

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's

UTM NAD83 Zone 14

Codrington County

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-C10-P	Participant	663,510.00	4,985,195.00	609.0	36:47	38:20	38:20	1,634
CR2-C154-P	Participant	660,684.34	4,967,166.18	588.0	30:00	30:00	30:00	2,041
CR2-C38-NP	Non-P	660,874.00	4,966,929.00	585.5	25:57	25:57	25:57	1,906
CR2-C78-P	Participant	665,273.00	4,983,933.00	609.0	25:17	25:17	25:17	1,919
CR1-C79-NP	Non-P	660,452.00	4,983,750.00	595.9	22:38	22:38	0:00	2,037
CR1-C89-P	Participant	662,062.00	4,982,029.00	584.3	21:39	21:39	21:39	2,165
CR2-C98-NP	Non-P	660,155.00	4,976,007.00	582.8	18:45	18:45	32:22	2,336
CR1-C9-NP	Non-P	665,352.00	4,985,004.00	609.0	18:08	18:08	18:08	2,320
CR2-C27-P	Participant	662,985.00	4,968,167.00	582.0	18:06	18:06	18:06	1,726
CR2-C41-P	Participant	660,770.00	4,975,147.00	596.4	17:22	17:22	17:22	1,532
CR1-C12-NP	Non-P	662,222.00	4,985,736.00	603.0	17:08	17:08	17:08	2,201
CR1-C86-P	Participant	662,086.00	4,982,135.00	585.0	16:51	16:51	16:51	2,306
CR1-C13-NP	Non-P	663,792.00	4,985,785.00	612.0	16:19	18:58	18:58	2,589
CR2-C50-P	Participant	661,252.00	4,976,035.00	597.0	15:36	15:36	19:23	1,873
CR1-C20-P	Participant	663,054.00	4,987,455.00	606.0	14:38	14:38	14:38	2,336
CR2-C97-NP	Non-P	660,093.00	4,976,001.00	583.8	14:19	14:19	29:21	2,188
CR2-C34-P	Participant	663,934.00	4,966,991.00	570.1	14:11	14:11	14:11	2,133
CR2-C70-P	Participant	665,521.00	4,970,518.00	588.9	13:57	13:57	13:57	2,215
CR2-C133-P	Participant	666,992.00	4,967,681.00	571.2	13:37	13:37	13:37	2,500
CR2-C60-P	Participant	662,287.00	4,976,800.00	594.0	12:42	12:42	13:54	3,793
CR2-C54-NP	Non-P	662,636.00	4,976,079.00	597.0	12:36	12:36	12:36	2,287
CR2-C42-NP	Non-P	664,887.00	4,975,388.00	597.0	12:14	12:14	12:14	3,566
CR1-C77-P	Participant	661,915.00	4,983,367.00	591.0	12:12	12:12	7:36	1,654
CR1-C70-NP	Non-P	665,135.00	4,988,293.00	595.9	12:01	12:01	12:01	3,540
CR2-C46-NP	Non-P	660,435.00	4,965,627.00	582.0	10:36	10:36	12:08	2,569
CR1-C12-1-NP	Non-P	662,199.00	4,986,047.00	606.0	10:34	10:34	10:34	2,818
CR2-C71-NP	Non-P	665,411.00	4,970,503.00	586.1	10:14	10:14	10:14	2,529
CR2-C131-NP	Non-P	666,732.00	4,984,987.00	591.0	10:06	10:06	10:06	2,287
CR2-C63-P	Participant	665,528.00	4,977,285.00	612.0	9:49	14:41	14:41	2,185
CR2-C37-NP	Non-P	663,037.00	4,974,496.00	606.0	9:34	9:34	9:34	3,537
CR2-C36-NP	Non-P	660,475.00	4,974,426.00	578.6	8:20	8:20	8:20	2,992
CR2-C115-NP	Non-P	663,555.00	4,980,564.00	575.2	8:18	8:18	8:18	2,520
CR1-C24-NP	Non-P	660,176.00	4,983,887.00	601.1	7:45	7:45	0:00	3,038
CR1-C72-NP	Non-P	665,158.00	4,988,170.00	594.6	7:39	7:39	7:39	3,776
CR2-C16-NP	Non-P	665,418.00	4,966,866.00	567.0	7:30	7:30	7:30	2,756
CR1-C71-NP	Non-P	665,137.00	4,988,378.00	595.6	7:23	7:23	7:23	3,448
CR1-C73-NP	Non-P	663,066.00	4,982,530.00	591.0	6:57	6:57	6:57	3,704
CR1-C29-NP	Non-P	666,572.00	4,988,867.00	575.9	6:54	6:54	6:54	2,457
CR1-C68-P	Participant	662,652.00	4,987,606.00	609.0	6:44	6:44	6:44	2,146

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's

UTM NAD83 Zone 14

Codington County

continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR1-C78-P	Participant	660,190.00	4,983,788.00	602.3	6:43	6:43	0:00	2,835
CR1-C25-P	Participant	660,189.79	4,983,788.29	602.3	6:43	6:43	0:00	2,838
CR1-C16-NP	Non-P	661,960.00	4,986,288.00	606.0	6:17	6:17	6:17	2,648
CR1-C81-NP	Non-P	660,062.00	4,983,083.00	597.0	6:15	6:15	0:00	3,094
CR2-C26-P	Participant	664,733.00	4,968,915.00	591.0	6:09	6:09	6:09	1,959
CR1-C69-P	Participant	662,685.00	4,987,619.00	609.0	6:05	6:05	6:05	2,185
CR1-C18-P	Participant	663,651.00	4,987,157.00	610.4	5:58	5:58	5:58	3,409
CR2-C47-NP	Non-P	662,200.00	4,975,837.00	594.5	5:56	5:56	9:41	2,821
CR1-C76-NP	Non-P	662,981.00	4,982,580.00	588.3	5:26	5:26	5:26	3,901
CR2-C75-NP	Non-P	664,866.00	4,969,808.00	583.7	5:05	5:05	5:05	4,396
CR2-C57-P	Participant	666,667.00	4,976,162.00	613.8	5:03	5:03	5:03	2,821
CR2-C117-NP	Non-P	664,742.00	4,976,142.00	594.2	4:53	4:53	4:53	3,481
CR2-C116-NP	Non-P	664,640.00	4,976,142.00	591.1	4:50	4:50	4:50	3,533
CR2-C105-NP	Non-P	662,122.00	4,976,029.00	595.3	4:38	4:38	7:46	3,425
CR2-C102-NP	Non-P	662,025.00	4,976,085.00	594.1	4:33	4:33	8:29	3,609
CR2-C103-NP	Non-P	662,046.00	4,976,067.00	594.8	4:32	4:32	8:17	3,547
CR1-C75-NP	Non-P	663,010.00	4,982,658.00	588.0	4:25	4:25	4:25	3,730
CR2-C107-NP	Non-P	662,265.00	4,978,194.00	577.7	4:21	4:21	4:21	4,564
CR2-C61-NP	Non-P	660,630.00	4,976,840.00	582.5	4:15	4:15	12:08	2,402
CR2-C45-P	Participant	664,058.00	4,965,862.00	570.0	4:12	4:12	4:12	3,907
CR1-C87-NP	Non-P	662,628.00	4,982,425.00	585.4	4:09	4:09	4:09	4,258
CR1-C11-P	Participant	664,111.00	4,985,679.00	609.0	3:56	10:27	10:27	1,860
CR2-C76-NP	Non-P	664,747.00	4,969,738.00	584.8	3:53	3:53	3:53	4,560
CR2-C1-NP	Non-P	662,198.00	4,980,622.00	591.0	3:51	3:51	3:51	1,909
CR2-C130-P	Participant	666,727.00	4,966,695.00	591.0	3:42	3:42	3:42	3,350
CR2-C134-NP	Non-P	667,097.00	4,973,011.00	613.0	3:42	3:42	3:42	3,363
CR2-C62-NP	Non-P	666,992.00	4,977,048.00	615.0	3:38	16:54	16:54	3,947
CR2-C129-P	Participant	666,716.00	4,966,751.00	591.0	3:31	3:31	3:31	3,356
CR2-C24-NP	Non-P	661,541.00	4,969,653.00	600.0	3:21	3:21	3:21	3,809
CR2-C65-NP	Non-P	665,217.00	4,977,746.00	609.0	3:07	7:16	7:16	2,139
CR2-C48-NP	Non-P	662,370.00	4,965,588.00	590.3	3:04	3:04	19:13	2,365
CR2-C128-P	Participant	666,636.00	4,966,649.00	589.0	3:00	3:00	3:00	3,671
CR2-C59-P	Participant	664,952.00	4,976,698.00	601.9	2:56	4:30	4:30	1,654
CR1-C28-NP	Non-P	665,429.00	4,988,598.00	590.9	2:43	2:43	2:43	2,831
CR1-C74-NP	Non-P	662,869.00	4,983,122.00	595.7	2:34	2:34	2:34	2,480
CR2-C33-P	Participant	663,878.00	4,967,612.00	576.1	2:28	2:28	2:28	2,999

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's

UTM NAD83 Zone 14

Codington County

continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR2-C39-NP	Non-P	664,089.00	4,966,486.00	566.2	2:27	2:27	2:27	2,178
CR2-C123-P	Participant	666,146.00	4,966,653.00	579.4	2:13	2:13	2:13	5,216
CR2-C119-NP	Non-P	665,052.00	4,974,682.00	600.0	2:06	2:06	2:06	4,760
CR2-C118-NP	Non-P	665,014.00	4,974,639.00	600.0	1:57	1:57	1:57	4,947
CR2-C132-NP	Non-P	666,857.00	4,985,021.00	588.2	1:47	1:47	1:47	1,883
CR2-C43-NP	Non-P	664,382.00	4,975,544.00	597.0	1:42	1:42	1:42	4,232
CR2-C126-P	Participant	666,389.00	4,966,670.00	585.0	1:40	1:40	1:40	4,455
CR1-C15-NP	Non-P	663,291.00	4,986,026.00	615.0	1:33	2:16	2:16	2,175
CR2-C77-NP	Non-P	663,865.00	4,969,694.00	597.0	1:28	1:28	1:28	4,406
CR1-C85-NP	Non-P	659,706.00	4,981,419.00	588.0	1:22	1:22	1:22	4,819
CR2-C2-NP	Non-P	662,238.00	4,980,604.00	590.9	1:03	1:03	1:03	1,880
CR1-C22-P	Participant	660,755.00	4,984,082.00	594.0	1:01	1:01	1:01	2,375
CR1-C21-P	Participant	660,756.00	4,984,086.00	594.0	1:00	1:00	1:00	2,388
CR2-C23-NP	Non-P	664,069.00	4,969,661.00	594.0	0:58	0:58	0:58	4,439
CR2-C44-NP	Non-P	659,145.00	4,966,062.00	561.4	0:43	0:43	0:43	4,183
CR1-C80-NP	Non-P	659,351.00	4,983,174.00	604.4	0:40	0:40	0:00	5,308
CR1-C23-P	Participant	660,619.00	4,984,078.00	595.8	0:00	0:00	0:00	2,523
CR1-C31-NP	Non-P	665,939.00	4,988,950.00	585.4	0:00	0:00	0:00	2,126
CR1-C4-NP	Non-P	659,744.00	4,984,749.00	606.0	0:00	0:00	0:00	5,981
CR1-C5-NP	Non-P	659,958.00	4,984,794.00	604.8	0:00	0:00	0:00	5,659
CR1-C66-NP	Non-P	659,718.00	4,985,032.00	606.0	0:00	0:00	0:00	5,800
CR1-C67-NP	Non-P	659,789.00	4,985,057.00	606.0	0:00	0:00	0:00	5,791
CR1-C7-NP	Non-P	660,893.00	4,984,861.00	593.2	0:00	0:00	0:00	3,022
CR1-C84-NP	Non-P	659,607.00	4,982,216.00	594.0	0:00	0:00	0:00	5,856
CR1-C88-NP	Non-P	660,156.00	4,980,595.00	570.9	0:00	0:00	0:00	4,045
CR1-C8-P	Participant	660,532.00	4,984,445.00	599.4	0:00	0:00	0:00	3,740
CR2-C100-NP	Non-P	660,592.00	4,972,602.00	591.0	0:00	0:00	0:00	7,057
CR2-C101-NP	Non-P	660,732.00	4,972,807.00	591.0	0:00	0:00	0:00	6,266
CR2-C104-NP	Non-P	662,109.00	4,972,735.00	604.0	0:00	0:00	0:00	6,608
CR2-C106-NP	Non-P	662,165.00	4,972,711.00	604.7	0:00	0:00	0:00	6,749
CR2-C109-NP	Non-P	662,699.00	4,972,874.00	606.0	0:00	0:00	0:00	7,169
CR2-C10-NP	Non-P	665,189.00	4,966,505.00	570.0	0:00	0:00	0:00	2,438
CR2-C112-NP	Non-P	665,928.00	4,972,630.00	603.0	0:00	0:00	0:00	6,575
CR2-C135-NP	Non-P	667,172.00	4,966,196.00	595.2	0:00	0:00	0:00	2,884
CR2-C136-NP	Non-P	667,209.00	4,966,166.00	595.4	0:00	0:00	0:00	2,887
CR2-C137-NP	Non-P	658,951.00	4,979,194.00	568.2	0:00	0:00	0:00	6,555
CR2-C142-NP	Non-P	656,697.00	4,977,269.00	566.9	0:00	0:00	0:00	8,432
CR2-C143-NP	Non-P	657,016.00	4,977,505.00	553.6	0:00	0:00	0:00	7,444

