APPENDIX O

Shadow Flicker Analysis

SHADOW FLICKER ANALYSIS

PREPARED FOR:
TERRA-GEN DEVELOPMENT COMPANY, LLC

Ref. No.: 19-01368

CAMPO WIND PROJECT WITH BOULDER BRUSH FACILITIES
San Diego County
California

13 November 2019

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1. INTRODUCTION

AWS Truepower, LLC, a UL company ("UL"), was retained by Terra-Gen Development Company, LLC (Terra-Gen) to complete a shadow flicker analysis for the Campo Wind Project with Boulder Brush Facilities ("Project") located in southeastern San Diego County, California.

The Project consists of both the Campo Wind Facilities that would be on leased lands within the Campo Band of Diegueño Mission Indians (Campo Tribe) Reservation (Campo Reservation Boundary) under the jurisdiction of the Bureau of Indian Affairs, and the Boulder Brush Facilities that would be located on adjacent leased land from a private landowner under County of San Diego jurisdiction. The Campo Wind Facilities would consist of up to 60 wind turbines within a corridor of approximately 2,200 acres of land within the approximately 16,000-acre Campo Reservation Boundary. There are no turbines included as part of the Boulder Brush Facilities. While only 60 wind turbines can be constructed pursuant to the Campo Lease, this analysis has conservatively modeled wind turbines at 76 turbine locations. This report discusses the methods used to develop the expected-case shadow flicker estimates and presents the results of the analysis.

The Campo Reservation is surrounded by open space and rural residential developments in unincorporated communities. The Manzanita Band of Diegueño Mission Indians Reservation borders the northern portion of the Campo Reservation and the La Posta Band of Diegueño Mission Indians Reservation is located to the northwest (see Figure 1.1). For the purposes of this report, the term "On-Reservations" refers to anything within the reservation boundaries of the Campo, La Posta and Manzanita tribes while the term "Off-Reservations" refers to anything outside of the Campo, La Posta and Manzanita tribal reservation boundaries.

2. BACKGROUND

Shadow flicker is a term used to describe the flickering of shadows that are cast by a wind turbine's rotating blades when the sun is behind them.[2.1] It is caused when the rotor of the turbine is between the observer and the sun, and generally occurs during the morning or evening hours when the sun is low in the sky.

The number of annual hours of shadow flicker at a given location can be modeled with specialized software that incorporates topographic variation, wind turbine specifications (hub height and rotor diameter), trajectory of the sun, probability of cloud cover, and probable direction of prevailing winds. The likelihood and duration of shadow flicker depends on a number of variables, namely:

1. Orientation of the receptor location relative to the turbine;
2. Wind direction: The shape and intensity of the shadow are determined by the position of the sun relative to turbine blades (the turbine rotor continuously yaws to face the wind so the rotor plane will always be perpendicular to the wind direction);
3. Distance from turbine: The farther the observer from the turbine, the less pronounced the effect;
4. Turbine height and rotor diameter: A larger turbine rotor diameter will cast a larger shadow, meaning a larger area would be prone to incidences of shadow flicker;
5. Time of year and day: Position of sun relative to the horizon;

[2.1] Burton, T., Sharpe, D., Jenkins, N., Bossanyi, E., "Wind Energy Handbook," John Wiley & Sons, LTD, New York. 2001.

6. Weather conditions: Cloud cover reduces the occurrence of shadow flicker;
7. Vegetation and other obstacles that help to mask shadows;
8. Operational status of turbines

See Section 4 for more information on specific model inputs used in this assessment.

In this report, a receptor location is defined as a structure visible on aerial imagery found within the Project Site and surrounding area that is potentially habitable. Receptor locations, On-Reservations and Off-Reservations, were provided by Terra-Gen; UL has not conducted a site visit to confirm locations of the receptors provided for this analysis. Off-Reservations receptor locations are provided in the figures contained within Appendix C. In order to respect tribal resident privacy, locations/coordinates of On-Reservations receptors are not disclosed in this report.

3. APPLICABLE REGULATIONS

There are no federal regulations under the National Environmental Policy Act (NEPA) applicable to shadow flicker for receptors located on Reservations. However, and in accordance with the lease agreement between the Campo Tribe and Terra-Gen (Campo Lease), no Project turbines will be sited within 0.25-mile (or 1,320 feet) of any receptor on the Campo Reservation. Based on the current 76-turbine layout, no Project turbines are sited within 1,000 feet of any receptor outside of the Campo Reservation.

