
	16:43	17:23	18:57	19:32	20:03	20:25	20:16	19:37	18:45	17:54	16:18	16:14
22	07:07	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43	07:11
	16:44	17:24	18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	16:14
23	07:07	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44	07:11
	16:45	17:26	18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	16:15
24	07:06	06:29	06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45	07:12
	16:47	17:27	19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	16:15
25	07:05	06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46	07:12
	16:48	17:28	19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	16:16
26	07:04	06:26	06:38	05:47	05:14	05:08	05:30	06:02	06:35	07:09	06:48	07:12
	16:49	17:29	19:02	19:38	20:08	20:25	20:12	19:30	18:36	17:46	16:15	16:17
27	07:04	06:24	06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49	07:13
	16:51	17:31	19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	16:17
28	07:03	06:23	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50	07:13
	16:52	17:32	19:05	19:40	20:10	20:25	20:10	19:26	18:32	17:44	16:14	16:18
29	07:02		06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51	07:13
	16:53		19:06	19:41	20:11	20:25	20:09	19:25	18:30	17:42	16:13	16:19
30	07:01		06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52	07:13
	16:54		19:07	19:42	20:12	20:25		20:08	19:23	18:29	17:41	16:20
31	07:00		06:30		05:10		05:34	06:07		07:16		07:14
	16:56		19:08		20:13		20:07	19:21		17:40		16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 8

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Calendar**Calculation: GE 1.5sleShadow receptor: F - End of Nason Road****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	06:59	06:21	06:28	05:40	05:10	05:10	05:35	06:08	06:40	06:17	06:53
	16:21	16:57	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38	16:12
2	07:14	06:58	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:18	06:54
	16:22	16:58	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37	16:12
3	07:14	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19	06:55
	16:23	17:00	17:35	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36	16:12
4	07:14	06:56	06:16	06:23	05:36	05:08	05:12	05:39	06:11	06:44	06:21	06:56
	16:24	17:01	17:37	19:13	19:47	20:16	20:25	20:02	19:14	18:22	16:34	16:12
5	07:14	06:55	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22	06:57
	16:25	17:02	17:38	19:14	19:48	20:17	20:25	20:01	19:13	18:20	16:33	16:11
6	07:14	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23	06:58
	16:26	17:04	17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32	16:11
7	07:14	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24	06:59
	16:27	17:05	17:40	19:16	19:50	20:18	20:24	19:57	19:09	18:17	16:31	16:11
8	07:14	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26	07:00
	16:28	17:06	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30	16:11
9	07:13	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27	07:01
	16:29	17:08	18:43	19:18	19:52	20:19	20:23	19:55	19:06	18:13	16:29	16:11
10	07:13	06:49	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28	07:02
	16:30	17:09	18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:11	16:28	16:11
11	07:13	06:47	07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29	07:03
	16:31	17:10	18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	16:11
12	07:13	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31	07:04
	16:32	17:12	18:46	19:22	19:55	20:21	20:22	19:51	19:01	18:08	16:25	16:11
13	07:12	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32	07:05
	16:33	17:13	18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:07	16:24	16:11
14	07:12	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33	07:05
	16:35	17:14	18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	16:12
15	07:12	06:42	06:57	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34	07:06
	16:36	17:15	18:50	19:25	19:58	20:22	20:21	19:46	18:55	18:03	16:23	16:12
16	07:11	06:41	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36	07:07
	16:37	17:17	18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	16:12
17	07:11	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37	07:08
	16:38	17:18	18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	16:12
18	07:10	06:38	06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38	07:08
	16:39	17:19	18:53	19:29	20:00	20:24	20:19	19:42	18:50	17:58	16:20	16:13
19	07:09	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39	07:09
	16:41	17:21	18:54	19:30	20:01	20:24	20:18	19:41	18:48	17:57	16:19	16:13
20	07:09	06:35	06:49	05:56	05:18	05:07	05:24	05:56	06:28	07:02	06:40	07:09
	16:42	17:22	18:56	19:31	20:02	20:24	20:17	19:39	18:46	17:55	16:18	16:13
21	07:08	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42	07:10
	16:43	17:23	18:57	19:32	20:03	20:25	20:16	19:37	18:45	17:54	16:18	16:14
22	07:07	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43	07:11
	16:44	17:24	18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	16:14
23	07:07	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44	07:11
	16:45	17:26	18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	16:15
24	07:06	06:29	06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45	07:12
	16:47	17:27	19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	16:15
25	07:05	06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46	07:12
	16:48	17:28	19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	16:16
26	07:04	06:26	06:38	05:47	05:13	05:08	05:30	06:02	06:35	07:09	06:48	07:12
	16:49	17:29	19:02	19:38	20:08	20:25	20:12	19:30	18:36	17:46	16:15	16:17
27	07:04	06:24	06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49	07:13
	16:51	17:31	19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	16:17
28	07:03	06:22	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50	07:13
	16:52	17:32	19:05	19:40	20:10	20:25	20:10	19:26	18:32	17:44	16:14	16:18
29	07:02		06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51	07:13
	16:53		19:06	19:41	20:11	20:25	20:09	19:25	18:30	17:42	16:13	16:19
30	07:01		06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52	07:13
	16:54		19:07	19:42	20:12	20:25		20:08	19:23	18:29	17:41	16:20
31	07:00		06:30		05:10		05:34	06:07		07:16		07:14
	16:56		19:08		20:13		20:07	19:21		17:40		16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 9