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's

UTM NAD83 Zone 14

Codington County

continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR2-C151-NP	Non-P	663,934.00	4,964,475.00	556.1	0:00	0:00	0:00	6,929
CR2-C28-P	Participant	659,208.00	4,968,159.00	572.8	0:00	0:00	0:00	5,630
CR2-C29-NP	Non-P	661,223.00	4,968,144.00	595.2	0:00	0:00	0:00	4,639
CR2-C30-NP	Non-P	659,100.00	4,968,023.00	568.6	0:00	0:00	0:00	5,502
CR2-C31-P	Participant	663,117.00	4,972,923.00	606.0	0:00	0:00	0:00	7,579
CR2-C32-P	Participant	659,469.00	4,967,984.00	575.2	0:00	0:00	0:00	4,678
CR2-C35-NP	Non-P	658,964.00	4,974,334.00	566.8	0:00	0:00	0:00	4,432
CR2-C3-NP	Non-P	664,345.00	4,964,571.00	556.0	0:00	0:00	0:00	7,497
CR2-C40-NP	Non-P	659,189.00	4,974,765.00	578.3	0:00	0:00	1:38	2,841
CR2-C49-NP	Non-P	660,907.00	4,964,846.00	582.0	0:00	0:00	6:36	3,284
CR2-C51-NP	Non-P	662,977.00	4,964,794.00	584.0	0:00	0:00	4:41	4,852
CR2-C52-NP	Non-P	662,688.00	4,964,792.00	585.9	0:00	0:00	14:32	4,846
CR2-C53-NP	Non-P	662,401.00	4,964,782.00	582.0	0:00	0:00	0:00	4,869
CR2-C55-NP	Non-P	660,765.00	4,964,777.00	582.0	0:00	0:00	4:36	3,655
CR2-C56-NP	Non-P	660,759.00	4,964,737.00	582.0	0:00	0:00	4:54	3,786
CR2-C58-NP	Non-P	660,764.00	4,964,686.00	582.0	0:00	0:00	5:51	3,934
CR2-C64-NP	Non-P	660,901.00	4,964,220.00	582.0	0:00	0:00	0:00	5,285
CR2-C66-NP	Non-P	662,396.00	4,963,954.00	582.0	0:00	0:00	0:00	7,231
CR2-C67-NP	Non-P	660,379.00	4,978,592.00	556.1	0:00	0:00	0:00	5,033
CR2-C68-NP	Non-P	662,517.00	4,963,408.00	579.0	0:00	0:00	0:00	8,973
CR2-C69-NP	Non-P	661,701.00	4,978,792.00	564.0	0:00	0:00	0:00	5,171
CR2-C72-NP	Non-P	663,856.00	4,970,488.00	597.0	0:00	0:00	0:00	6,135
CR2-C74-NP	Non-P	660,687.00	4,969,931.00	586.5	0:00	0:00	0:00	6,732
CR2-C79-NP	Non-P	666,869.00	4,984,663.00	587.9	0:00	0:00	0:00	2,703
CR2-C7-NP	Non-P	665,694.00	4,966,179.00	570.0	0:00	0:00	0:00	4,409
CR2-C80-NP	Non-P	664,705.00	4,972,092.00	597.3	0:00	0:00	0:00	7,684
CR2-C86-NP	Non-P	662,880.00	4,971,302.00	603.0	0:00	0:00	0:00	7,208
CR2-C87-NP	Non-P	662,841.00	4,971,294.00	603.0	0:00	0:00	0:00	7,165
CR2-C89-NP	Non-P	662,244.00	4,971,076.00	603.0	0:00	0:00	0:00	6,489
CR2-C91-NP	Non-P	663,938.00	4,970,546.00	597.0	0:00	0:00	0:00	6,457
CR2-C92-NP	Non-P	663,855.00	4,970,535.00	597.0	0:00	0:00	0:00	6,247
CR2-C93-NP	Non-P	659,203.00	4,973,158.00	584.9	0:00	0:00	0:00	7,792
CR2-C94-NP	Non-P	659,202.00	4,973,052.00	583.9	0:00	0:00	0:00	8,133
CR2-C95-NP	Non-P	659,248.00	4,974,054.00	567.0	0:00	0:00	0:00	4,898
CR2-C96-NP	Non-P	659,316.00	4,974,063.00	570.6	0:00	0:00	0:00	4,813
CR2-C99-P	Participant	660,584.00	4,972,570.00	591.0	0:00	0:00	0:00	7,165
CR2-C22-NP	Non-P	661,202.00	4,972,711.00	597.0	0:00	0:00	0:00	6,247
CR2-C90-NP	Non-P	664,088.41	4,970,672.24	594.0	0:00	0:00	0:00	6,863

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's

UTM NAD83 Zone 14

Deuel County

continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR2-D111-P	Participant	671,876.00	4,969,006.00	600.0	29:32	29:32	29:32	2,178
CR2-D21-NP	Non-P	669,517.00	4,978,053.00	596.1	28:59	28:59	28:59	1,985
CR2-D53-P	Participant	670,392.00	4,975,925.00	592.8	27:37	27:37	27:37	1,801
CR2-D108-NP	Non-P	670,354.00	4,965,949.00	594.0	25:37	25:37	25:37	2,198
CR2-D131-P	Participant	669,471.00	4,977,139.00	597.5	25:29	25:29	25:29	2,087
CR2-D50-P	Participant	672,015.00	4,967,209.00	602.8	24:57	24:57	24:57	1,965
CR2-D44-NP	Non-P	670,434.00	4,965,956.00	593.8	24:03	24:03	24:03	2,149
CR2-D15-NP	Non-P	674,387.00	4,968,515.00	588.0	24:01	24:01	24:01	2,297
CR2-D18-NP	Non-P	671,540.00	4,976,154.00	582.0	22:04	22:04	22:04	2,201
CR2-D11-NP	Non-P	669,646.00	4,974,534.00	604.4	5:51	5:51	21:54	4,131
CR2-D123-P	Participant	673,527.00	4,967,015.00	596.7	19:44	19:44	19:44	2,441
CR2-D39-P	Participant	668,443.00	4,974,627.00	614.4	18:50	18:50	18:50	1,706
CR2-D71-NP	Non-P	669,402.00	4,979,216.00	588.0	18:30	18:30	16:15	1,975
CR2-D122-P	Participant	673,601.00	4,967,341.00	594.0	18:17	18:17	18:17	1,886
CR2-D105-NP	Non-P	670,348.00	4,963,826.00	611.7	17:56	17:56	17:56	2,821
CR2-D6-P	Participant	668,762.00	4,967,671.00	591.0	17:17	17:17	17:17	2,844
CR2-D30-NP	Non-P	669,549.00	4,974,233.00	611.9	6:03	6:03	17:10	3,953
CR2-D132-NP	Non-P	669,497.00	4,974,128.00	609.0	6:45	6:45	16:49	3,763
CR2-D119-P	Participant	673,378.00	4,965,126.00	602.6	16:30	16:30	16:30	1,932
CR2-D128-NP	Non-P	668,625.00	4,967,652.00	588.0	15:58	15:58	15:58	2,779
CR2-D5-NP	Non-P	668,781.00	4,964,897.00	603.0	15:51	15:51	15:51	1,923
CR2-D124-P	Participant	671,911.00	4,967,745.00	603.0	15:47	15:47	15:47	2,493
CR2-D221-1-NP	Non-P	670,365.59	4,973,541.32	606.0	14:22	14:22	14:22	1,995
CR2-D22-NP	Non-P	668,798.00	4,963,767.00	603.1	14:21	14:21	14:21	2,142
CR2-D64-P	Participant	669,417.00	4,978,434.00	588.0	14:03	14:03	13:32	2,425
CR2-D19-NP	Non-P	668,870.00	4,964,178.00	606.0	13:59	13:59	13:59	2,034
CR2-D17-NP	Non-P	672,023.00	4,969,597.00	597.0	13:45	13:45	13:45	3,343
CR2-D14-NP	Non-P	670,351.11	4,973,543.31	606.0	13:33	13:33	13:33	2,041
CR2-D221-NP	Non-P	670,351.11	4,973,543.31	606.0	13:33	13:33	13:33	2,041
CR2-D130-NP	Non-P	672,080.49	4,973,212.28	591.0	13:27	13:27	13:27	2,260
CR2-D222-NP	Non-P	672,080.49	4,973,212.28	591.0	13:27	13:27	13:27	2,264
CR2-D125-NP	Non-P	670,404.00	4,966,786.00	597.0	13:11	13:11	13:11	3,422
CR2-D83-NP	Non-P	675,891.00	4,966,810.00	579.0	12:25	12:25	12:25	1,929
CR2-D86-NP	Non-P	673,842.00	4,966,875.00	597.0	12:07	12:07	12:07	1,985
CR2-D121-NP	Non-P	674,461.00	4,966,734.00	594.0	12:06	12:06	12:06	2,316
CR2-D176-P	Participant	673,641.00	4,962,583.00	609.0	12:02	12:02	12:02	3,304
CR2-D62-NP	Non-P	669,355.00	4,974,624.00	609.0	5:02	5:02	10:56	3,697
CR2-D38-P	Participant	667,108.00	4,982,083.00	597.0	9:01	5:02	5:02	1,693

Table C-2: Crowned Ridge Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year

Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.3-116-80 m HH WTG's

UTM NAD83 Zone 14

Deuel County

continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Hessler Case Shadow (hrs/year)	CRW Case Shadow (hrs/year)	Base Case Shadow (hrs/year)	Distance to Nearest Turbine (ft)
CR2-D49-P	Participant	672,024.00	4,974,135.00	583.2	8:42	8:42	8:42	3,537
CR2-D51-NP	Non-P	675,005.00	4,970,131.00	577.8	8:27	8:27	8:27	2,717
CR2-D56-P	Participant	667,119.00	4,977,925.00	612.0	8:10	8:10	8:10	2,110
CR2-D90-NP	Non-P	670,516.00	4,962,327.00	612.0	7:36	7:36	7:36	3,360
CR2-D212-P	Participant	667,211.00	4,969,816.00	608.3	12:55	12:55	12:55	1,686
CR2-D3-NP	Non-P	672,390.00	4,963,482.00	612.0	6:47	6:47	6:47	2,037
CR2-D208-P	Participant	676,741.00	4,964,971.00	579.0	6:43	6:43	6:43	3,205
CR2-D127-NP	Non-P	668,841.00	4,969,858.00	603.0	11:40	11:40	11:40	2,894
CR2-D107-NP	Non-P	670,405.00	4,966,321.00	597.0	6:22	6:22	6:22	3,143
CR2-D77-NP	Non-P	672,044.00	4,966,468.00	600.0	5:58	5:58	5:58	2,444
CR2-D101-NP	Non-P	672,538.00	4,961,910.00	612.8	5:29	5:29	5:29	2,677
CR2-D65-NP	Non-P	670,422.00	4,966,654.00	597.0	5:26	5:26	5:26	3,583
CR2-D16-P	Participant	671,626.00	4,966,693.00	601.7	5:21	5:21	5:21	2,018
CR2-D54-NP	Non-P	672,012.00	4,966,477.00	600.0	5:15	5:15	5:15	2,500
CR2-D104-NP	Non-P	670,443.00	4,961,600.00	613.8	5:06	5:06	5:06	4,058
CR2-D109-NP	Non-P	676,885.00	4,965,806.00	576.0	4:51	4:51	4:51	4,432
CR2-D85-NP	Non-P	669,593.00	4,976,302.00	603.0	4:36	4:36	4:36	1,949
CR2-D129-NP	Non-P	669,645.00	4,973,005.00	606.0	4:30	4:30	4:30	4,682
CR2-D12-NP	Non-P	668,558.00	4,969,840.00	604.7	18:07	18:07	18:07	2,051
CR2-D110-NP	Non-P	670,260.25	4,967,728.02	597.0	3:14	3:14	3:14	2,211
CR2-D220-NP	Non-P	670,260.25	4,967,728.02	597.0	3:14	3:14	3:14	2,211
CR2-D126-NP	Non-P	670,227.27	4,967,454.62	593.3	3:04	3:04	3:04	2,749
CR2-D223-NP	Non-P	670,227.27	4,967,454.62	593.3	3:04	3:04	3:04	2,749
CR2-D20-NP	Non-P	675,261.00	4,968,400.00	579.0	3:00	3:00	3:00	2,313
CR2-D36-NP	Non-P	669,812.00	4,966,746.00	591.0	2:59	2:59	2:59	2,854
CR2-D91-NP	Non-P	667,546.00	4,976,173.00	618.0	2:59	2:59	2:59	4,531
CR2-D120-NP	Non-P	673,401.00	4,964,165.00	609.0	2:19	2:19	2:19	3,110
CR2-D79-NP	Non-P	672,172.00	4,974,737.00	585.0	2:16	2:16	2:16	1,955
CR2-D41-NP	Non-P	670,437.00	4,966,409.00	597.0	2:06	2:06	2:06	3,340
CR2-D115-P	Participant	670,974.00	4,969,938.00	606.0	2:04	2:04	2:04	3,245
CR2-D224-NP	Non-P	669,886.93	4,966,846.04	590.6	1:40	1:40	1:40	3,261
CR2-D46-NP	Non-P	669,797.00	4,966,804.00	591.0	1:23	1:23	1:23	2,972
CR2-D45-NP	Non-P	668,018.00	4,976,064.00	611.5	0:55	0:55	0:55	4,393
CR2-D100-NP	Non-P	668,589.00	4,972,064.00	609.9	0:00	0:00	0:00	4,708
CR2-D103-NP	Non-P	670,588.00	4,961,119.00	615.0	0:00	0:00	0:00	4,606
CR2-D106-NP	Non-P	667,315.00	4,965,297.00	594.0	0:00	0:00	0:00	5,351
CR2-D112-NP	Non-P	667,666.00	4,971,554.00	604.6	0:00	0:00	0:00	3,553
CR2-D113-NP	Non-P	667,774.00	4,971,544.00	606.9	0:00	0:00	0:00	3,537



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**Crowned Ridge II Wind Farm
300 MW
Overview Map**

Client: SWCA Environmental Consultants

Project Description

Wind turbine layout with land parcels within the project footprint and existing occupied structures.