In addition, there are no state or local regulations under the California Environmental Quality Act (CEQA) applicable to shadow flicker for receptors located Off-Reservations on private land. The County of San Diego suggested application of the shadow flicker guideline used in the Final Program Environmental Impact Report (EIR) for the Altamont Pass Wind Resource Area Repowering (Repower), in Alameda County, California to evaluate potential shadow flicker generated from the Repower. The guideline indicates that where shadow flicker could result from the installation of wind turbines proposed near receptors (i.e., within 500 meters [1,640 feet] in a generally east or west direction to account for seasonal variations), the project applicant shall prepare a graphic model and study to evaluate shadow flicker impacts on nearby receptors. Receptors that experience shadow flicker in excess of 30 minutes in a given day or 30 hours in a given year would require minimization measures to reduce potential effects.[3.1]

While the County of San Diego has no jurisdiction over the siting of the Project turbines on the Campo Reservation, this analysis uses the Alameda County guideline as suggested by San Diego County to evaluate potential shadow flicker effects from Project turbines on receptors both On- and Off-Reservations. As noted above, however, this analysis is conservative as it analyzes up to 76 turbines, 16 more turbines than will be constructed under the terms of the Campo Lease.

[3.1] Alameda County Community Development Agency. 2014. Altamont Pass Wind Resource Area Repowering Final Program Environmental Impact Report. Certified November, 2014.

4. METHODOLOGY

This report includes model runs to evaluate three shadow flicker scenarios as listed below:

- **Scenario 1 (Baseline):** includes existing, operational wind turbines at the Golden Acorn Casino, Kumeyaay Wind, and Tule Wind Projects.
- **Scenario 2 (Baseline + Project):** includes the operational wind projects in Scenario 1 as well as 76 Project turbines.
- **Scenario 3 (Baseline + Project + Cumulative):** includes the operational wind projects in Scenario 1, 76 Project turbines, and the reasonably foreseeable future Torrey Wind Project (30 proposed turbines).

Potential shadow flicker resulting from all three scenarios were estimated using the Openwind software. Openwind was developed by UL as an aid for the design, optimization, and assessment of wind power projects. High-resolution terrain data, cloud cover probability, wind speed and direction probability, and turbine specifications, including rotor diameter and blade rotation speed, can be input into the model to closely approximate annual shadow flicker.

In this shadow flicker analysis, expected-case scenarios were modeled. An expected-case scenario incorporates local cloud cover data, as well as meteorological data gathered on the Project Site to simulate a likely case for wind speed and wind direction. Shadow flicker is reduced when cloud cover, wind speed, and wind direction data are incorporated because it is not always sunny during daylight hours, the turbine will not always operate due to very low or very high winds, and the turbine will often face a direction that will produce a different spatial distribution of flickering shadows.

4.1 Model Inputs

Coordinates for the 76 Project turbine sites modeled; proposed Torrey Wind Project turbine coordinates (based on the preliminary layout, which is still under development and subject to change), and turbine coordinates for the existing, operating Golden Acorn, Kumeyaay Wind, and Tule Wind Projects are presented in Appendix A. It should be noted, while 76 Project turbine locations were modeled and are presented in Appendix A, only 60 wind turbines can be constructed pursuant to the Campo Lease.

4.1.1 Orientation of the Receptor Location Relative to the Turbine

Since sunshine becomes less intense as the sun nears the horizon, it is standard practice for shadow flicker to be only modeled when the sun is at an angle of 3 or more degrees.

The average height of a woman/man in the United States ranges from 5 feet 4 inches to 5 feet 9 inches. As such, this analysis assumes an observer height of 1.75 m (approximately 5.8 feet).

4.1.2 Wind Direction

Atmospheric inputs were based on a wind resource grid from UL's Sitewind model run for the Project, which covers the region at hub heights ranging from 67 m to 110 m. The Sitewind model consists of three main components:

- A mesoscale model, Weather Research and Forecasting (WRF[4.2]), which simulate regional weather patterns and was run with a grid spacing of 1.0 km.

[4.2] Skamarock, W. C. (2004). "Evaluating Mesoscale NWP Models Using Kinetic Energy Spectra". *Mon. Wea. Rev.,* vol. 132, pp. 3019-3032.

- A microscale model (WindMap) which simulates the localized effects of topography and surface roughness on a grid spacing of 50 m.
- The analysis of meteorological data from nine on-site monitoring masts which were provided by Terra-Gen. Concurrent data from three of these masts (identified as mast 3597, 5081, and 5083) from 01 September 2011 to 31 August 2012 were used in order to assess expected wind speed and wind direction across the Project site to assess when turbines would be operating.

4.1.3 Distance from the Turbine

While the perceived effects of shadow flicker diminish as one travels away from a turbine, there are differing opinions as to the minimum distance between turbines and the nearest receptor that should be modeled to capture shadow flicker. While minimum distances of 500 meters to 10 rotor diameters (or when 20% or more of the turbine blade would be covered by the sun) are often cited, a more conservative 15 rotor diameters has been used for this analysis in order to capture any possibility of shadow flicker.[4.3]

4.1.4 Turbine Height and Rotor Diameter

Turbine specifications for each facility modeled in this analysis are as shown in Table 4.1.