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Calendar**Calculation: GE 1.5sleShadow receptor: G - Burke Drive****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	06:59	06:21	06:28	05:40	05:10	05:10	05:36	06:08	06:40	06:17	06:53
	16:21	16:57	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38	16:12
2	07:14	06:58	06:19	06:26	05:39	05:09	05:11	05:37	06:09	06:41	06:18	06:54
	16:22	16:58	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37	16:12
3	07:14	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19	06:55
	16:23	17:00	17:36	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36	16:12
4	07:14	06:56	06:16	06:23	05:36	05:09	05:12	05:39	06:11	06:44	06:21	06:56
	16:24	17:01	17:37	19:13	19:47	20:16	20:25	20:02	19:14	18:22	16:34	16:12
5	07:14	06:55	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22	06:57
	16:25	17:02	17:38	19:14	19:48	20:17	20:25	20:01	19:13	18:20	16:33	16:11
6	07:14	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23	06:58
	16:26	17:04	17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32	16:11
7	07:14	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24	06:59
	16:27	17:05	17:40	19:16	19:50	20:18	20:24	19:58	19:09	18:17	16:31	16:11
8	07:14	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26	07:00
	16:28	17:06	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30	16:11
9	07:13	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27	07:01
	16:29	17:08	18:43	19:18	19:52	20:19	20:24	19:55	19:06	18:13	16:29	16:11
10	07:13	06:49	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28	07:02
	16:30	17:09	18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:12	16:28	16:11
11	07:13	06:47	07:04	06:11	05:28	05:07	05:17	05:46	06:19	06:52	06:29	07:03
	16:31	17:10	18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	16:11
12	07:13	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31	07:04
	16:32	17:12	18:46	19:22	19:55	20:21	20:22	19:51	19:01	18:08	16:25	16:11
13	07:12	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32	07:05
	16:33	17:13	18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:07	16:24	16:11
14	07:12	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33	07:05
	16:35	17:14	18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	16:12
15	07:12	06:42	06:58	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34	07:06
	16:36	17:15	18:50	19:25	19:58	20:22	20:21	19:47	18:55	18:03	16:23	16:12
16	07:11	06:41	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36	07:07
	16:37	17:17	18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	16:12
17	07:11	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37	07:08
	16:38	17:18	18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	16:12
18	07:10	06:38	06:52	06:00	05:20	05:06	05:22	05:53	06:26	07:00	06:38	07:08
	16:39	17:19	18:53	19:29	20:00	20:24	20:19	19:42	18:50	17:58	16:20	16:13
19	07:09	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39	07:09
	16:41	17:21	18:54	19:30	20:02	20:24	20:18	19:41	18:48	17:57	16:19	16:13
20	07:09	06:35	06:49	05:56	05:18	05:07	05:24	05:56	06:28	07:02	06:40	07:10
	16:42	17:22	18:56	19:31	20:03	20:24	20:17	19:39	18:46	17:55	16:18	16:13
21	07:08	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:30	07:03	06:42	07:10
	16:43	17:23	18:57	19:32	20:04	20:25	20:16	19:37	18:45	17:54	16:18	16:14
22	07:08	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43	07:11
	16:44	17:24	18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	16:14
23	07:07	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44	07:11
	16:45	17:26	18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	16:15
24	07:06	06:29	06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45	07:12
	16:47	17:27	19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	16:15
25	07:05	06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46	07:12
	16:48	17:28	19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	16:16
26	07:04	06:26	06:38	05:47	05:14	05:08	05:30	06:02	06:35	07:09	06:48	07:12
	16:49	17:29	19:02	19:38	20:08	20:25	20:12	19:30	18:36	17:46	16:15	16:17
27	07:04	06:24	06:37	05:46	05:13	05:08	05:31	06:03	06:36	07:11	06:49	07:13
	16:51	17:31	19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	16:17
28	07:03	06:23	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50	07:13
	16:52	17:32	19:05	19:40	20:10	20:26	20:10	19:26	18:32	17:44	16:14	16:18
29	07:02		06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51	07:13
	16:53		19:06	19:41	20:11	20:26	20:09	19:25	18:30	17:42	16:13	16:19
30	07:01		06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52	07:13
	16:55		19:07	19:42	20:12	20:25		20:08	19:23	18:29	17:41	16:20
31	07:00		06:30		05:10		05:34	06:07		07:16		07:14
	16:56		19:08		20:13		20:07	19:21		17:40		16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 10