Codington County land parcels within 2 km of a wind turbine.

Hessler array with 6 alternates.

Location: Watertown, SD

Project #: 20174431

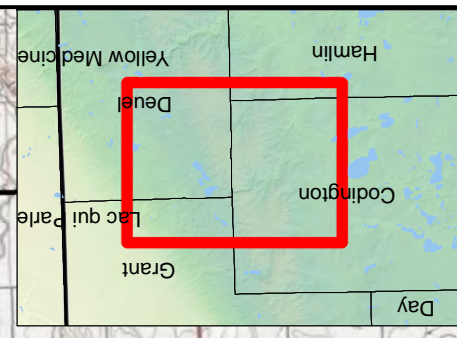
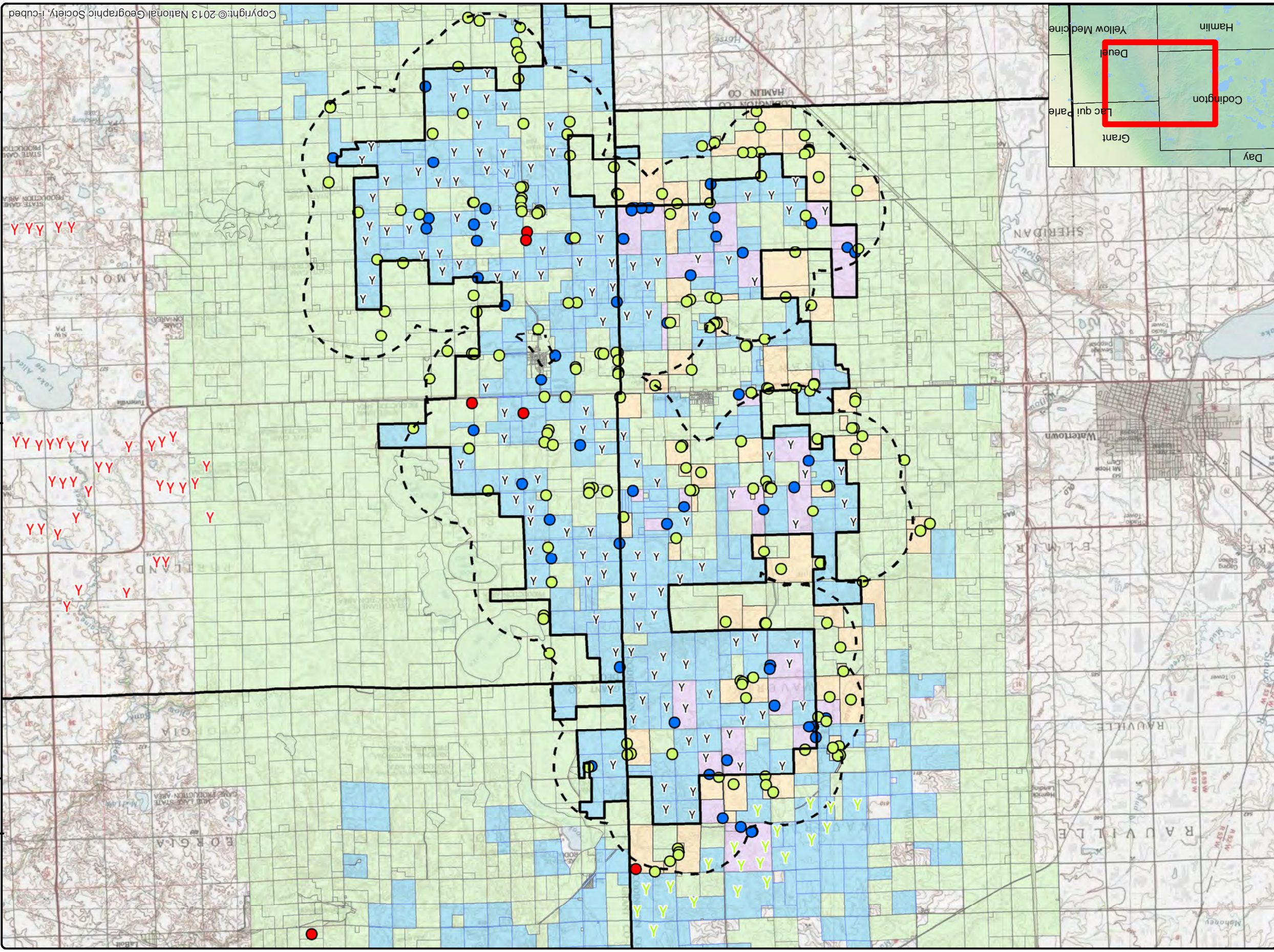
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend

- Y Crowned Ridge II Turbines 300 MW
- Y Crowned Ridge Turbines
- Y Deuel Harvest Turbines
- - - 2 km Turbine Buffer
- County Lines
- CR II Project Boundary
- CR II Intervenor
- Non-Participants Noise
- Participants Noise
- Non-Participating Codington Parcels
- Participating Codington Parcels
- Non-Participating Parcels
- Participating Parcels



0 0.75 1.5 3 Mile

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**Crowned Ridge II Wind Farm
300 MW
Shadow Overview Map**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD
Project #: 20174431

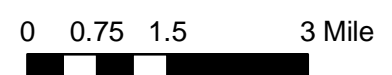
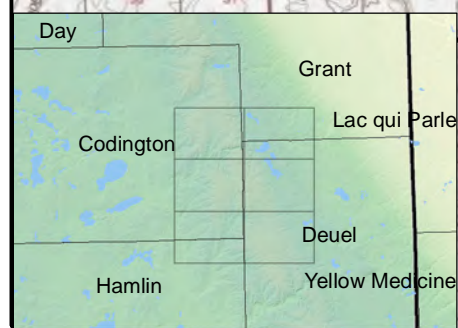
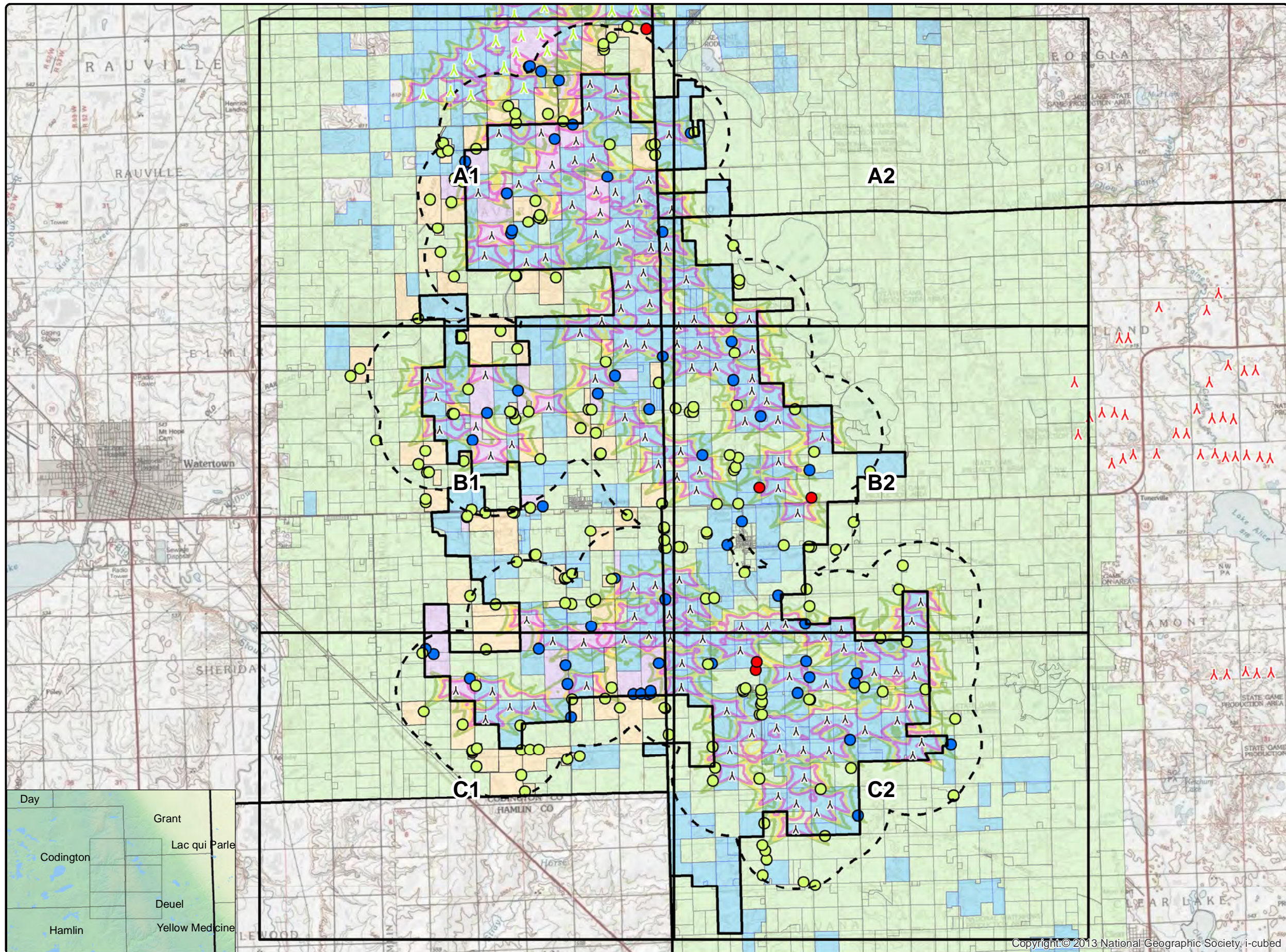
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS *Checked By:* JH

- Legend**
- ▲ Crowned Ridge II Turbines 300 MW
 - ▲ Crowned Ridge Turbines
 - ▲ Deuel Harvest Turbines
 - 2 km Turbine Buffer
 - County Lines
 - CR II Project Boundary
 - CR II Intervenor
 - Non-Participants Shadow
 - Participants Shadow
- Shadow Flicker (hr/yr)**
- 10
 - 15
 - 20
 - 25
 - 30
- Non-Participating Codington Parcels
 - Participating Codington_Parcels
 - Non-Participating Parcels
 - Participating Parcels

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**Crowned Ridge II Wind Farm
300 MW
Shadow Flicker Iso-Lines**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.
Predicted shadow flicker levels at existing residences.
Hessler array with 6 alternates

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD
Project #: 20174431

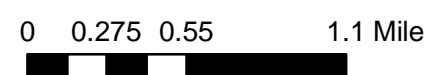
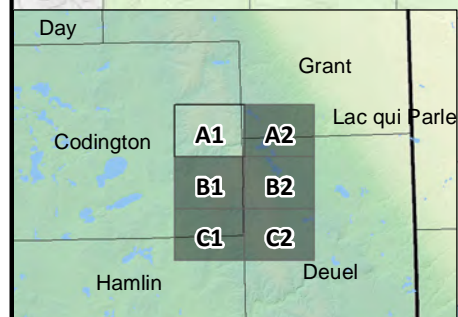
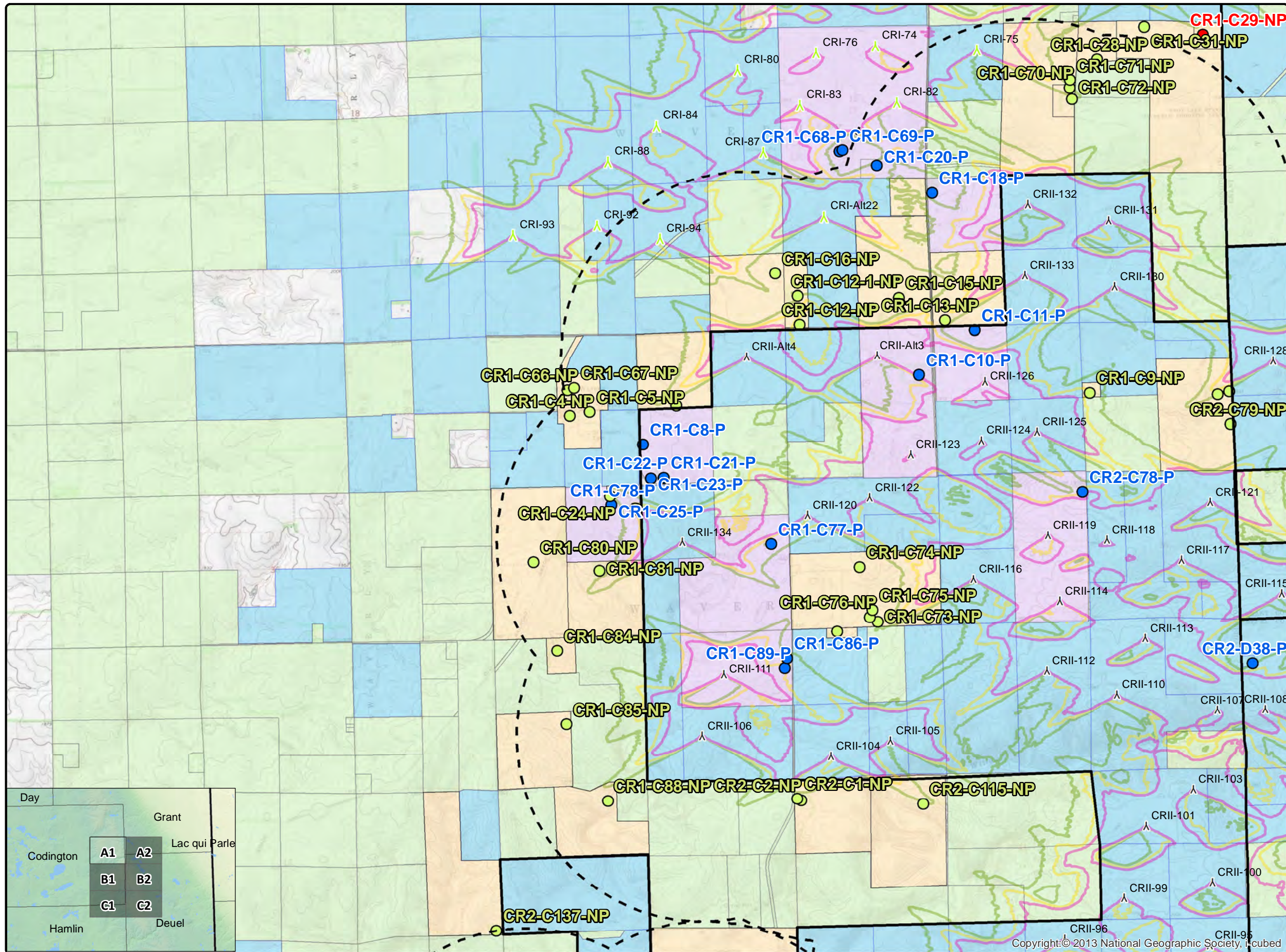
Issue Dates