Table 4.1: Specifications for Modeled Facilities

Facility Name	# of Turbines	Turbine Model/Type	Total Turbine Height (ft)[1]	Rotor Diameter (ft)	Distance at 15 x Rotor Diameter (ft)
Golden Acorn Casino	1	GE 1.85-82.5	398	271	4,050
Kumeyaay Wind	25	Gamesa G87-2.0	363	285	4,275
Tule Wind	57	GE 2.3-107	439	352	5,280
Project	76	GE 3.83-137	586[2]	450	6,750
Proposed Torrey Wind Project	30	GE 3.83-137	586[2]	450	6,750

[1] Total Turbine Height' represents the turbine hub height + the blade length (*ie. 1/2 of the turbine rotor diameter*)
[2] Representative turbine

4.1.5 Time of Year and Day

The shadow flicker simulation in the software uses a solar declination model from the National Renewable Energy Laboratory (NREL) to calculate the solar position and intensity at the Project Site over the course of the year.[4.4]

4.1.6 Weather Conditions

Cloud cover data was obtained from the National Solar Radiation Data Base and uses observed data from the Imperial, California station, the most representative Typical Meteorological Year (TMY3) Station for the Project. The time series of cloud cover data used as input to the analysis contained cloudy sky conditions 9% of the time, and relatively clear sky conditions the remaining 91% of the time.

[4.3] Planning SA, Planning Bulletin "Wind Farms, Draft for Consultation," South Australian Government, August 2002 and Update of UK Shadow Flicker Evidence Base, Department of Energy and Climate Change. Report. 2011.

[4.4] National Renewable Energy Laboratory, Solar Position and Intensity (SOLPOS), February 2000

4.1.7 Vegetation & other Obstacles

The source of topographic data used in the analysis was the National Elevation Dataset (NED) a digital terrain model produced on a 10 m grid by the US Geological Survey (USGS). The primary source of land cover data was the 30 m resolution National Land Cover Dataset, which is produced by the USGS and derived from Landsat imagery.

Potential structures, vegetation and tree cover located between receptors and the turbines, that might screen receptors from shadow flicker at certain times of year and day has not been considered in this analysis.

The model assumes that receptors are in the "greenhouse mode" in which the receptor structure is assumed to be all windows with no trees or vegetation to act as a barrier.

4.1.8 Turbine Operational Status

Shadow flicker was computed conservatively assuming 100% turbine availability and when wind speeds were between the standard operating range of the turbines which is typically between 3 and 25 m/s.

5. RESULTS

Given the aforementioned shadow flicker model inputs, a summary of expected-case results for receptors is provided below:

- **Scenario 1 (Baseline):** includes existing, operational wind turbines at the Golden Acorn Casino, Kumeyaay Wind, and Tule Wind Projects.
  - No Off-Reservations receptors may experience an exceedance of 30 minutes of shadow flicker in any one day and one Off-Reservations receptor may experience an exceedance of 30 hours of shadow flicker in a given year.
  - Approximately 6 On-Reservations receptors may experience shadow flicker for more than 30 minutes in a given day and approximately 7 On-Reservations receptors may experience shadow flicker for more than 30 hours in a given year.
- **Scenario 2 (Baseline + Project):** includes the operational wind projects in Scenario 1 as well as 76 Project turbines.
  - Approximately 31 Off-Reservations receptors may experience shadow flicker for more than 30 minutes in a given day and approximately 99 Off-Reservations receptors may experience shadow flicker for more than 30 hours in a given year.
  - Approximately 72 On-Reservations receptors may experience shadow flicker for more than 30 minutes in a given day and approximately 64 On-Reservations receptors may experience shadow flicker for more than 30 hours in a given year.
- **Scenario 3 (Baseline + Project + Cumulative):** includes the operational wind projects in Scenario 1, 76 Project turbines, and the reasonably foreseeable future Torrey Wind Project (30 proposed turbines).
  - Approximately 34 Off-Reservations receptors may experience shadow flicker for more than 30 minutes in a given day and approximately 101 Off-Reservations receptors may experience shadow flicker for more than 30 hours in a given year.
  - Approximately 72 On-Reservations receptors may experience shadow flicker for more than 30 minutes in a given day and approximately 64 On-Reservations receptors may experience shadow flicker for more than 30 hours in a given year.

Table 5.1 presents those Off-Reservations receptor locations at which the maximum daily shadow flicker or the total annual shadow flicker may exceed the 30 minutes a day or 30 hours a year (30/30) guideline. For a complete list of all Off-Reservations receptors evaluated and their expected-case shadow flicker exposure, please see Appendix B.

Receptor and turbine locations presented in this report are provided in World Geodetic System (WGS) latitude/longitude coordinates. Receptor's physical addresses have not been provided. WGS 84 specifically refers to the year this particular datum was first used, as in 1984. WGS 84 is currently the reference coordinate system used by the Global Positioning System (ie. GPS).

The Figures in Appendix C present the expected annual shadow flicker across all Off-Reservations receptors provided for scenarios 1, 2, and 3, respectively. As applicable, zoomed in figures for each of the receptors clusters which may experience an exceedance of the shadow flicker thresholds are also provided. It should be noted, receptors identified in the Figures for Scenario 2 (C2-A to C2-K) would also be applicable for both Scenario 2 and Scenario 3. Only receptors identified in Figure C3-A are the additional receptors possibly impacted due to Scenario 3.