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Calendar**Calculation: GE 1.5sleShadow receptor: H - End of Neighborhood Road****Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:14	06:59	06:21	06:28	05:40	05:10	05:10	05:35	06:08	06:40	06:17	06:53
	16:21	16:57	17:33	19:09	19:43	20:13	20:25	20:06	19:20	18:27	16:38	16:12
2	07:14	06:58	06:19	06:26	05:39	05:09	05:11	05:36	06:09	06:41	06:18	06:54
	16:22	16:58	17:34	19:10	19:44	20:14	20:25	20:05	19:18	18:25	16:37	16:12
3	07:14	06:57	06:18	06:24	05:37	05:09	05:11	05:38	06:10	06:43	06:19	06:55
	16:23	17:00	17:35	19:12	19:45	20:15	20:25	20:04	19:16	18:23	16:36	16:12
4	07:14	06:56	06:16	06:23	05:36	05:08	05:12	05:39	06:11	06:44	06:20	06:56
	16:24	17:01	17:37	19:13	19:46	20:16	20:25	20:02	19:14	18:22	16:34	16:12
5	07:14	06:54	06:14	06:21	05:35	05:08	05:12	05:40	06:13	06:45	06:22	06:57
	16:25	17:02	17:38	19:14	19:48	20:16	20:25	20:01	19:13	18:20	16:33	16:11
6	07:14	06:53	06:13	06:19	05:34	05:08	05:13	05:41	06:14	06:46	06:23	06:58
	16:26	17:04	17:39	19:15	19:49	20:17	20:24	20:00	19:11	18:18	16:32	16:11
7	07:14	06:52	06:11	06:18	05:32	05:07	05:14	05:42	06:15	06:47	06:24	06:59
	16:27	17:05	17:40	19:16	19:50	20:18	20:24	19:57	19:09	18:17	16:31	16:11
8	07:14	06:51	07:09	06:16	05:31	05:07	05:14	05:43	06:16	06:48	06:26	07:00
	16:28	17:06	18:42	19:17	19:51	20:19	20:24	19:56	19:08	18:15	16:30	16:11
9	07:13	06:50	07:08	06:14	05:30	05:07	05:15	05:44	06:17	06:49	06:27	07:01
	16:29	17:08	18:43	19:18	19:52	20:19	20:23	19:55	19:06	18:13	16:29	16:11
10	07:13	06:48	07:06	06:13	05:29	05:07	05:16	05:45	06:18	06:50	06:28	07:02
	16:30	17:09	18:44	19:19	19:53	20:20	20:23	19:54	19:04	18:11	16:27	16:11
11	07:13	06:47	07:04	06:11	05:28	05:07	05:16	05:46	06:19	06:52	06:29	07:03
	16:31	17:10	18:45	19:21	19:54	20:20	20:23	19:52	19:02	18:10	16:26	16:11
12	07:13	06:46	07:03	06:09	05:26	05:06	05:17	05:47	06:20	06:53	06:31	07:04
	16:32	17:12	18:46	19:22	19:55	20:21	20:22	19:51	19:00	18:08	16:25	16:11
13	07:12	06:45	07:01	06:08	05:25	05:06	05:18	05:48	06:21	06:54	06:32	07:05
	16:33	17:13	18:47	19:23	19:56	20:21	20:22	19:49	18:59	18:06	16:24	16:11
14	07:12	06:43	06:59	06:06	05:24	05:06	05:19	05:49	06:22	06:55	06:33	07:05
	16:35	17:14	18:49	19:24	19:57	20:22	20:21	19:48	18:57	18:05	16:23	16:11
15	07:11	06:42	06:57	06:04	05:23	05:06	05:20	05:50	06:23	06:56	06:34	07:06
	16:36	17:15	18:50	19:25	19:58	20:22	20:21	19:46	18:55	18:03	16:23	16:12
16	07:11	06:40	06:56	06:03	05:22	05:06	05:20	05:51	06:24	06:57	06:36	07:07
	16:37	17:17	18:51	19:26	19:59	20:23	20:20	19:45	18:53	18:02	16:22	16:12
17	07:11	06:39	06:54	06:01	05:21	05:06	05:21	05:52	06:25	06:59	06:37	07:08
	16:38	17:18	18:52	19:27	20:00	20:23	20:19	19:44	18:52	18:00	16:21	16:12
18	07:10	06:38	06:52	05:59	05:20	05:06	05:22	05:53	06:26	07:00	06:38	07:08
	16:39	17:19	18:53	19:28	20:00	20:24	20:19	19:42	18:50	17:58	16:20	16:13
19	07:09	06:36	06:51	05:58	05:19	05:06	05:23	05:54	06:27	07:01	06:39	07:09
	16:40	17:21	18:54	19:30	20:01	20:24	20:18	19:41	18:48	17:57	16:19	16:13
20	07:09	06:35	06:49	05:56	05:18	05:07	05:24	05:55	06:28	07:02	06:40	07:09
	16:42	17:22	18:56	19:31	20:02	20:24	20:17	19:39	18:46	17:55	16:18	16:13
21	07:08	06:33	06:47	05:55	05:17	05:07	05:25	05:57	06:29	07:03	06:42	07:10
	16:43	17:23	18:57	19:32	20:03	20:25	20:16	19:37	18:45	17:54	16:18	16:14
22	07:07	06:32	06:45	05:53	05:17	05:07	05:26	05:58	06:31	07:04	06:43	07:11
	16:44	17:24	18:58	19:33	20:04	20:25	20:16	19:36	18:43	17:52	16:17	16:14
23	07:07	06:30	06:44	05:52	05:16	05:07	05:27	05:59	06:32	07:06	06:44	07:11
	16:45	17:26	18:59	19:34	20:05	20:25	20:15	19:34	18:41	17:51	16:16	16:15
24	07:06	06:29	06:42	05:50	05:15	05:07	05:28	06:00	06:33	07:07	06:45	07:11
	16:47	17:27	19:00	19:35	20:06	20:25	20:14	19:33	18:39	17:49	16:16	16:15
25	07:05	06:27	06:40	05:49	05:14	05:08	05:29	06:01	06:34	07:08	06:46	07:12
	16:48	17:28	19:01	19:36	20:07	20:25	20:13	19:31	18:37	17:48	16:15	16:16
26	07:04	06:26	06:38	05:47	05:13	05:08	05:29	06:02	06:35	07:09	06:48	07:12
	16:49	17:29	19:02	19:38	20:08	20:25	20:12	19:29	18:36	17:46	16:15	16:17
27	07:04	06:24	06:37	05:46	05:13	05:08	05:30	06:03	06:36	07:11	06:49	07:13
	16:51	17:31	19:04	19:39	20:09	20:25	20:11	19:28	18:34	17:45	16:14	16:17
28	07:03	06:22	06:35	05:44	05:12	05:09	05:31	06:04	06:37	07:12	06:50	07:13
	16:52	17:32	19:05	19:40	20:10	20:25	20:10	19:26	18:32	17:44	16:14	16:18
29	07:02		06:33	05:43	05:12	05:09	05:32	06:05	06:38	07:13	06:51	07:13
	16:53		19:06	19:41	20:11	20:25	20:09	19:25	18:30	17:42	16:13	16:19
30	07:01		06:31	05:42	05:11	05:10	05:33	06:06	06:39	07:14	06:52	07:13
	16:54		19:07	19:42	20:12	20:25		20:08	19:23	18:29	17:41	16:19
31	07:00		06:30		05:10		05:34	06:07		07:15		07:14
	16:56		19:08		20:13		20:07	19:21		17:40		16:20
Potential sun hours	293	295	370	401	452	457	464	431	375	343	294	283
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 11