#	Description	Date
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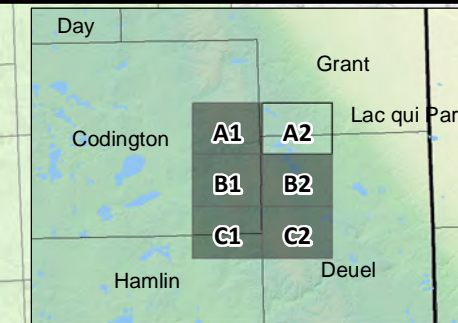
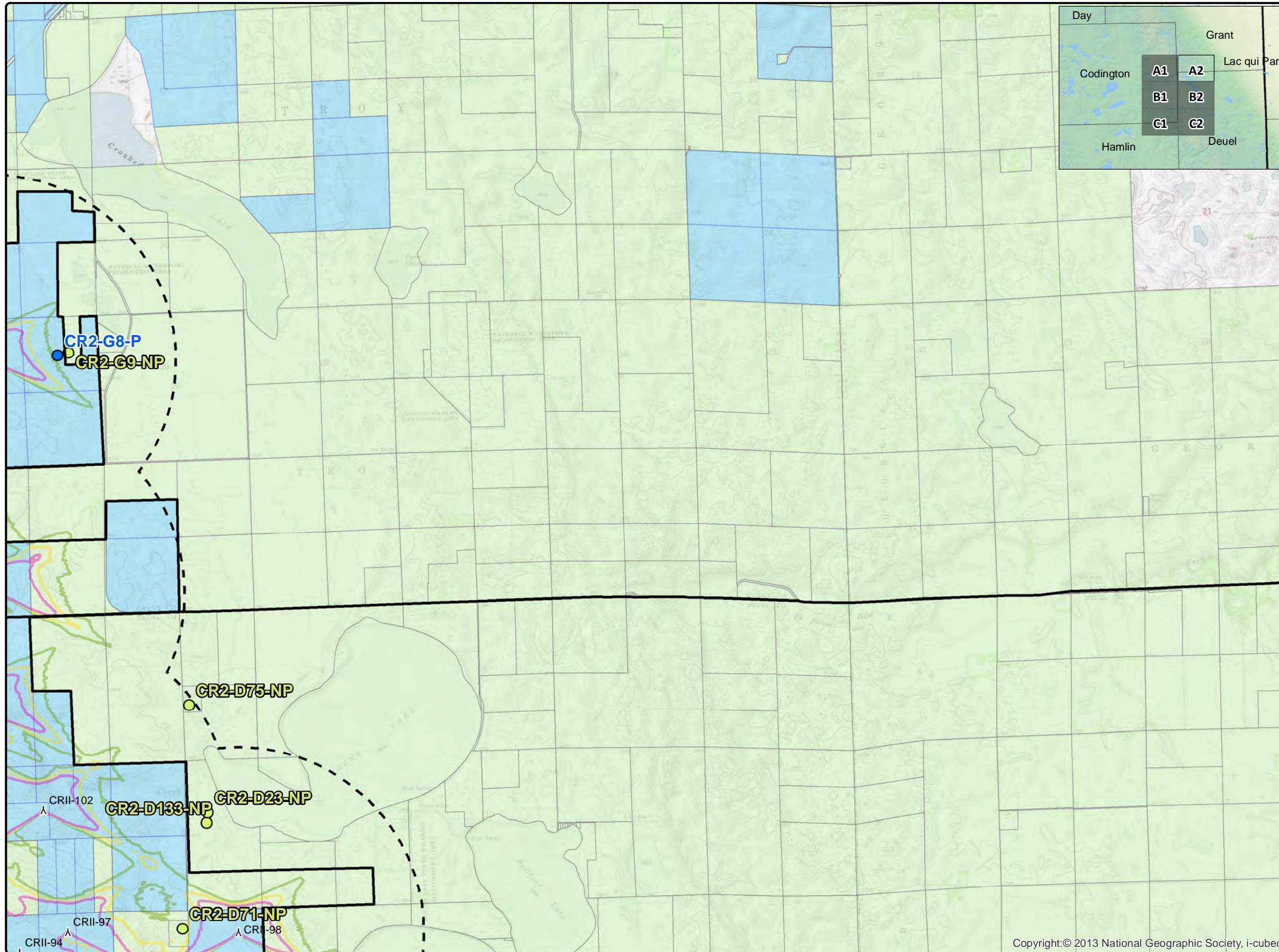
Drawn By: AS Checked By: JH

- Legend**
- ▲ Crowned Ridge II Turbines 300 MW
 - ▲ Crowned Ridge Turbines
 - ▲ Deuel Harvest Turbines
 - 2 km Turbine Buffer
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 - CR II Intervenor
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 - Participating Codington_Parcels
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**Crowned Ridge II Wind Farm
300 MW
Shadow Flicker Iso-Lines**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD
Project #: 20174431


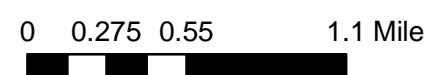
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

- Legend**
- ▲ Crowned Ridge II Turbines 300 MW
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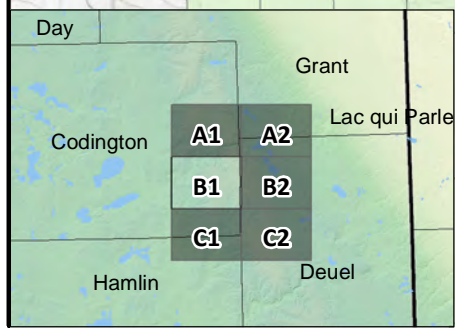
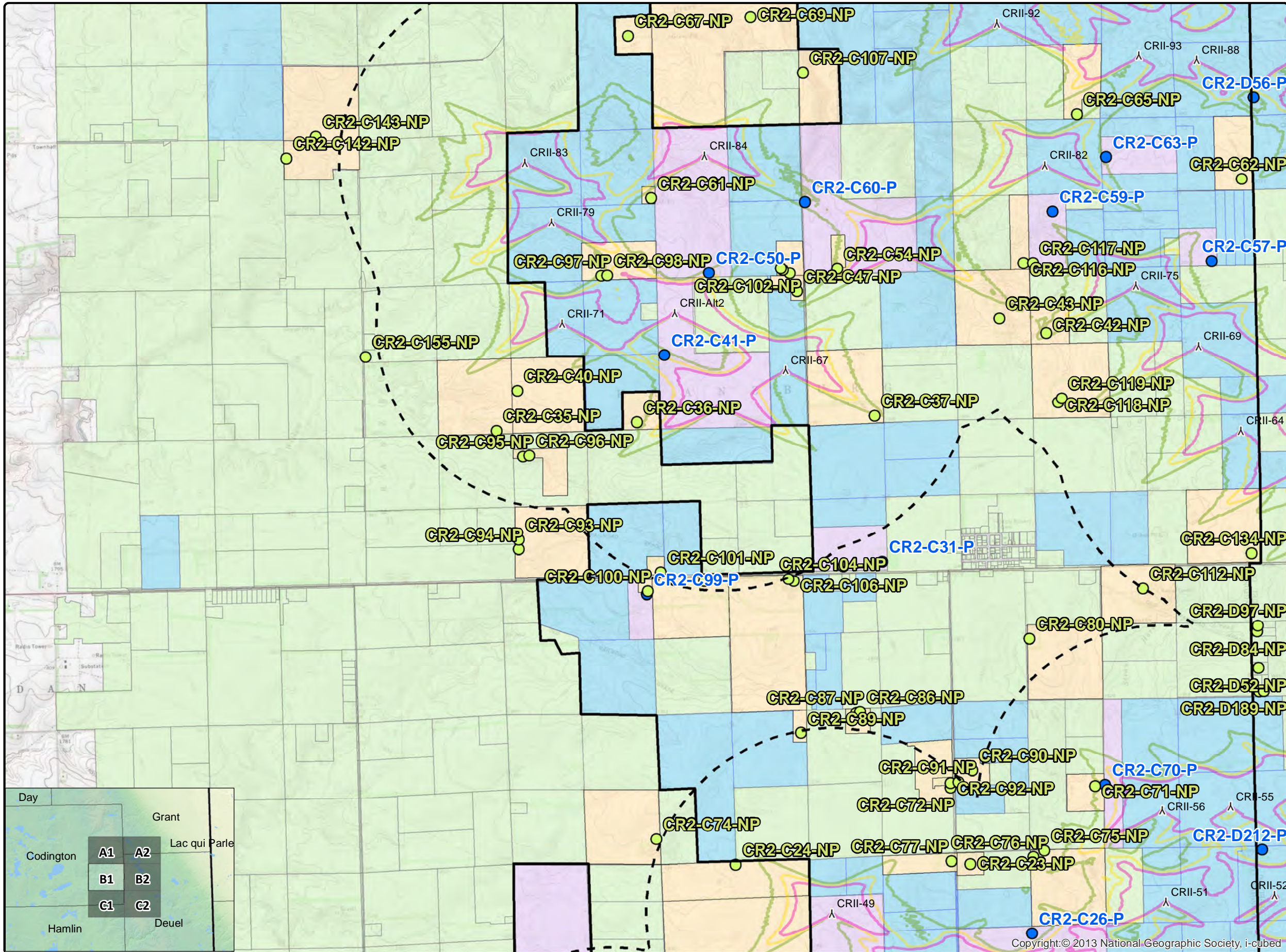
#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend

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 - ▭ Participating Parcels

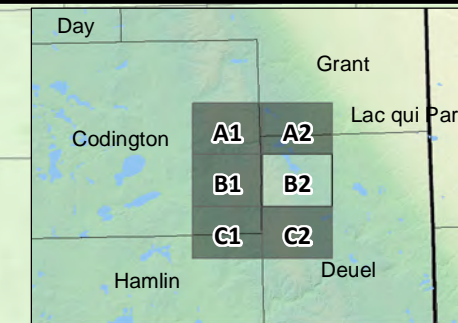
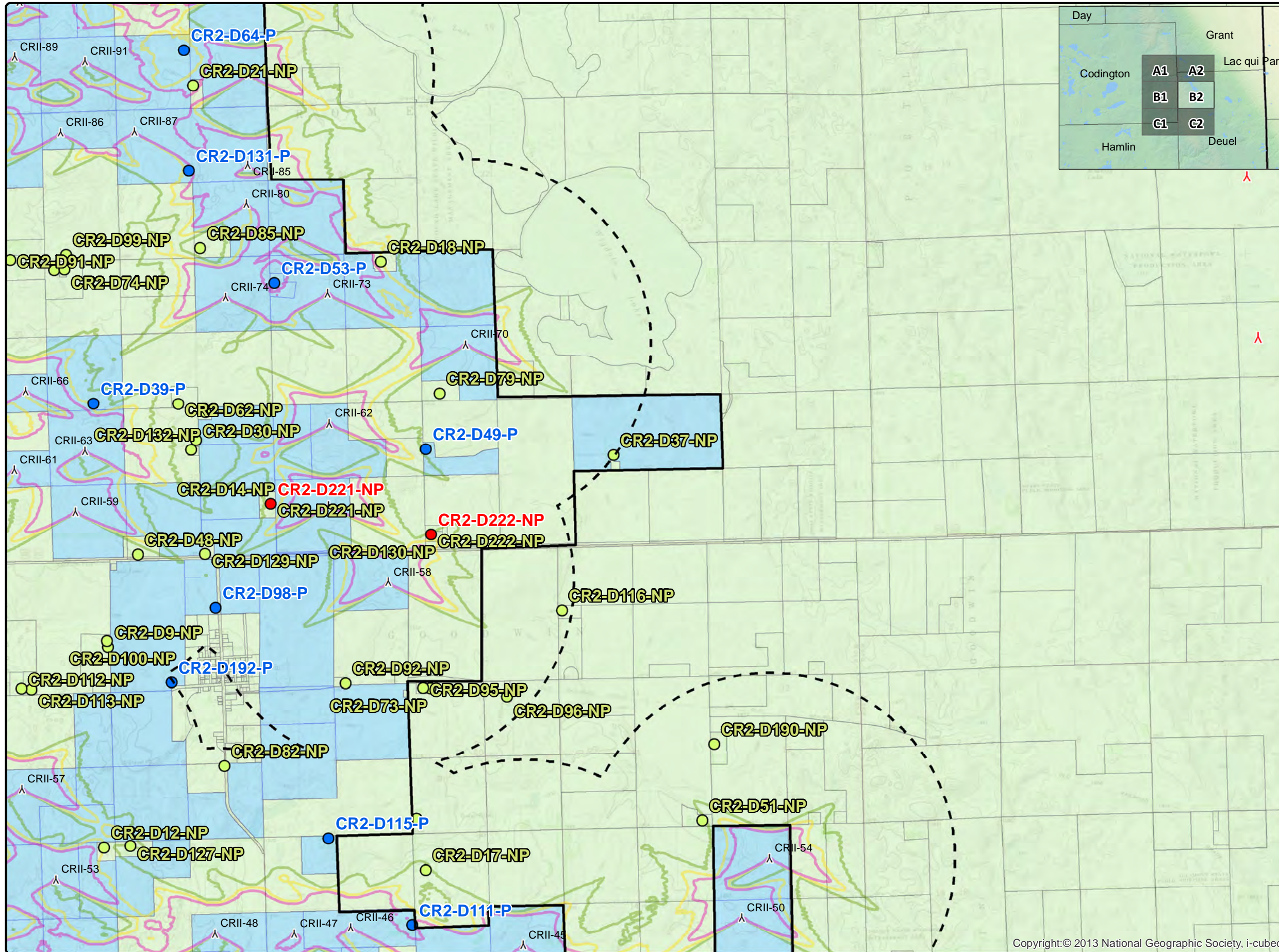
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0 0.275 0.55 1.1 Mile

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**Crowned Ridge II Wind Farm
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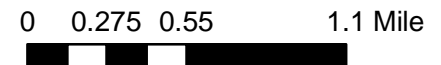
Issue Dates

#	Description	Date
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Drawn By: AS Checked By: JH

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**Crowned Ridge II Wind Farm
300 MW
Shadow Flicker Iso-Lines**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD
Project #: 20174431

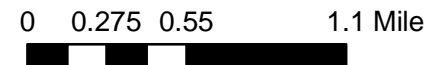
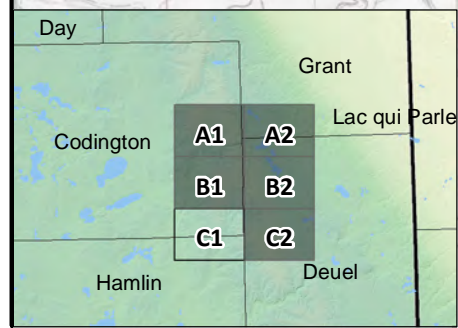
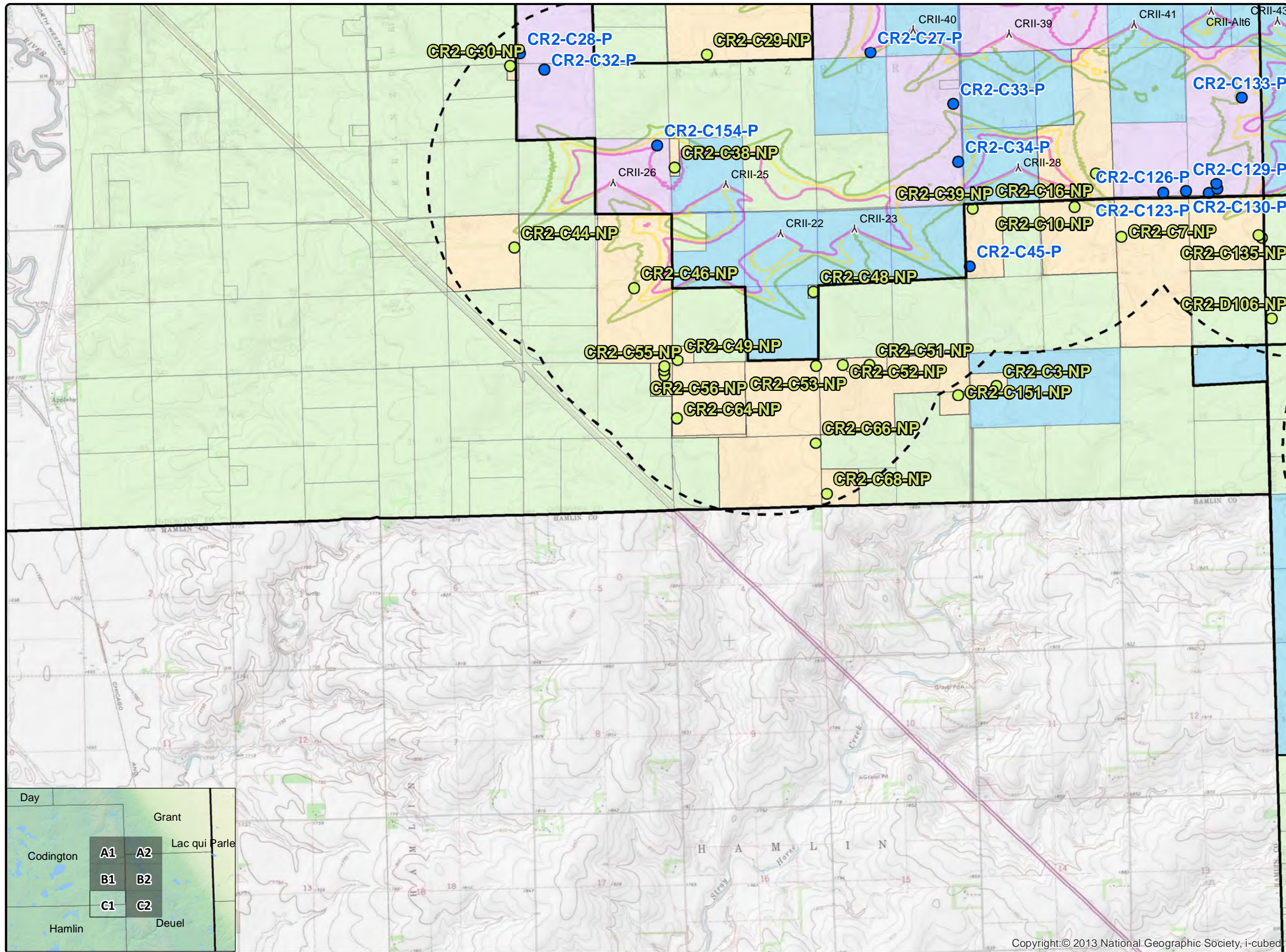
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

- Legend**
- ▲ Crowned Ridge II Turbines 300 MW
 - ▲ Crowned Ridge Turbines
 - ▲ Deuel Harvest Turbines
 - 2 km Turbine Buffer
 - County Lines
 - CR II Project Boundary
 - CR II Intervenor
 - Non-Participants Shadow
 - Participants Shadow
- Shadow Flicker (hr/yr)**
- 10
 - 15
 - 20
 - 25
 - 30
- Non-Participating Codington Parcels
 - Participating Codington_Parcels
 - Non-Participating Parcels
 - Participating Parcels

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300 MW
Shadow Flicker Iso-Lines**

Client
SWCA Environmental Consultants

Project Description
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Predicted shadow flicker levels at existing residences.

Hessler array with 6 alternates

Location: Watertown, SD
Project #: 20174431

Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS *Checked By:* JH

Legend

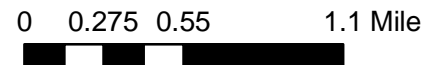
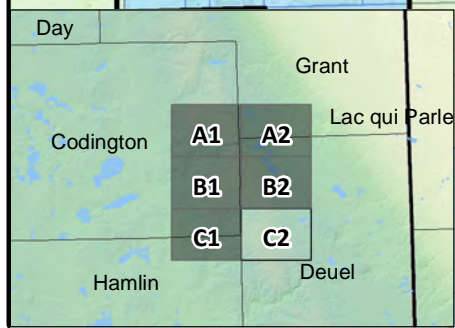
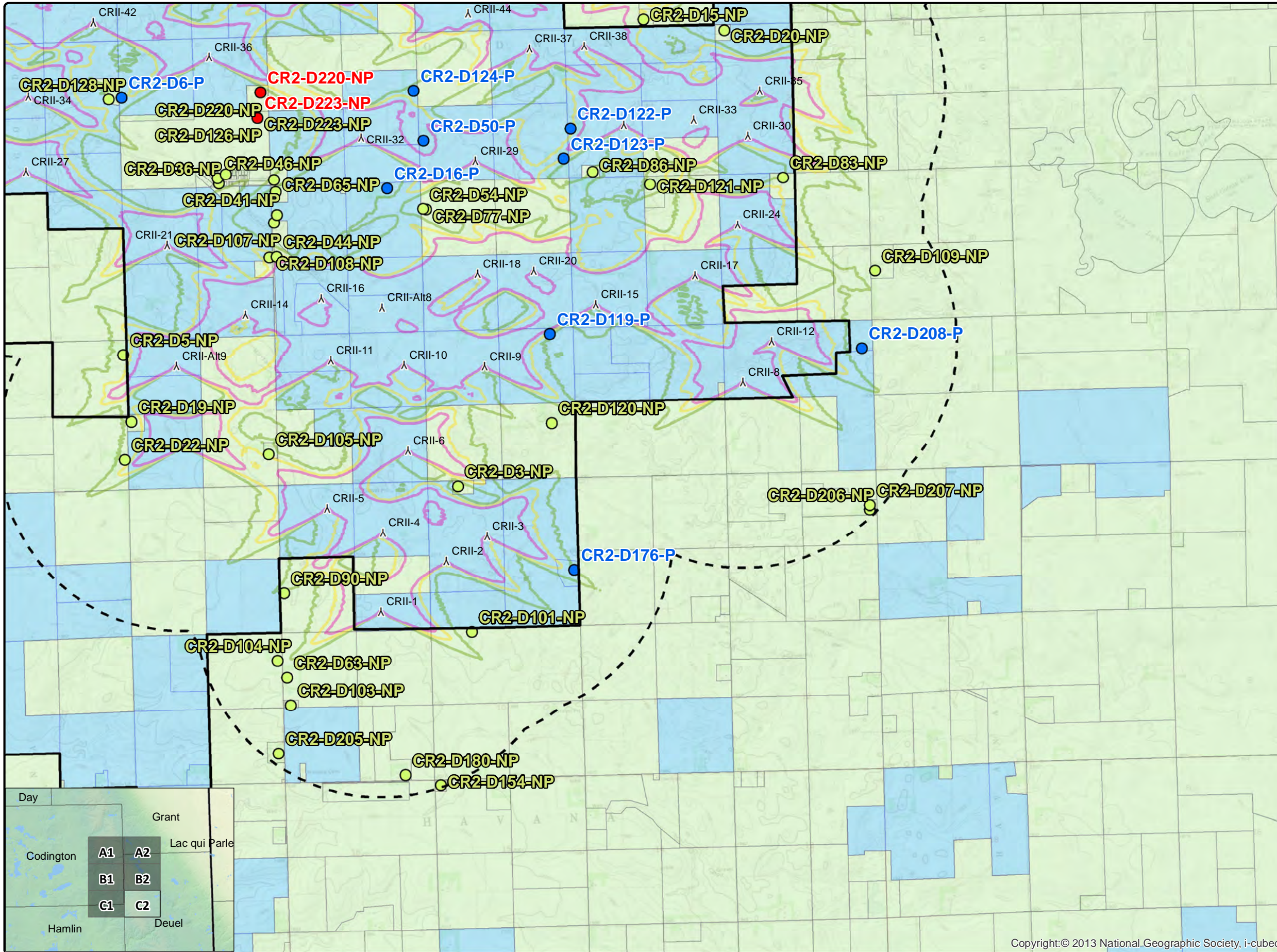
- ▲ Crowned Ridge II Turbines 300 MW
- ▲ Crowned Ridge Turbines
- ▲ Deuel Harvest Turbines
- 2 km Turbine Buffer
- County Lines
- CR II Project Boundary
- CR II Intervenor
- Non-Participants Shadow
- Participants Shadow

Shadow Flicker (hr/yr)

- 10
- 15
- 20
- 25
- 30

- Non-Participating Codington Parcels
- Participating Codington_Parcels
- Non-Participating Parcels
- Participating Parcels

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**Crowned Ridge II Wind Farm
300 MW
Overview Map**

Client: SWCA Environmental Consultants

Project Description: Wind turbine layout with land parcels within the project footprint and existing occupied structures.

Codington County land parcels within 2 km of a wind turbine.

NEER array with 4 alternates.