The outcome of UL's shadow flicker results is a conservative estimate of the actual shadow flicker that may be experienced at a particular receptor near the Project Site. The following would cause shadow flicker to be further reduced:

- Construction of only 60 of the 76 turbines analyzed in this report under the provisions of the Campo Lease would likely lead to less shadow flicker at certain receptors.
- Sunlight may be diffused by the presence of aerosols in the atmosphere. Humidity, smoke, and other aerosols commonly present would result in reduced visibility distances between the receptor and turbine, thereby reducing perceived flickering at the receptor.
- The model assumes that the thickness of the entire length of the turbine blades is that of where the blades meet the hub, when in reality the blades taper away from the hub. As the blade tapers, it is less likely to create shadows at perceptible levels when the observer is sufficiently far from the turbine (*approximately 1 km)*.
- Potential structures, vegetation and tree cover located between receptors and turbines, that might screen receptors from shadow flicker at certain times of year and day has not been considered in this analysis. Trees and other vegetation in close proximity to receptor structures would especially help to minimize the effects of shadow flicker.
- As a conservative assumption, the model assumes that the receptors are in the "greenhouse mode" in which the receptor structure is assumed to be all windows with no trees or vegetation to act as a barrier – a worst case scenario.
- The analysis assumes the turbines all experience 100% availability during all possible operating periods when, in actuality, turbine availability is usually on average 97%.

Shadow flicker effects can be minimized through methods such as the installation of trees strategically located to screen shadow flickering at receptors, or by installing window treatments on windows on the sides of receptors that would be exposed to shadow flicker from wind turbines.