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

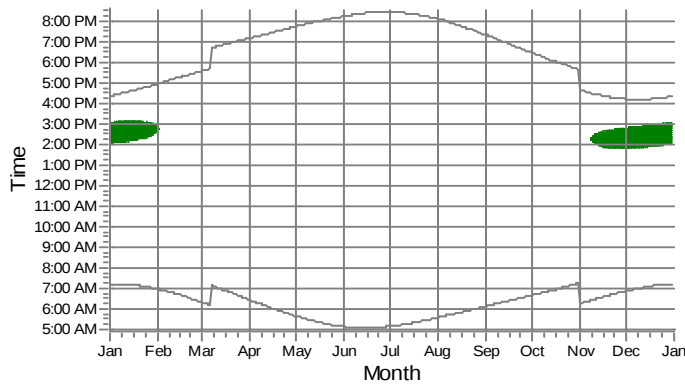
Calculated:

5/23/2011 2:21 PM/2.7.486

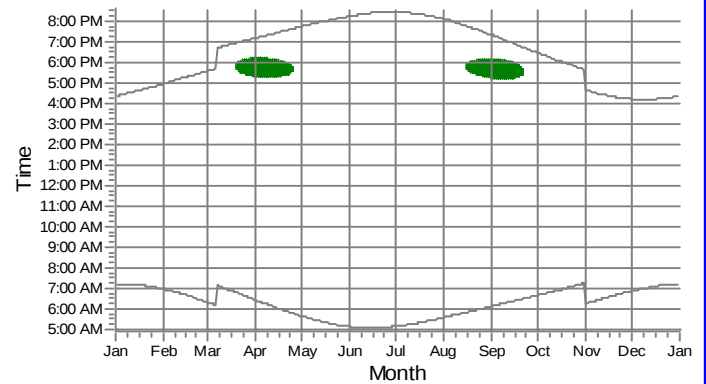
SHADOW - Calendar, graphical

Calculation: GE 1.5sle

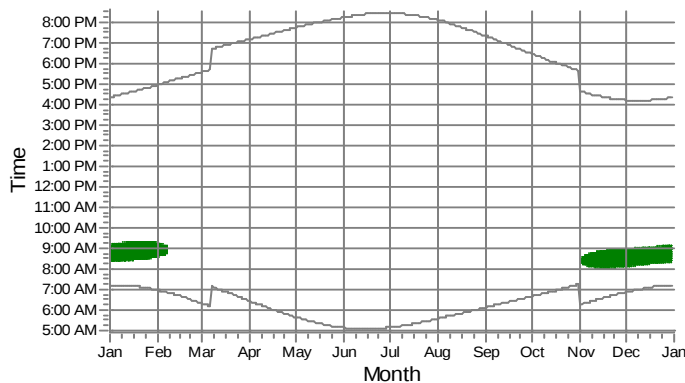
A: Tedesco Country Club



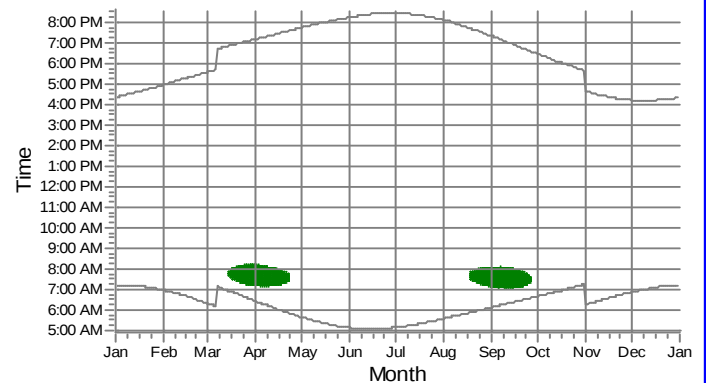
B: Davenport Drive



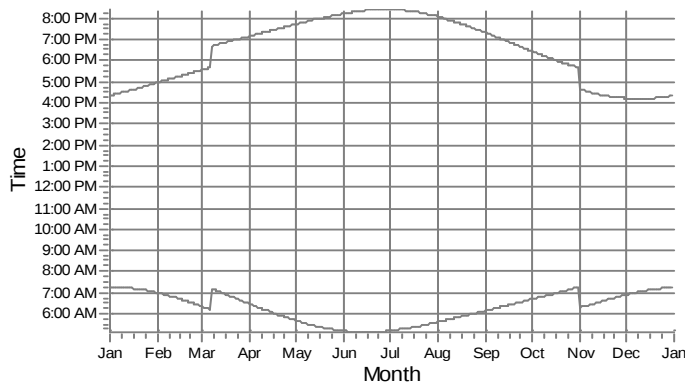
C: Route 1A



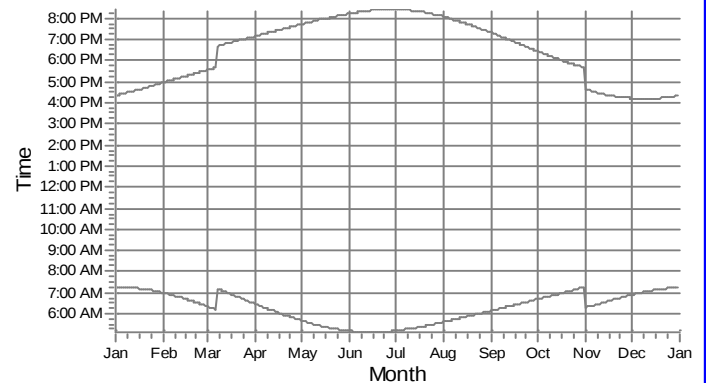
D: Parsons Drive



E: Middle School



F: End of Nason Road



WTGs



1: GE 1.5sle

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 12

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

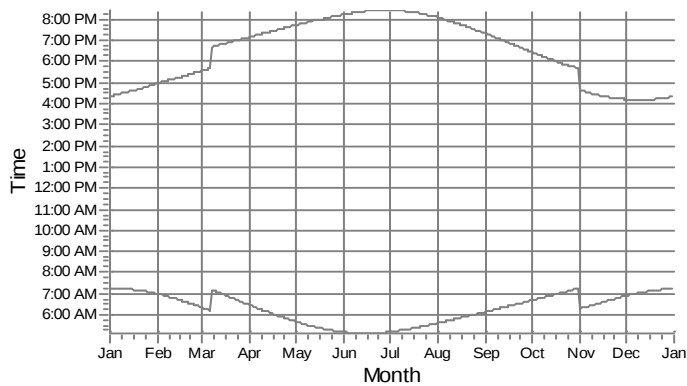
Calculated:

5/23/2011 2:21 PM/2.7.486

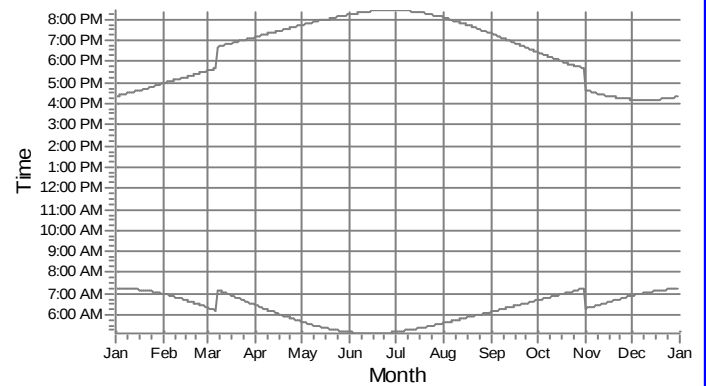
SHADOW - Calendar, graphical

Calculation: GE 1.5sle

G: Burke Drive



H: End of Neighborhood Road



WTGs

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 13

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Calendar per WTG**Calculation:** GE 1.5sleWTG: 1 - GE 1.5sle**Assumptions for shadow calculations**

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	07:14 08:20-09:08/48 16:21 14:00-15:00/60	06:59 08:33-09:14/41 16:57 14:34-14:51/17	06:21 17:33	06:28 07:10-08:09/59 19:09 17:16-18:08/52	05:40 19:43	05:10 20:13
2	07:14 08:20-09:09/49 16:22 14:00-15:00/60	06:58 08:35-09:13/38 16:58 14:41-14:44/3	06:19 17:34	06:26 07:09-08:09/60 19:10 17:15-18:08/53	05:39 19:44	05:09 20:14
3	07:14 08:20-09:09/49 16:23 14:01-15:01/60	06:57 08:36-09:12/36 17:00	06:18 17:35	06:24 07:09-08:09/60 19:12 17:15-18:09/54	05:37 19:45	05:09 20:15
4	07:14 08:21-09:10/49 16:24 14:01-15:01/60	06:56 08:36-09:10/34 17:01	06:16 17:37	06:23 07:09-08:09/60 19:13 17:14-18:09/55	05:36 19:47	05:08 20:16
5	07:14 08:21-09:11/50 16:25 14:02-15:02/60	06:55 08:38-09:09/31 17:02	06:14 17:38	06:21 07:08-08:08/60 19:14 17:13-18:08/55	05:35 19:48	05:08 20:17
6	07:14 08:21-09:11/50 16:26 14:03-15:02/59	06:53 08:40-09:07/27 17:04	06:13 17:39	06:19 07:09-08:08/59 19:15 17:14-18:09/55	05:34 19:49	05:08 20:17
7	07:14 08:22-09:12/50 16:27 14:03-15:03/60	06:52 08:43-09:05/22 17:05	06:11 17:40	06:18 07:08-08:07/59 19:16 17:13-18:08/55	05:32 19:50	05:07 20:18
8	07:14 08:21-09:12/51 16:28 14:03-15:02/59	06:51 08:46-09:01/15 17:06	07:09 18:42	06:16 07:08-08:06/58 19:17 17:13-18:08/55	05:31 19:51	05:07 20:19
9	07:13 08:22-09:13/51 16:29 14:04-15:03/59	06:50 17:08 18:43	07:08 18:43	06:14 07:09-08:06/57 19:18 17:13-18:08/55	05:30 19:52	05:07 20:19
10	07:13 08:23-09:14/51 16:30 14:05-15:03/58	06:49 17:09 18:44	07:06 18:44	06:13 07:08-08:05/57 19:19 17:13-18:07/54	05:29 19:53	05:07 20:20
11	07:13 08:22-09:13/51 16:31 14:05-15:03/58	06:47 17:10 18:45	07:04 18:45	06:11 07:08-08:03/55 19:21 17:13-18:06/53	05:28 19:54	05:07 20:20
12	07:13 08:23-09:14/51 16:32 14:06-15:04/58	06:46 17:12 18:46	07:03 18:46	06:09 07:09-08:03/54 19:22 17:14-18:06/52	05:26 19:55	05:06 20:21
13	07:12 08:24-09:15/51 16:33 14:07-15:04/57	06:45 17:13 18:47	07:01 18:47	06:08 07:09-08:02/53 19:23 17:14-18:05/51	05:25 19:56	05:06 20:21
14	07:12 08:23-09:15/52 16:35 14:07-15:04/57	06:43 17:14 18:49	06:59 18:49	06:06 07:09-08:00/51 19:24 17:14-18:04/50	05:24 19:57	05:06 20:22
15	07:12 08:24-09:16/52 16:36 14:08-15:04/56	06:42 17:15 18:50	06:57 18:50	06:04 07:10-07:59/49 19:25 17:15-18:04/49	05:23 19:58	05:06 20:22
16	07:11 08:24-09:16/52 16:37 14:09-15:04/55	06:41 17:17 18:51	06:56 07:40-07:49/9 18:51	06:03 07:11-07:58/47 19:26 17:15-18:03/48	05:22 19:59	05:06 20:23
17	07:11 08:24-09:16/52 16:38 14:09-15:03/54	06:39 17:18 18:52	06:54 07:34-07:55/21 18:52	06:01 07:12-07:57/45 19:27 17:16-18:02/46	05:21 20:00	05:06 20:23
18	07:10 08:25-09:17/52 16:39 14:11-15:04/53	06:38 17:19 18:53	06:52 07:31-07:59/28 18:53	06:00 07:13-07:55/42 19:29 17:17-18:01/44	05:20 20:00	05:06 20:24
19	07:09 08:25-09:17/52 16:41 14:11-15:03/52	06:36 17:21 18:54	06:51 07:28-08:01/33 18:54	05:58 07:13-07:52/39 19:30 17:17-17:59/42	05:19 20:01	05:06 20:24
20	07:09 08:26-09:17/51 16:42 14:13-15:04/51	06:35 17:22 18:56	06:49 07:25-08:02/37 18:56	05:56 07:15-07:51/36 19:31 17:19-17:58/39	05:18 20:03	05:07 20:24
21	07:08 08:26-09:17/51 16:43 14:13-15:03/50	06:33 17:23 18:57	06:47 07:23-08:04/41 17:37-17:52/15	05:55 07:16-07:48/32 19:32 17:19-17:56/37	05:17 20:03	05:07 20:25
22	07:08 08:26-09:17/51 16:44 14:14-15:03/49	06:32 17:24 18:58	06:45 07:21-08:06/45 17:34-17:57/23	05:53 07:19-07:47/28 19:33 17:21-17:55/34	05:17 20:04	05:07 20:25
23	07:07 08:26-09:17/51 16:45 14:15-15:02/47	06:30 17:26 18:59	06:44 07:19-08:07/48 17:30-17:59/29	05:52 07:21-07:43/22 19:34 17:22-17:52/30	05:16 20:05	05:07 20:25
24	07:06 08:27-09:17/50 16:47 14:16-15:01/45	06:29 17:27 19:00	06:42 07:18-08:07/49 17:27-18:01/34	05:50 07:25-07:39/14 19:35 17:25-17:51/26	05:15 20:06	05:07 20:25
25	07:05 08:28-09:17/49 16:48 14:18-15:02/44	06:27 17:28 19:01	06:40 07:16-08:08/52 17:25-18:03/38	05:49 17:28-17:48/20 19:36	05:14 20:07	05:08 20:25
26	07:04 08:29-09:17/48 16:49 14:20-15:01/41	06:26 17:29 19:02	06:38 07:16-08:09/53 17:24-18:05/41	05:47 17:31-17:44/13 19:38	05:13 20:08	05:08 20:25
27	07:04 08:29-09:17/48 16:51 14:21-15:00/39	06:24 17:31 19:04	06:37 07:14-08:09/55 17:22-18:05/43	05:46 19:39	05:13 20:09	05:08 20:25
28	07:03 08:30-09:16/46 16:52 14:23-14:59/36	06:23 17:32 19:05	06:35 07:13-08:09/56 17:20-18:06/46	05:44 19:40	05:12 20:10	05:09 20:25
29	07:02 08:31-09:16/45 16:53 14:25-14:57/32	06:22 17:33 19:06	06:33 07:12-08:09/57 17:19-18:06/47	05:43 19:41	05:12 20:11	05:09 20:25
30	07:01 08:31-09:15/44 16:54 14:27-14:56/29	06:21 17:34 19:07	06:31 07:12-08:10/58 17:18-18:08/50	05:42 19:42	05:11 20:12	05:10 20:25
31	07:00 08:32-09:15/43 16:56 14:30-14:54/24	06:20 17:35 19:08	06:30 07:11-08:10/59 17:17-18:08/51	05:41 20:13	05:10 20:13	05:10 20:25
Potential sun hours	293	295	370	401	452	457
Sum of minutes with flicker	3122	264	1118	2333	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 14