Location: Watertown, SD

Project #: 20174431

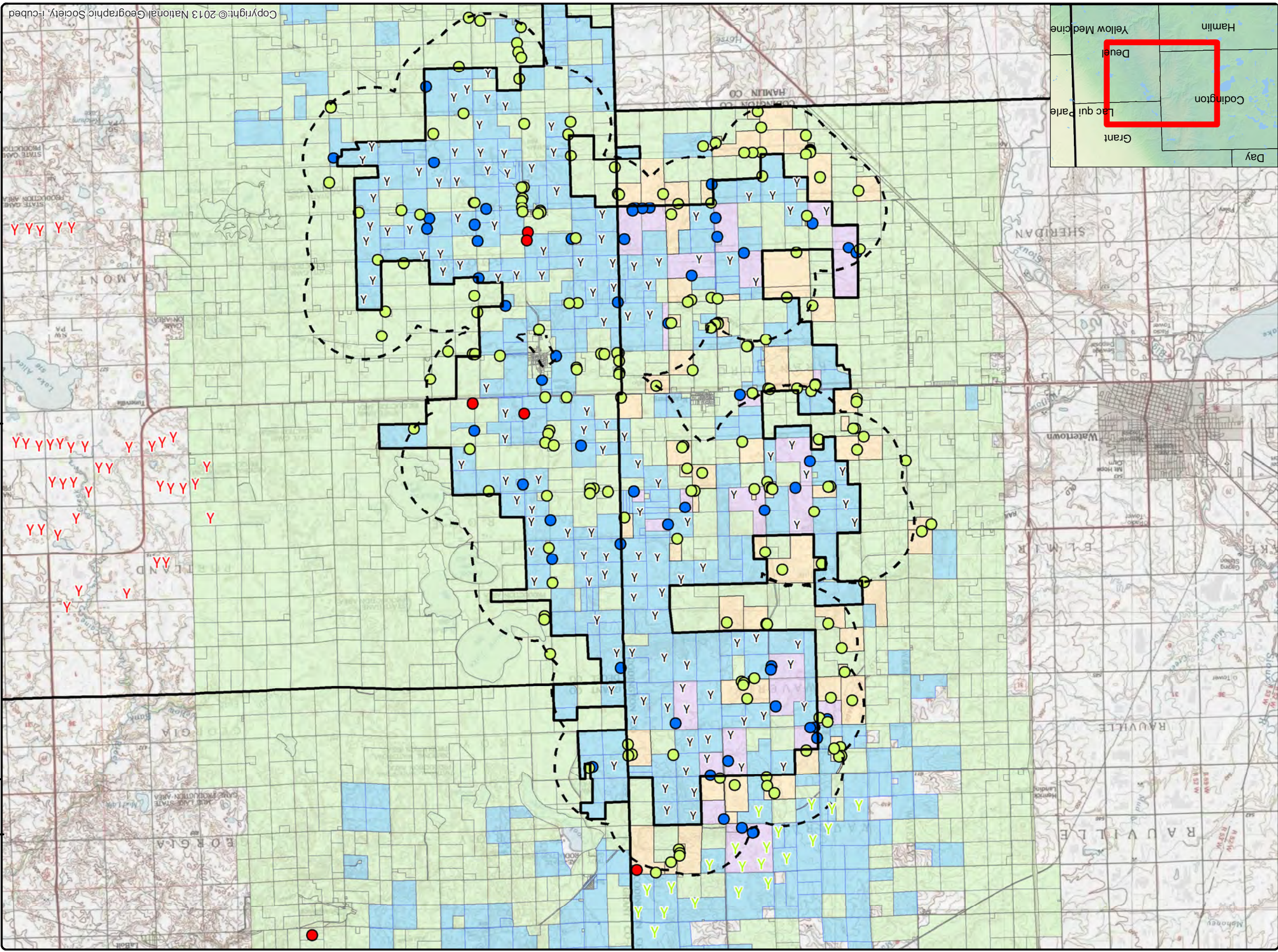
Issue Dates

#	Description	Date
1	Original	2019.12.30

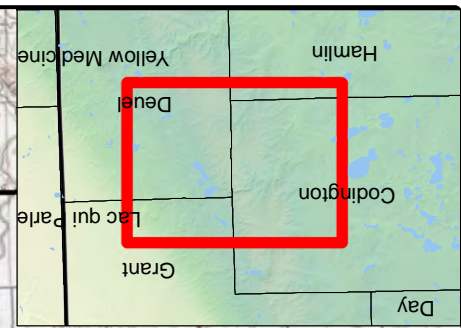
Drawn By: AS Checked By: JH

Legend

- Y Crowned Ridge II Turbines 300 MW
- Y Crowned Ridge Turbines
- Y Deuel Harvest Turbines
- - - 2 km Turbine Buffer
- County Lines
- CR II Project Boundary
- CR II Intervenor
- Non-Participants Noise
- Participants Noise
- Non-Participating Codington Parcels
- Participating Codington Parcels
- Non-Participating Parcels
- Participating Parcels



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0 0.75 1.5 3 Mile

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**Crowned Ridge II Wind Farm
300 MW
Shadow Overview Map**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.

Predicted shadow flicker levels at existing residences.

NEER array with 4 alternates

Location: Watertown, SD
Project #: 20174431

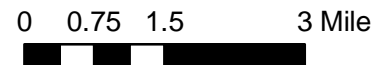
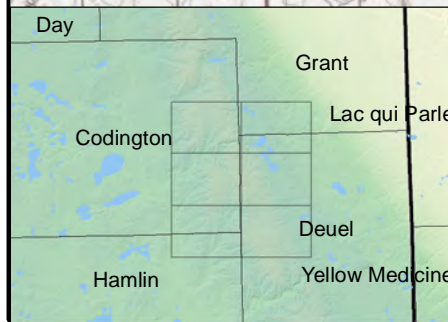
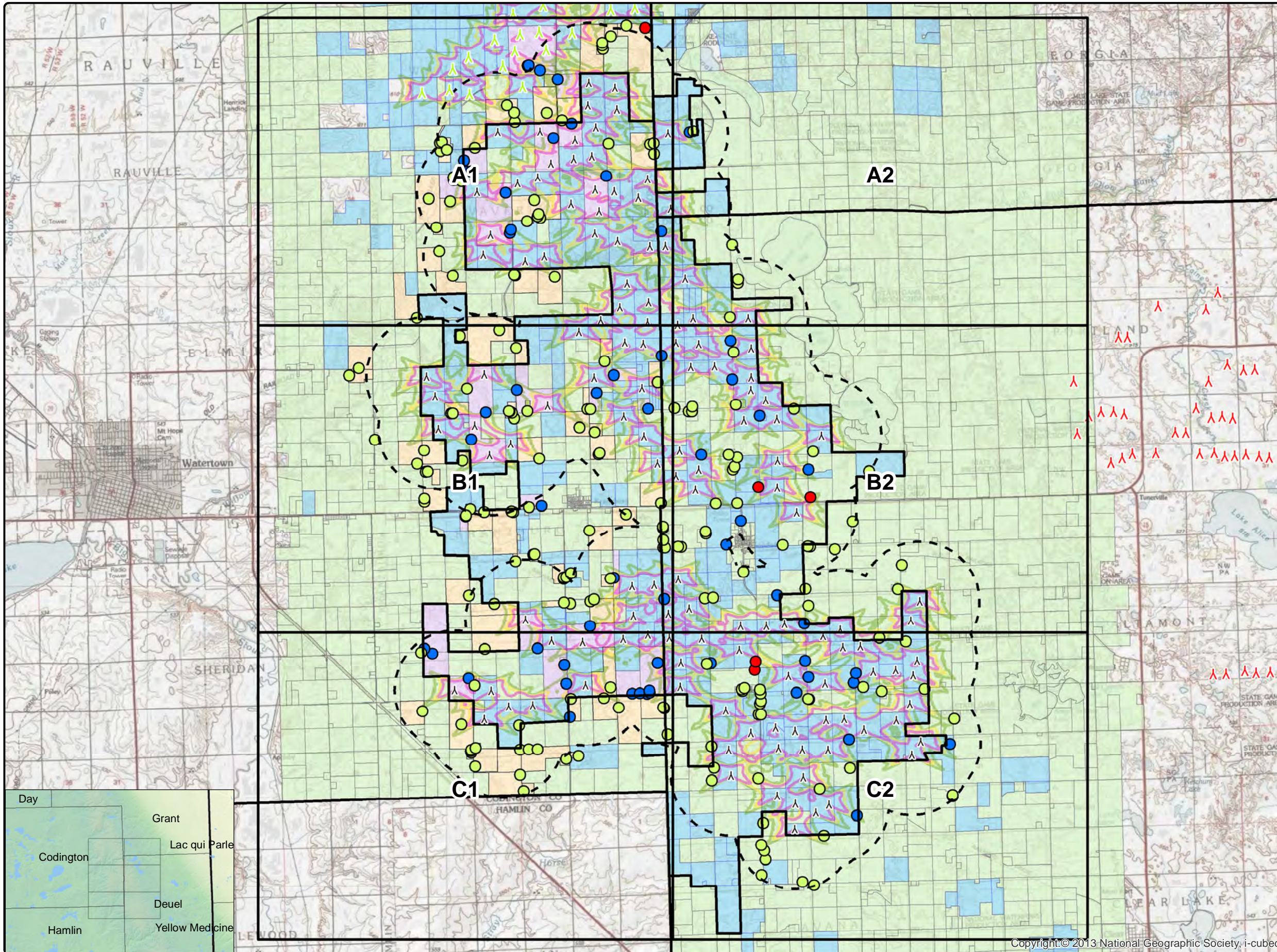
Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

- Legend**
- ▲ Crowned Ridge II Turbines 300 MW
 - ▲ Crowned Ridge Turbines
 - ▲ Deuel Harvest Turbines
 - 2 km Turbine Buffer
 - County Lines
 - CR II Project Boundary
 - CR II Intervenor
 - Non-Participants Shadow
 - Participants Shadow
- Shadow Flicker (hr/yr)**
- 10
 - 15
 - 20
 - 25
 - 30
- Non-Participating Codington Parcels
 - Participating Codington_Parcels
 - Non-Participating Parcels
 - Participating Parcels

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**Crowned Ridge II Wind Farm
300 MW
Shadow Flicker Iso-Lines**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.
Predicted shadow flicker levels at existing residences.
NEER array with 4 alternates

Location: Watertown, SD
Project #: 20174431

Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend

- ▲ Crowned Ridge II Turbines 300 MW
- ▲ Crowned Ridge Turbines
- ▲ Deuel Harvest Turbines
- 2 km Turbine Buffer
- County Lines
- CR II Project Boundary
- CR II Intervenor
- Non-Participants Shadow
- Participants Shadow

Shadow Flicker (hr/yr)

- 10
- 15
- 20
- 25
- 30

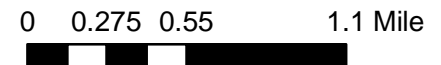
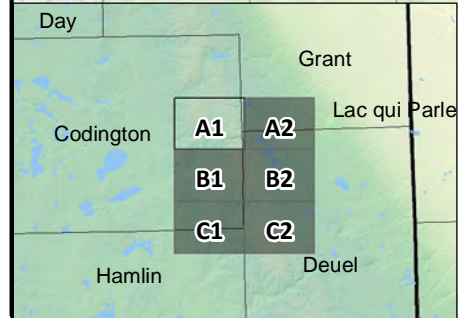
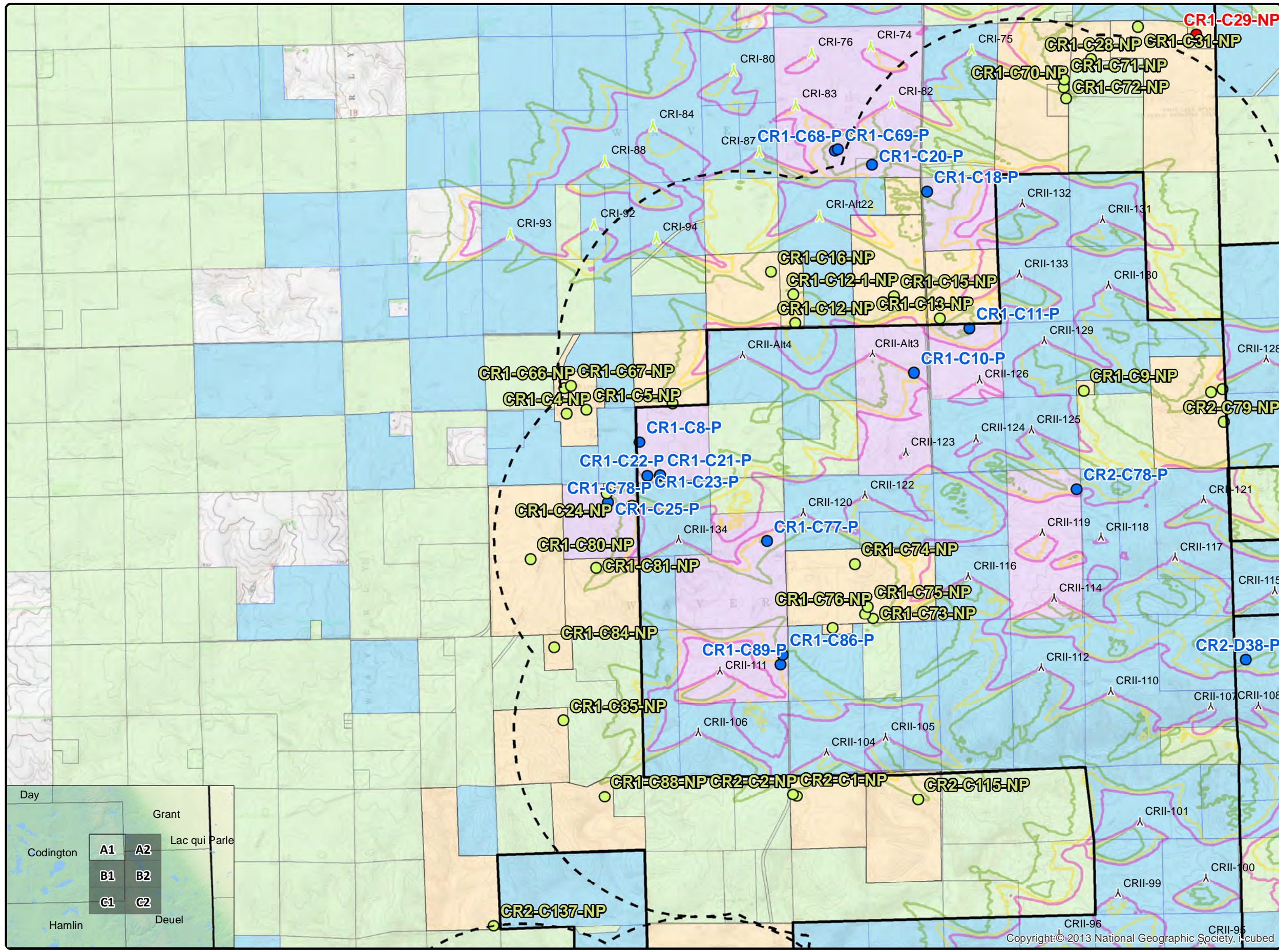
- Non-Participating Codington Parcels
- Participating Codington_Parcels
- Non-Participating Parcels
- Participating Parcels