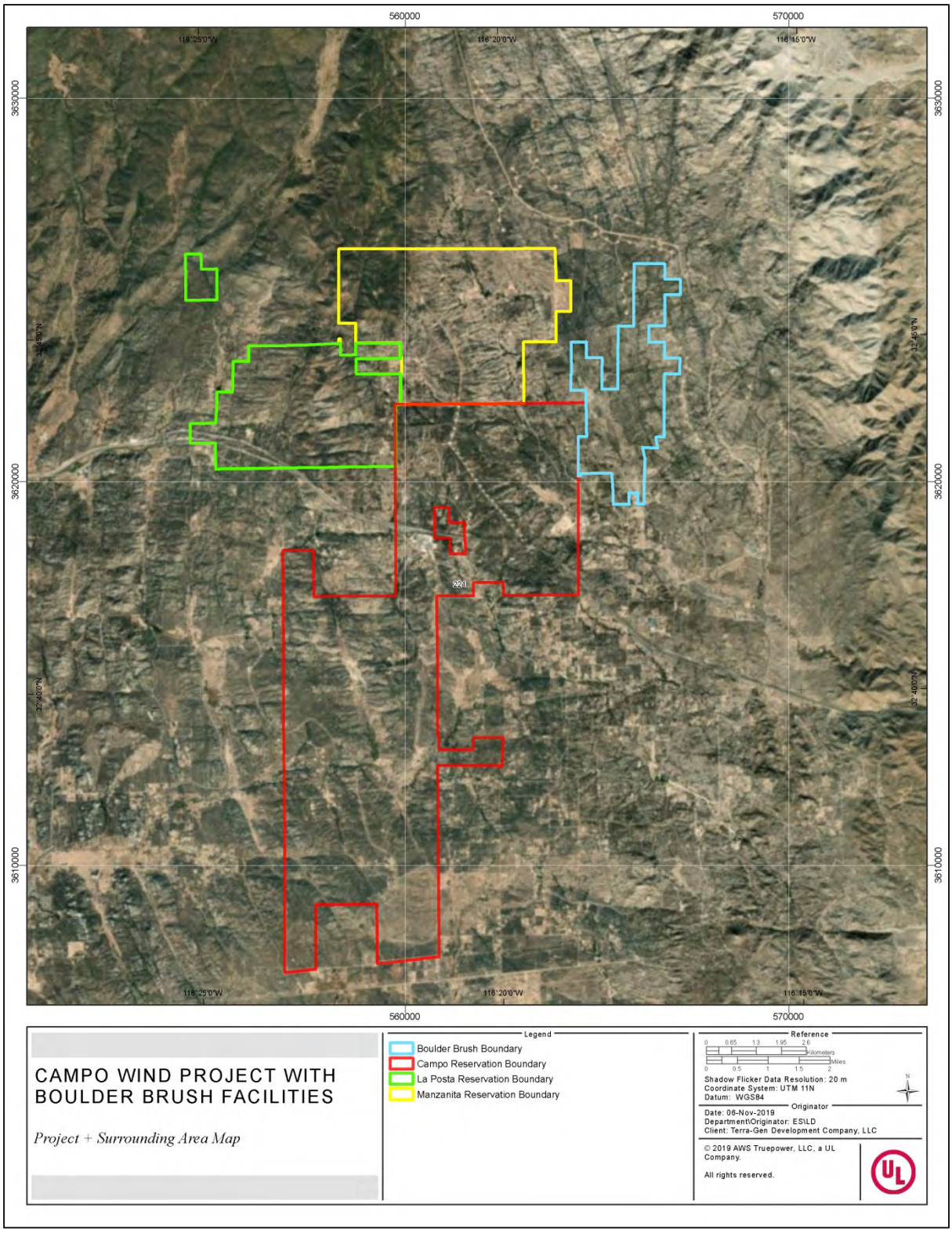

Figure 1.1. Project Location

Table 5.1: Off-Reservations Receptors Anticipated to Experience an Exceedance of either 30 minutes per day and/or 30 hours per year of Shadow Flicker

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
66	32.71850	-116.290	0:19	15:23	0:19	15:23	0:37	24:37
67	32.71801	-116.291	0:18	14:44	0:24	18:46	0:40	35:54
68	32.71793	-116.291	0:19	16:04	0:26	19:50	0:38	33:50
110	32.70506	-116.344	0:26	34:11	0:43	58:45	0:43	58:50
112	32.70490	-116.364	0:14	0:43	0:37	29:03	0:37	29:06
116	32.70475	-116.363	0:16	0:53	0:48	50:52	0:48	50:52
117	32.70451	-116.364	0:15	1:15	0:46	50:33	0:46	50:33
119	32.70420	-116.345	0:30	25:56	0:42	63:06	0:42	63:06
124	32.70328	-116.367	0:13	1:30	0:32	27:20	0:32	27:20
140	32.70073	-116.310	0:14	7:42	0:26	38:58	0:26	39:01
143	32.69974	-116.307	0:11	4:25	0:22	37:55	0:22	37:55
144	32.69974	-116.307	0:11	4:25	0:22	37:55	0:22	37:55
154	32.69798	-116.309	0:13	6:23	0:25	52:51	0:25	52:51
159	32.69702	-116.310	0:16	9:44	0:27	55:19	0:27	55:19
163	32.69572	-116.309	0:14	7:39	0:30	48:01	0:30	48:01
166	32.69234	-116.333	0:00	0:00	0:31	49:42	0:31	49:42
167	32.69232	-116.333	0:00	0:00	0:30	42:09	0:30	42:09
168	32.69231	-116.334	0:00	0:00	0:28	38:20	0:28	38:24
169	32.69216	-116.333	0:00	0:00	0:32	50:08	0:32	50:08
170	32.69212	-116.333	0:00	0:00	0:30	46:20	0:30	46:22
171	32.69211	-116.333	0:00	0:00	0:31	48:28	0:31	48:29
172	32.69212	-116.334	0:00	0:00	0:29	36:16	0:29	36:16
173	32.69209	-116.334	0:00	0:00	0:29	40:31	0:29	40:35
174	32.69207	-116.334	0:00	0:00	0:30	44:39	0:30	44:39
175	32.69203	-116.336	0:00	0:00	0:26	40:22	0:26	40:28
176	32.69202	-116.336	0:00	0:00	0:27	39:48	0:27	39:49
177	32.69195	-116.334	0:00	0:00	0:29	40:40	0:29	40:40
178	32.69192	-116.333	0:00	0:00	0:32	48:34	0:32	48:35
179	32.69187	-116.333	0:00	0:00	0:31	47:17	0:31	47:17
180	32.69183	-116.333	0:00	0:00	0:30	46:12	0:30	46:18
181	32.69182	-116.336	0:00	0:00	0:25	36:32	0:25	36:32
182	32.69175	-116.335	0:00	0:00	0:27	38:14	0:27	38:14
183	32.69174	-116.335	0:00	0:00	0:27	32:46	0:27	32:47
184	32.69172	-116.334	0:00	0:00	0:28	43:22	0:28	43:22
185	32.69170	-116.334	0:00	0:00	0:29	44:05	0:29	44:08
186	32.69164	-116.333	0:00	0:00	0:31	43:00	0:31	43:02
187	32.69161	-116.333	0:00	0:00	0:30	43:44	0:30	43:45
188	32.69160	-116.334	0:00	0:00	0:29	42:55	0:29	42:57
189	32.69158	-116.335	0:00	0:00	0:27	37:23	0:27	37:23
190	32.69149	-116.333	0:00	0:00	0:31	40:14	0:31	40:14
191	32.69146	-116.333	0:00	0:00	0:30	40:34	0:30	40:34
192	32.69146	-116.334	0:00	0:00	0:28	41:31	0:28	41:31
193	32.69144	-116.333	0:00	0:00	0:31	34:08	0:31	34:08
194	32.69144	-116.334	0:00	0:00	0:29	41:52	0:29	41:52
196	32.69131	-116.334	0:00	0:00	0:29	39:26	0:29	39:29