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Calendar per WTG

Calculation: GE 1.5sleWTG: 1 - GE 1.5sle

Assumptions for shadow calculations

Maximum distance for influence

1,000 m

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [PORTLAND]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.33	5.56	5.86	7.36	7.36	8.60	8.76	9.21	6.67	6.36	4.57	4.07

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
896	376	112	154	300	302	295	370	793	1,133	2,135	781	7,647

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	05:10 20:25	05:35 20:06	06:08 07:07-08:02/55 19:20 17:12-18:05/53	06:40 18:27	06:17 16:38	06:53 08:04-08:56/52 16:12 13:47-14:45/58
2	05:11 20:25	05:37 20:05	06:09 07:06-08:03/57 19:18 17:11-18:05/54	06:41 18:25	06:18 08:21-08:25/4 16:37	06:54 08:06-08:57/51 16:12 13:47-14:45/58
3	05:11 20:25	05:38 20:04	06:10 07:06-08:03/57 19:16 17:10-18:05/55	06:43 18:23	06:19 08:15-08:31/16 16:36	06:55 08:06-08:57/51 16:12 13:48-14:47/59
4	05:12 20:25	05:39 20:02	06:11 07:05-08:03/58 19:14 17:10-18:05/55	06:44 18:22	06:21 08:12-08:35/23 16:34	06:56 08:06-08:57/51 16:12 13:48-14:47/59
5	05:12 20:25	05:40 20:01	06:13 07:04-08:03/59 19:13 17:09-18:04/55	06:45 18:20	06:22 08:10-08:37/27 16:33	06:57 08:07-08:57/50 16:11 13:48-14:48/60
6	05:13 20:24	05:41 20:00	06:14 07:04-08:03/59 19:11 17:09-18:04/55	06:46 18:18	06:23 08:08-08:39/31 16:32	06:58 08:08-08:57/49 16:11 13:49-14:48/59
7	05:14 20:24	05:42 19:58	06:15 07:03-08:03/60 19:09 17:08-18:03/55	06:47 18:17	06:24 08:07-08:41/34 16:31	06:59 08:08-08:58/50 16:11 13:49-14:49/60
8	05:14 20:24	05:43 19:56	06:16 07:04-08:04/60 19:08 17:08-18:03/55	06:48 18:15	06:26 08:06-08:42/36 16:30	07:00 08:09-08:58/49 16:11 13:49-14:49/60
9	05:15 20:24	05:44 19:55	06:17 07:04-08:03/59 19:06 17:08-18:02/54	06:49 18:13	06:27 08:04-08:43/39 16:29 14:10-14:16/6	07:01 08:09-08:58/49 16:11 13:50-14:50/60
10	05:16 20:23	05:45 19:54	06:18 07:03-08:03/60 19:04 17:09-18:02/53	06:50 18:11	06:28 08:04-08:45/41 16:28 14:04-14:22/18	07:02 08:09-08:58/49 16:11 13:49-14:49/60
11	05:16 20:23	05:46 19:52	06:19 07:03-08:02/59 19:02 17:09-18:01/52	06:52 18:10	06:29 08:03-08:46/43 16:26 14:01-14:25/24	07:03 08:10-08:58/48 16:11 13:50-14:50/60
12	05:17 20:22	05:47 19:51	06:20 07:03-08:02/59 19:01 17:09-18:00/51	06:53 18:08	06:31 08:02-08:46/44 16:25 13:58-14:27/29	07:04 08:11-08:59/48 16:11 13:50-14:51/61
13	05:18 20:22	05:48 19:49	06:21 07:03-08:01/58 18:59 17:09-17:59/50	06:54 18:07	06:32 08:02-08:48/46 16:24 13:57-14:29/32	07:05 08:11-08:59/48 16:11 13:51-14:51/60
14	05:19 20:21	05:49 19:48	06:22 07:03-08:00/57 18:57 17:10-17:58/48	06:55 18:05	06:33 08:02-08:48/46 16:23 13:55-14:31/36	07:05 08:12-09:00/48 16:12 13:51-14:52/61
15	05:20 20:21	05:50 19:47	06:23 07:03-07:59/56 18:55 17:10-17:56/46	06:56 18:03	06:34 08:01-08:49/48 16:23 13:53-14:32/39	07:06 08:12-08:59/47 16:12 13:51-14:52/61