Shadow Flicker (hr/yr)

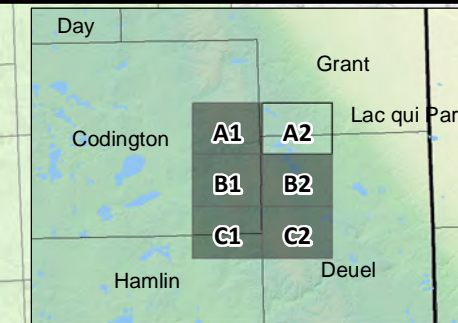
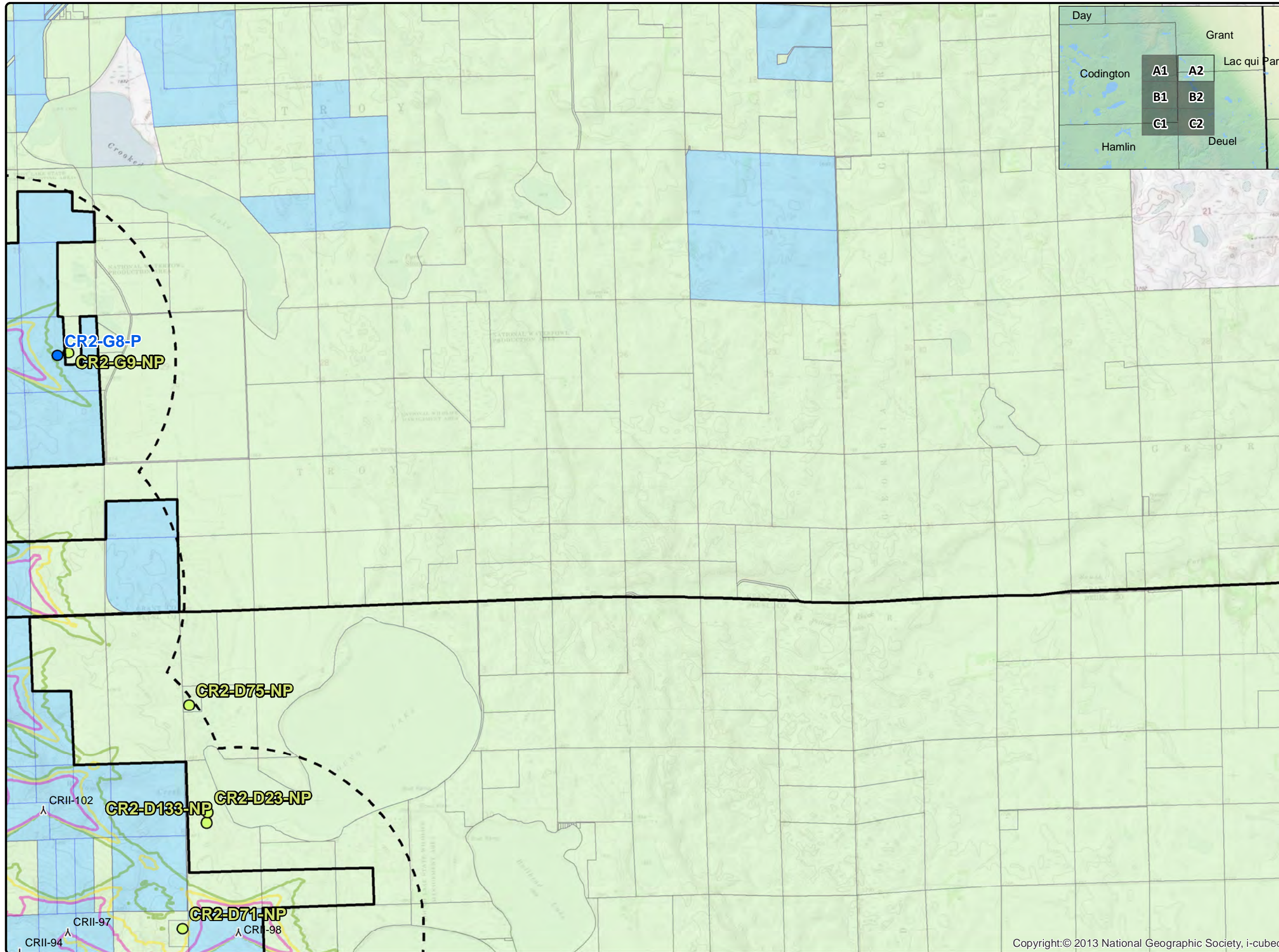
- 10
- 15
- 20
- 25
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- Non-Participating Codington Parcels
- Participating Codington_Parcels
- Non-Participating Parcels
- Participating Parcels

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**Crowned Ridge II Wind Farm
300 MW
Shadow Flicker Iso-Lines**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.
Predicted shadow flicker levels at existing residences.
NEER array with 4 alternates

Location: Watertown, SD
Project #: 20174431

Issue Dates

#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend

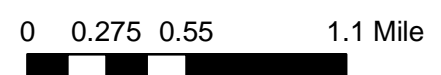
- ▲ Crowned Ridge II Turbines 300 MW
- ▲ Crowned Ridge Turbines
- ▲ Deuel Harvest Turbines
- - - 2 km Turbine Buffer
- - - County Lines
- - - CR II Project Boundary
- CR II Intervenor
- Non-Participants Shadow
- Participants Shadow

Shadow Flicker (hr/yr)

- 10
- 15
- 20
- 25
- 30

- Non-Participating Codington Parcels
- Participating Codington_Parcels
- Non-Participating Parcels
- Participating Parcels

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Location: Watertown, SD

Project #: 20174431

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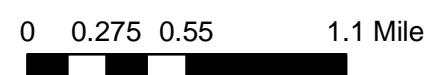
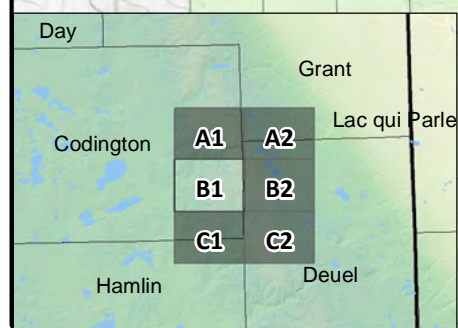
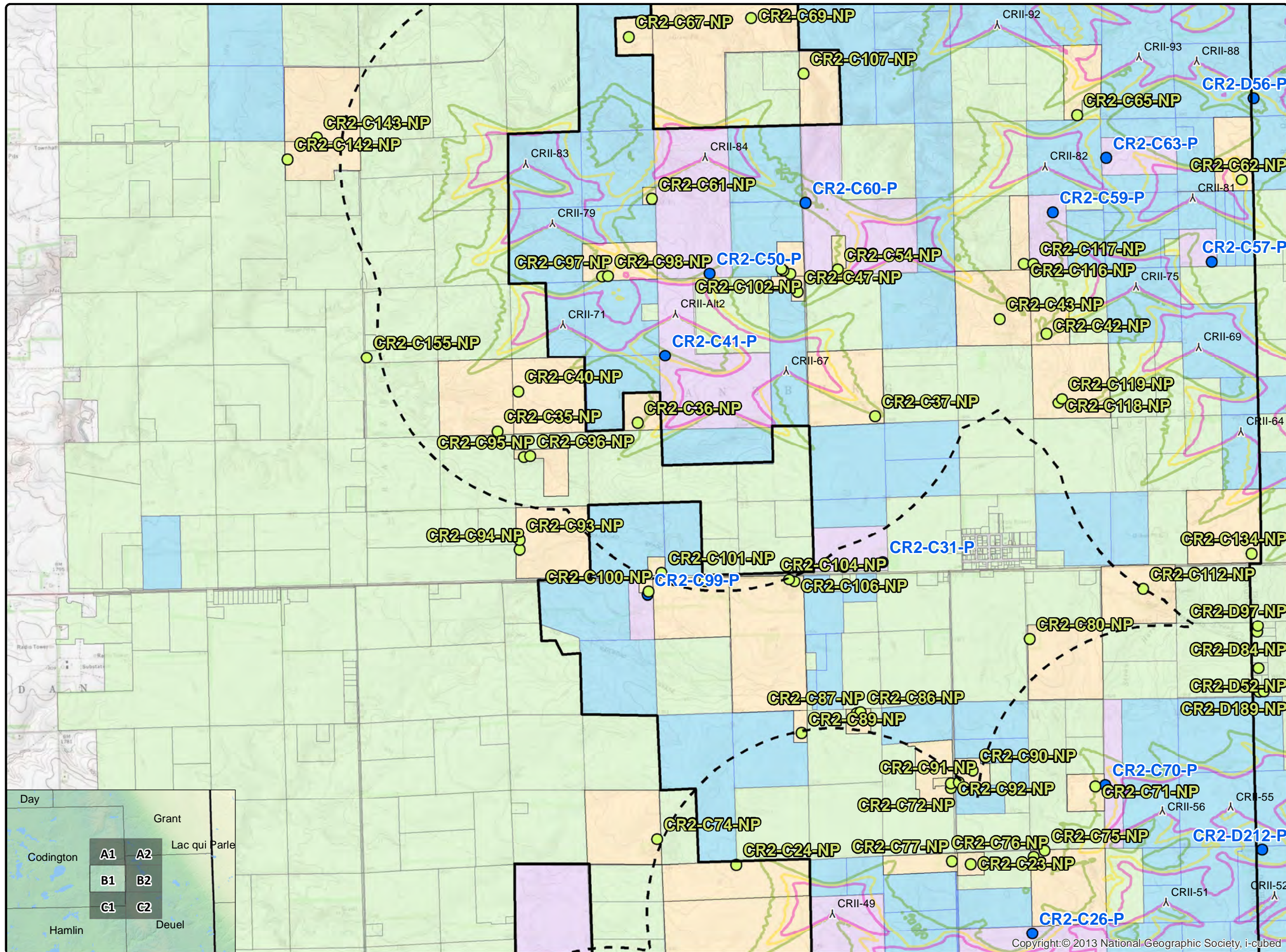
#	Description	Date
1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend

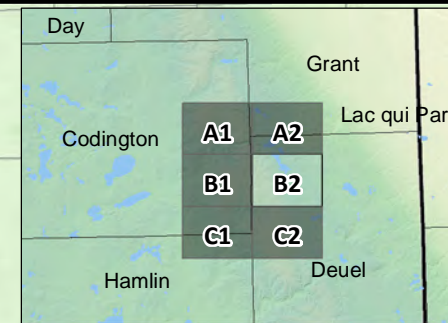
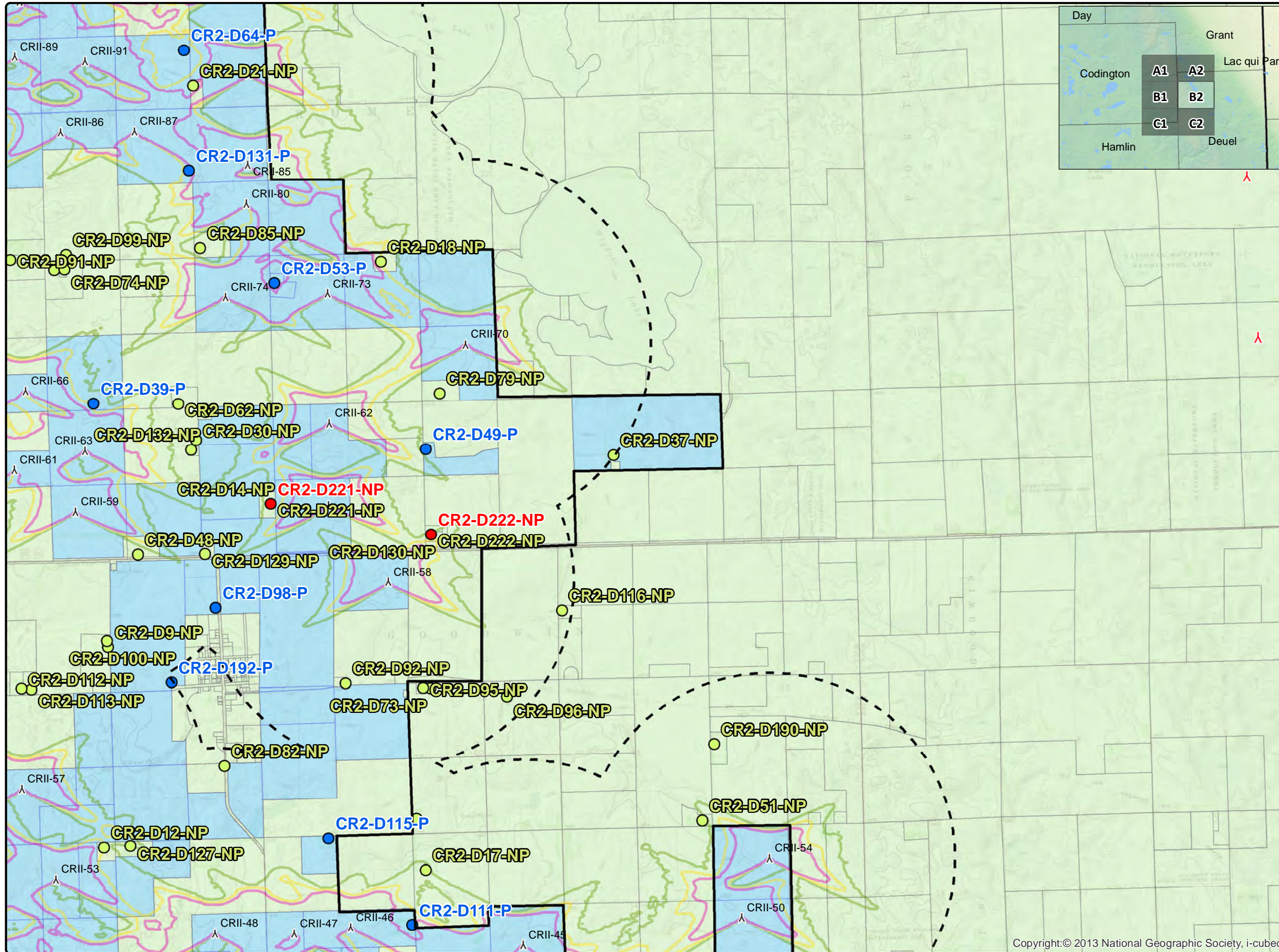
- ▲ Crowned Ridge II Turbines 300 MW
- ▲ Crowned Ridge Turbines
- ▲ Deuel Harvest Turbines
- 2 km Turbine Buffer
- ▭ County Lines
- ▭ CR II Project Boundary
- CR II Intervenor
- Non-Participants Shadow
- Participants Shadow
- Shadow Flicker (hr/yr)**
- 10
- 15
- 20
- 25
- 30
- ▭ Non-Participating Codington Parcels
- ▭ Participating Codington_Parcels
- ▭ Non-Participating Parcels
- ▭ Participating Parcels

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**Crowned Ridge II Wind Farm
300 MW
Shadow Flicker Iso-Lines**

Client
SWCA Environmental Consultants

Project Description
Wind turbine layout with occupied structures within 2 km.
Predicted shadow flicker levels at existing residences.
NEER array with 4 alternates

Location: Watertown, SD
Project #: 20174431

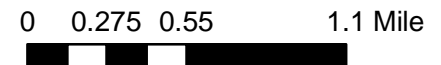
Issue Dates

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Drawn By: AS Checked By: JH

- Legend**
- △ Crowned Ridge II Turbines 300 MW
 - △ Crowned Ridge Turbines
 - △ Deuel Harvest Turbines
 - - - 2 km Turbine Buffer
 - ▭ County Lines
 - ▭ CR II Project Boundary
 - CR II Intervenor
 - Non-Participants Shadow
 - Participants Shadow
- Shadow Flicker (hr/yr)**
- 10
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 - 20
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- ▭ Non-Participating Codington Parcels
 - ▭ Participating Codington_Parcels
 - ▭ Non-Participating Parcels
 - ▭ Participating Parcels

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300 MW
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SWCA Environmental Consultants

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NEER array with 4 alternates

Location: Watertown, SD

Project #: 20174431

Issue Dates

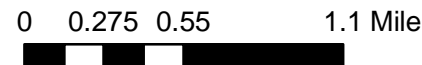
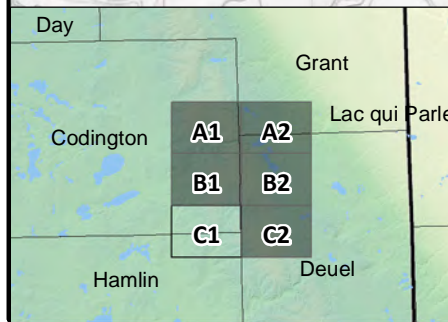
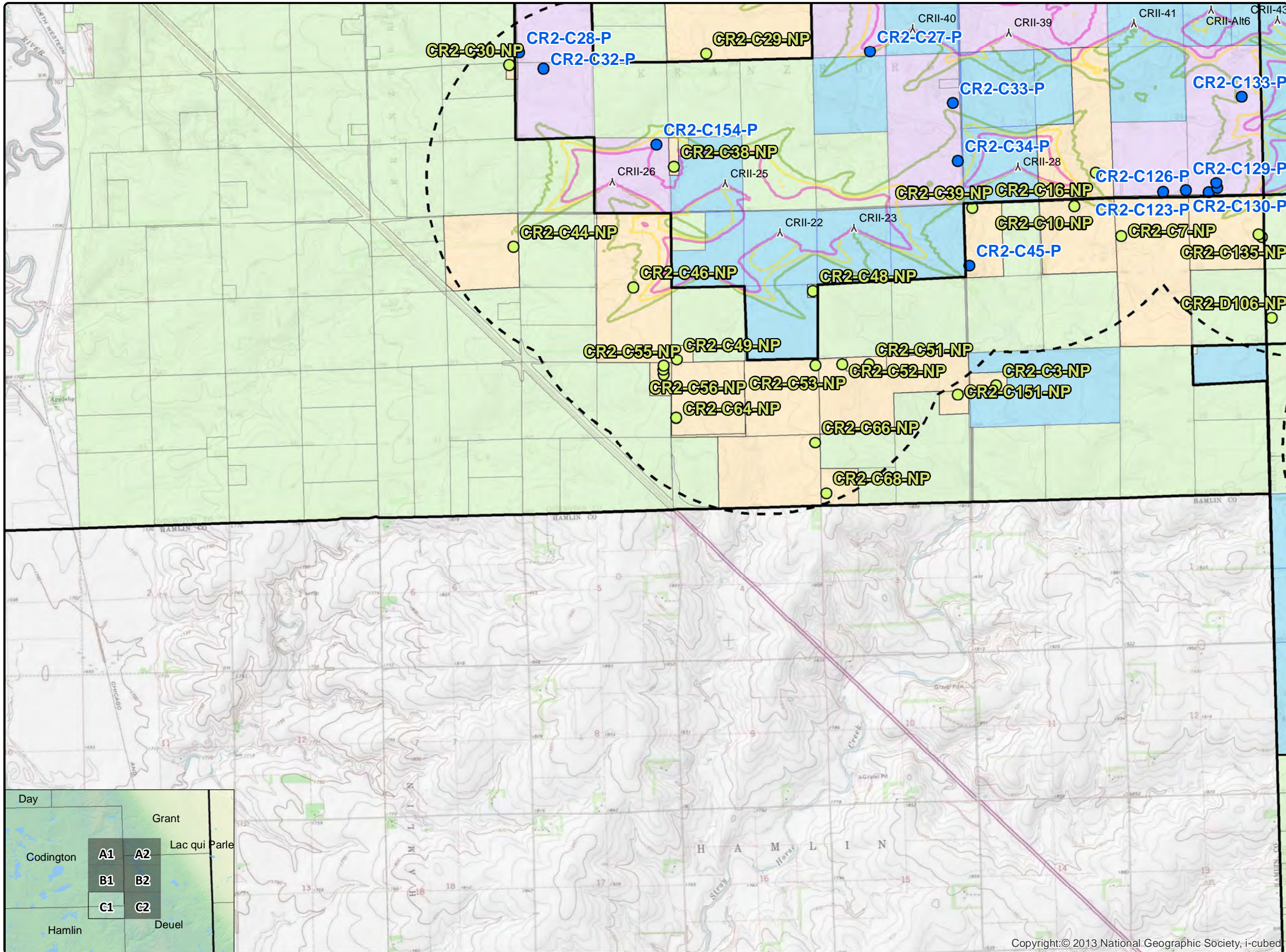
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1	Original	2019.12.30

Drawn By: AS Checked By: JH

Legend

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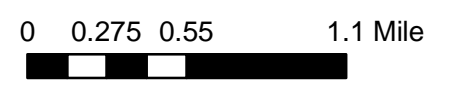
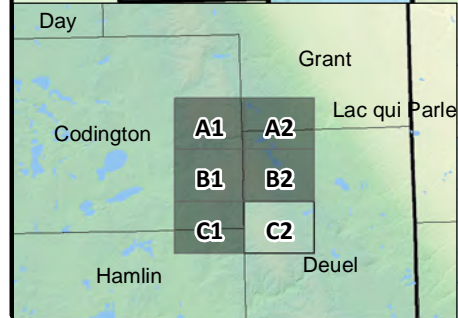
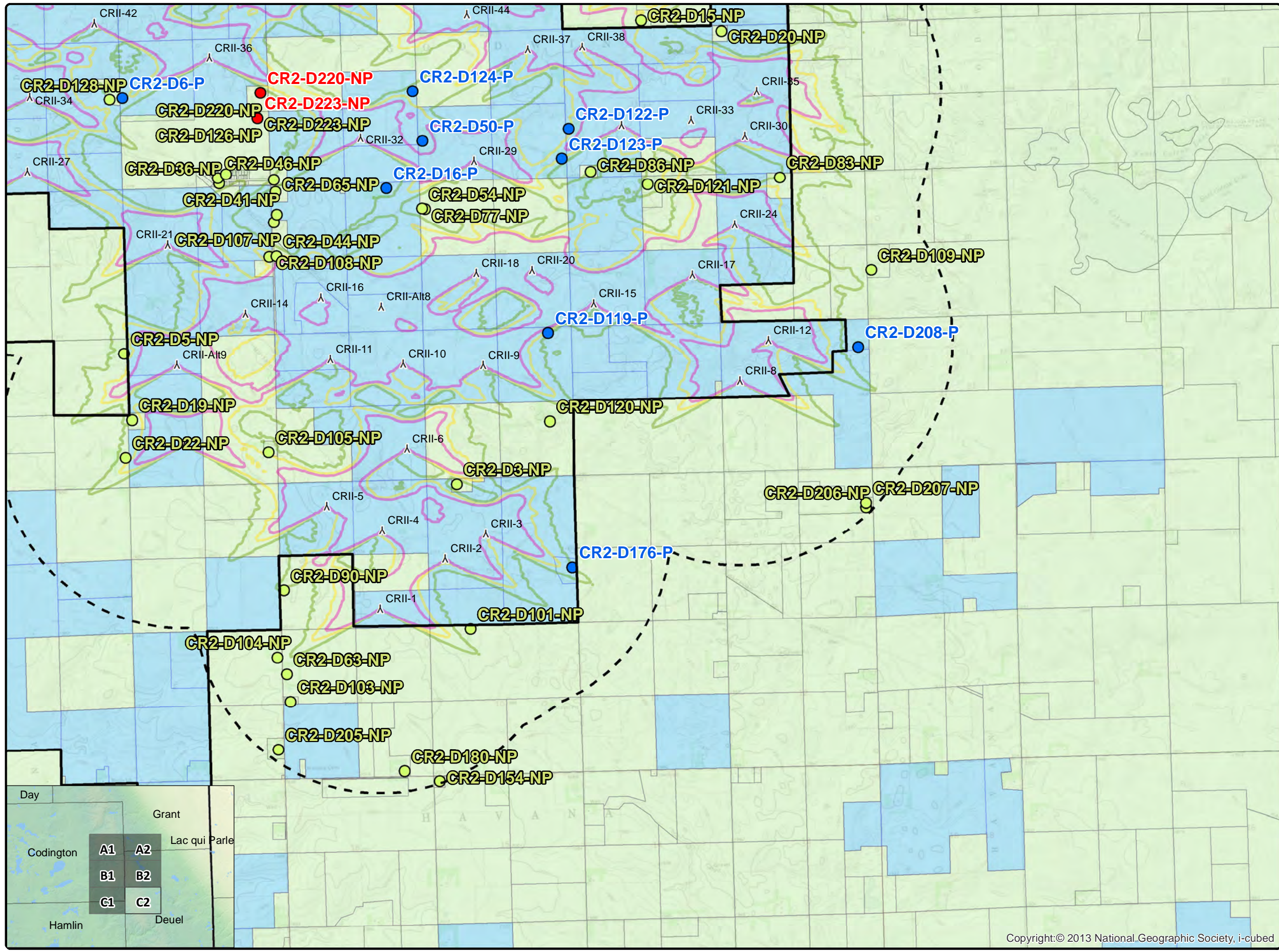
- ▲ Crowned Ridge II Turbines 300 MW
- ▲ Crowned Ridge Turbines
- ▲ Deuel Harvest Turbines
- 2 km Turbine Buffer
- County Lines
- CR II Project Boundary
- CR II Intervenor
- Non-Participants Shadow
- Participants Shadow

Shadow Flicker (hr/yr)

- 10
- 15
- 20
- 25
- 30

- Non-Participating Codrington Parcels
- Participating Codrington_Parcels
- Non-Participating Parcels
- Participating Parcels

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