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
199	32.69130	-116.334	0:00	0:00	0:28	39:32	0:28	39:34
200	32.69127	-116.333	0:00	0:00	0:30	27:04	0:30	27:04
201	32.69122	-116.335	0:00	0:00	0:27	39:16	0:27	39:18
202	32.69122	-116.334	0:00	0:00	0:28	39:05	0:28	39:07
203	32.69118	-116.334	0:00	0:00	0:28	36:30	0:28	36:30
204	32.69115	-116.334	0:00	0:00	0:28	36:56	0:28	36:56
205	32.69112	-116.334	0:00	0:00	0:30	31:08	0:30	31:08
208	32.69107	-116.336	0:00	0:00	0:25	35:32	0:25	35:32
209	32.69106	-116.334	0:00	0:00	0:29	30:32	0:29	30:32
210	32.69107	-116.335	0:00	0:00	0:27	37:17	0:27	37:17
211	32.69106	-116.334	0:00	0:00	0:28	36:32	0:28	36:33
212	32.69102	-116.334	0:00	0:00	0:28	32:38	0:28	32:39
213	32.69097	-116.336	0:00	0:00	0:24	34:02	0:24	34:03
216	32.69091	-116.335	0:00	0:00	0:26	36:16	0:26	36:17
219	32.69082	-116.335	0:00	0:00	0:27	30:50	0:27	30:50
221	32.69077	-116.341	0:00	0:00	0:24	30:27	0:24	30:27
223	32.69069	-116.335	0:00	0:00	0:26	33:48	0:26	33:51
224	32.69069	-116.336	0:00	0:00	0:25	34:35	0:25	34:35
225	32.69068	-116.335	0:00	0:00	0:27	30:18	0:27	30:18
228	32.69064	-116.337	0:00	0:00	0:23	32:55	0:23	32:55
229	32.69061	-116.336	0:00	0:00	0:25	33:20	0:25	33:22
230	32.69058	-116.335	0:00	0:00	0:26	30:07	0:26	30:07
231	32.69059	-116.337	0:00	0:00	0:24	33:06	0:24	33:06
232	32.69056	-116.336	0:00	0:00	0:25	31:57	0:25	31:57
239	32.69049	-116.336	0:00	0:00	0:24	32:40	0:25	32:40
243	32.69037	-116.336	0:00	0:00	0:24	31:11	0:24	31:11
247	32.69032	-116.337	0:00	0:00	0:23	30:01	0:23	30:02
253	32.69018	-116.333	0:00	0:00	0:28	31:08	0:28	31:12
255	32.69014	-116.333	0:00	0:00	0:28	31:28	0:28	31:29
260	32.68999	-116.333	0:00	0:00	0:30	31:04	0:30	31:04
262	32.68994	-116.333	0:00	0:00	0:30	31:57	0:30	31:58
264	32.68993	-116.333	0:00	0:00	0:31	28:28	0:31	28:31
266	32.68988	-116.334	0:00	0:00	0:29	30:54	0:29	30:54
270	32.68973	-116.334	0:00	0:00	0:28	30:48	0:28	30:48
271	32.68970	-116.334	0:00	0:00	0:28	30:30	0:28	30:32
273	32.68964	-116.333	0:00	0:00	0:31	24:01	0:31	24:02
278	32.68955	-116.334	0:00	0:00	0:27	30:28	0:27	30:28
307	32.68860	-116.396	0:00	0:00	0:33	32:03	0:33	32:03
313	32.68813	-116.395	0:00	0:00	0:38	48:39	0:38	48:39
320	32.68658	-116.398	0:00	0:00	0:29	38:58	0:29	38:58
327	32.68538	-116.394	0:00	0:00	0:39	51:24	0:39	51:24
330	32.68515	-116.394	0:00	0:00	0:37	51:00	0:37	51:02
338	32.68429	-116.394	0:00	0:00	0:32	29:06	0:32	29:06
347	32.68325	-116.399	0:00	0:00	0:25	33:04	0:25	33:07
387	32.66372	-116.341	0:00	0:00	0:20	31:30	0:20	31:37
413	32.66016	-116.340	0:00	0:00	0:19	31:53	0:19	31:55
432	32.65858	-116.345	0:00	0:00	0:27	43:03	0:27	43:03

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
468	32.65378	-116.349	0:00	0:00	0:34	20:28	0:34	20:30
643	32.62720	-116.350	0:00	0:00	0:44	77:35	0:44	77:35
644	32.62713	-116.346	0:00	0:00	0:25	34:28	0:25	34:33
652	32.62585	-116.347	0:00	0:00	0:35	74:59	0:35	74:59
655	32.62556	-116.347	0:00	0:00	0:36	69:24	0:36	69:24
670	32.62230	-116.348	0:00	0:00	0:39	97:23	0:39	97:31
671	32.62223	-116.348	0:00	0:00	0:41	113:17	0:41	113:21
677	32.62179	-116.348	0:00	0:00	0:39	117:28	0:39	117:30
678	32.62005	-116.348	0:00	0:00	0:44	123:20	0:44	123:20
692	32.61525	-116.349	0:00	0:00	0:46	95:39	0:46	95:42
693	32.61512	-116.340	0:00	0:00	0:21	42:40	0:21	42:40
694	32.61507	-116.344	0:00	0:00	0:30	72:05	0:30	72:10
695	32.61497	-116.339	0:00	0:00	0:19	31:03	0:19	31:04
698	32.61472	-116.345	0:00	0:00	0:31	66:13	0:31	66:14
699	32.61430	-116.340	0:00	0:00	0:20	31:41	0:20	31:42
703	32.61211	-116.340	0:00	0:00	0:21	33:49	0:21	33:52
708	32.61028	-116.345	0:00	0:00	0:30	34:39	0:30	34:39