16	05:20 20:20	05:51 19:45	06:24 07:03-07:58/55 18:53 17:11-17:55/44	06:57 18:02	06:36 08:02-08:50/48 16:22 13:53-14:34/41	07:07 08:13-09:00/47 16:12 13:52-14:53/61
17	05:21 20:19	05:52 17:37-17:52/15 19:44	06:25 07:04-07:57/53 18:52 17:12-17:53/41	06:59 18:00	06:37 08:01-08:50/49 16:21 13:51-14:35/44	07:08 08:14-09:01/47 16:12 13:53-14:53/60
18	05:22 20:19	05:53 17:33-17:55/22 19:42	06:26 07:04-07:56/52 18:50 17:13-17:51/38	07:00 17:58	06:38 08:01-08:51/50 16:20 13:50-14:35/45	07:08 08:14-09:00/46 16:13 13:52-14:53/61
19	05:23 20:18	05:54 07:29-07:46/17 19:41 17:30-17:57/27	06:27 07:05-07:55/50 18:48 17:14-17:49/35	07:01 17:57	06:39 08:01-08:52/51 16:19 13:50-14:37/47	07:09 08:14-09:01/47 16:13 13:53-14:54/61
20	05:24 20:17	05:56 07:26-07:49/23 19:39 17:28-17:59/31	06:28 07:06-07:53/47 18:46 17:16-17:46/30	07:02 17:55	06:40 08:01-08:52/51 16:18 13:49-14:38/49	07:09 08:15-09:02/47 16:13 13:54-14:55/61
21	05:25 20:16	05:57 07:23-07:52/29 19:37 17:26-18:00/34	06:30 07:06-07:52/46 18:45 17:18-17:43/25	07:03 17:54	06:42 08:01-08:52/51 16:18 13:48-14:38/50	07:10 08:15-09:02/47 16:14 13:54-14:55/61
22	05:26 20:16	05:58 07:21-07:54/33 19:36 17:24-18:01/37	06:31 07:07-07:50/43 18:43 17:21-17:39/18	07:04 17:52	06:43 08:02-08:53/51 16:17 13:49-14:40/51	07:11 08:16-09:03/47 16:14 13:55-14:56/61
23	05:27 20:15	05:59 07:19-07:55/36 19:34 17:22-18:02/40	06:32 07:09-07:47/38 18:41	07:06 17:51	06:44 08:02-08:54/52 16:16 13:48-14:40/52	07:11 08:16-09:03/47 16:15 13:55-14:56/61
24	05:28 20:14	06:00 07:17-07:57/40 19:33 17:21-18:03/42	06:33 07:10-07:45/35 18:39	07:07 17:49	06:45 08:02-08:54/52 16:16 13:48-14:41/53	07:12 08:16-09:03/47 16:15 13:55-14:56/61
25	05:29 20:13	06:01 07:15-07:58/43 19:31 17:19-18:04/45	06:34 07:12-07:42/30 18:37	07:08 17:48	06:46 08:02-08:54/52 16:15 13:47-14:41/54	07:12 08:18-09:04/46 16:16 13:56-14:57/61
26	05:30 20:12	06:02 07:14-07:59/45 19:30 17:18-18:04/46	06:35 07:15-07:39/24 18:36	07:09 17:46	06:48 08:03-08:55/52 16:15 13:48-14:43/55	07:12 08:18-09:05/47 16:17 13:57-14:57/60
27	05:30 20:11	06:03 07:13-08:00/47 19:28 17:17-18:05/48	06:36 07:19-07:34/15 18:34	07:11 17:45	06:49 08:03-08:55/52 16:14 13:47-14:43/56	07:13 08:18-09:05/47 16:17 13:57-14:57/60
28	05:31 20:10	06:04 07:11-08:00/49 19:26 17:16-18:05/49	06:37 18:32	07:12 17:44	06:50 08:03-08:55/52 16:14 13:47-14:44/57	07:13 08:19-09:06/47 16:18 13:58-14:59/61
29	05:32 20:09	06:05 07:10-08:01/51 19:25 17:15-18:05/50	06:38 18:30	07:13 17:42	06:51 08:04-08:55/51 16:13 13:47-14:44/57	07:13 08:19-09:07/48 16:19 13:58-14:59/61
30	05:33 20:08	06:06 07:09-08:02/53 19:23 17:14-18:05/51	06:39 18:29	07:14 17:41	06:52 08:04-08:55/51 16:13 13:47-14:45/58	07:13 08:19-09:07/48 16:20 13:59-14:59/60
31	05:34 20:07	06:07 07:08-08:02/54 19:21 17:13-18:05/52	 	07:16 17:40	 	07:14 08:19-09:07/48 16:20 13:59-15:00/61
Potential sun hours	464	431	375	343	294	283
Sum of minutes with flicker	0	1109	2383	0	2196	3361