APPENDIX A – WTG COORDINATES

Table A.1: Project Turbines

WTG ID	WGS84		WTG ID	WGS84	
	Latitude (degrees)	Longitude (degrees)		Latitude (degrees)	Longitude (degrees)
C-1	32.62071	-116.391	C-39	32.61802	-116.356
C-2	32.61810	-116.391	C-40	32.61622	-116.356
C-3	32.61616	-116.390	C-41	32.61446	-116.356
C-4	32.61362	-116.388	C-42	32.61261	-116.356
C-5	32.61179	-116.388	C-43	32.68707	-116.369
C-6	32.60986	-116.388	C-44	32.68460	-116.368
C-7	32.60801	-116.387	C-45	32.68281	-116.368
C-8	32.63341	-116.385	C-46	32.68013	-116.366
C-9	32.63160	-116.384	C-47	32.67769	-116.371
C-10	32.62711	-116.383	C-48	32.66886	-116.353
C-11	32.62382	-116.381	C-49	32.66622	-116.357
C-12	32.62201	-116.379	C-50	32.66445	-116.358
C-13	32.68738	-116.385	C-51	32.66205	-116.358
C-14	32.68428	-116.384	C-52	32.65996	-116.358
C-15	32.68213	-116.384	C-53	32.65807	-116.358
C-16	32.68018	-116.383	C-54	32.65571	-116.359
C-17	32.67762	-116.382	C-55	32.73108	-116.318
C-18	32.67534	-116.381	C-56	32.72756	-116.317
C-19	32.67156	-116.381	C-57	32.72580	-116.315
C-20	32.66891	-116.380	C-58	32.72339	-116.314
C-21	32.66668	-116.379	C-59	32.72186	-116.314
C-22	32.66313	-116.378	C-60	32.72003	-116.312
C-23	32.66111	-116.377	C-61	32.70617	-116.356
C-24	32.65818	-116.376	C-62	32.70808	-116.356
C-25	32.65601	-116.374	C-63	32.71019	-116.356
C-26	32.65363	-116.373	C-64	32.71784	-116.352
C-27	32.64508	-116.373	C-65	32.71964	-116.353
C-28	32.64267	-116.371	C-66	32.72149	-116.354
C-29	32.64101	-116.370	C-67	32.72317	-116.354
C-30	32.63923	-116.369	C-68	32.72502	-116.355
C-31	32.63753	-116.367	C-69	32.69132	-116.322
C-32	32.63444	-116.367	C-70	32.69310	-116.322
C-33	32.63274	-116.366	C-71	32.69520	-116.322
C-34	32.63031	-116.359	C-72	32.69649	-116.323
C-35	32.62865	-116.359	C-73	32.69778	-116.323
C-36	32.62461	-116.357	C-74	32.68955	-116.386
C-37	32.62159	-116.356	C-75	32.73138	-116.322
C-38	32.61965	-116.356	C-76	32.73297	-116.324

Table A.2: Torrey Wind Project

WTG ID	WGS84	
	Latitude (degrees)	Longitude (degrees)
1	32.73273	-116.308
2	32.73081	-116.308
3	32.72851	-116.307
4	32.72334	-116.306
5	32.72137	-116.305
6	32.74498	-116.298
7	32.74320	-116.298
8	32.74128	-116.298
9	32.73842	-116.298
10	32.73666	-116.298
11	32.73305	-116.300
12	32.76168	-116.285
13	32.75761	-116.290
14	32.75504	-116.290
15	32.75193	-116.294
16	32.74952	-116.294
17	32.74721	-116.294
18	32.74509	-116.290
19	32.74328	-116.289
20	32.74143	-116.290
21	32.73952	-116.290
22	32.73729	-116.291
23	32.73434	-116.291
24	32.73183	-116.290
25	32.72982	-116.290
26	32.72802	-116.291
27	32.72555	-116.292
28	32.73081	-116.300
29	32.72877	-116.299
30	32.72695	-116.299