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

5247Windpro

Printed/Page

5/23/2011 2:22 PM / 15

Licensed user:

Meridian Associates, Inc.

152 Conant Street

US-BEVERLY, MA 01845

(978) 299 0447 x 214

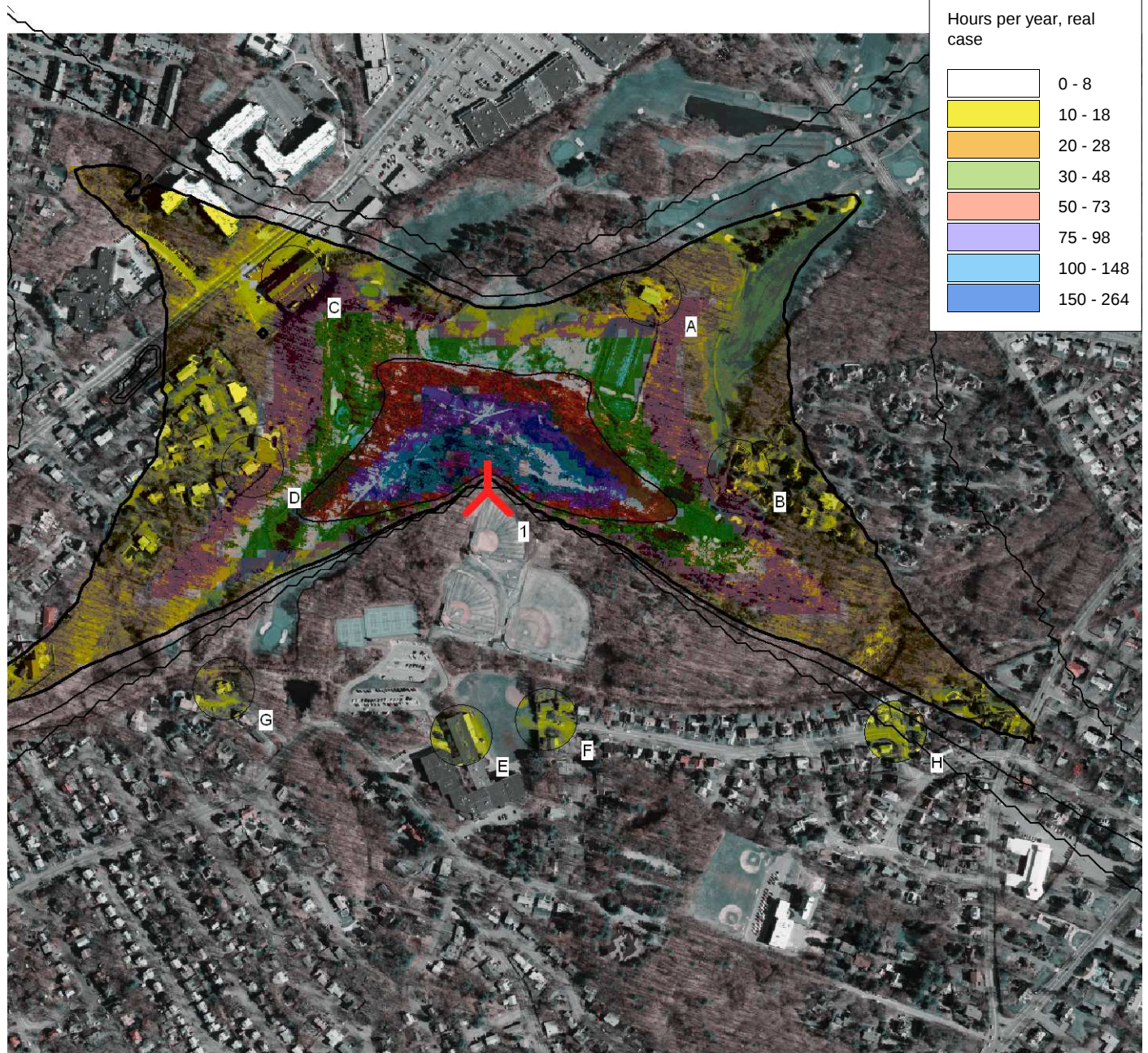
Diane Gagnon / dgagnon@meridianassoc.com

Calculated:

5/23/2011 2:21 PM/2.7.486

SHADOW - Map

Calculation: GE 1.5sleWTG: 1 - GE 1.5sle



0 100 200 300 400 m

Map: , Print scale 1:7,500, Map center UTM NAD 83 Zone: 19 East: 343,760 North: 4,704,430

New WTG

Shadow receptor

Isolines showing shadow in Hours per year, real case

0 5 10 50