Table A.3: Operating Wind Projects

Project Name	WGS84		Project Name	WGS84	
	Latitude (degrees)	Longitude (degrees)		Latitude (degrees)	Longitude (degrees)
Golden Acorn	32.70150	-116.351	Tule	32.77861	-116.301
Kumeyaay	32.72879	-116.346	Tule	32.77677	-116.294
Kumeyaay	32.73391	-116.345	Tule	32.77754	-116.298
Kumeyaay	32.72036	-116.343	Tule	32.77297	-116.303
Kumeyaay	32.71529	-116.339	Tule	32.78542	-116.317
Kumeyaay	32.70240	-116.326	Tule	32.77055	-116.288
Kumeyaay	32.70349	-116.327	Tule	32.77425	-116.307
Kumeyaay	32.70470	-116.328	Tule	32.74228	-116.280
Kumeyaay	32.70590	-116.329	Tule	32.76365	-116.299
Kumeyaay	32.70709	-116.331	Tule	32.77363	-116.317
Kumeyaay	32.70820	-116.332	Tule	32.78231	-116.335
Kumeyaay	32.70929	-116.333	Tule	32.76996	-116.286
Kumeyaay	32.71049	-116.334	Tule	32.78762	-116.328
Kumeyaay	32.71170	-116.335	Tule	32.77835	-116.306
Kumeyaay	32.71280	-116.337	Tule	32.76537	-116.280
Kumeyaay	32.71400	-116.338	Tule	32.76090	-116.299
Kumeyaay	32.71659	-116.340	Tule	32.77233	-116.300
Kumeyaay	32.71780	-116.341	Tule	32.74906	-116.284
Kumeyaay	32.71910	-116.342	Tule	32.73824	-116.264
Kumeyaay	32.72169	-116.344	Tule	32.78923	-116.321
Kumeyaay	32.72290	-116.345	Tule	32.74711	-116.283
Kumeyaay	32.72400	-116.346	Tule	32.80608	-116.336
Kumeyaay	32.72529	-116.347	Tule	32.78021	-116.333
Kumeyaay	32.72710	-116.347	Tule	32.77766	-116.333
Kumeyaay	32.73060	-116.346	Tule	32.78757	-116.319
Kumeyaay	32.73229	-116.345	Tule	32.72703	-116.279
Tule	32.78356	-116.314	Tule	32.73618	-116.283
Tule	32.78981	-116.329	Tule	32.72900	-116.280
Tule	32.79379	-116.325	Tule	32.73557	-116.264
Tule	32.76740	-116.285	Tule	32.71892	-116.273
Tule	32.80805	-116.338	Tule	32.72693	-116.254
Tule	32.79168	-116.323	Tule	32.75059	-116.286
Tule	32.78543	-116.327	Tule	32.73137	-116.281
Tule	32.77533	-116.332	Tule	32.72287	-116.276
Tule	32.76739	-116.281	Tule	32.72707	-116.251
Tule	32.74523	-116.281	Tule	32.72536	-116.277
Tule	32.75835	-116.299	Tule	32.73394	-116.282
Tule	32.77217	-116.297	Tule	32.76358	-116.276
Tule	32.77135	-116.291	Tule	32.73948	-116.282
Tule	32.77161	-116.294	Tule	32.72090	-116.275
Tule	32.81021	-116.339	Tule	32.72915	-116.255
Tule	32.78455	-116.339			

APPENDIX B – SHADOW FLICKER RESULTS: TABULAR

Table B.1: Off-Reservations Receptors Anticipated Shadow Flicker

Off-Reservations Receptor ID	WGS84		Scenario 1		Scenario 2		Scenario 3	
	Latitude (degrees)	Longitude (degrees)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
66	32.71850	-116.290	0:19	15:23	0:19	15:23	0:37	24:37
67	32.71801	-116.291	0:18	14:44	0:24	18:46	0:40	35:54
68	32.71793	-116.291	0:19	16:04	0:26	19:50	0:38	33:50
69	32.71632	-116.291	0:16	4:59	0:27	8:22	0:27	20:47
70	32.71291	-116.292	0:14	3:50	0:29	11:35	0:29	11:35
71	32.71265	-116.292	0:14	4:07	0:28	14:32	0:28	14:32
72	32.71264	-116.297	0:00	0:00	0:00	0:00	0:00	0:00
73	32.71261	-116.298	0:00	0:00	0:00	0:00	0:00	0:00
74	32.71246	-116.297	0:00	0:00	0:00	0:00	0:00	0:00
75	32.71242	-116.297	0:00	0:00	0:00	0:00	0:00	0:00
76	32.71190	-116.291	0:07	2:17	0:08	2:18	0:08	2:18
77	32.71182	-116.292	0:08	2:29	0:08	2:29	0:08	2:29
78	32.71175	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
79	32.71182	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
80	32.71160	-116.303	0:00	0:00	0:00	0:00	0:00	0:00
81	32.71151	-116.292	0:08	1:50	0:08	1:50	0:08	1:50
82	32.71154	-116.310	0:11	6:50	0:11	6:50	0:11	6:50
83	32.71126	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
84	32.71115	-116.303	0:00	0:00	0:00	0:00	0:00	0:00
85	32.71102	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
86	32.71090	-116.307	0:11	2:31	0:11	2:31	0:11	2:31
87	32.71065	-116.307	0:11	3:15	0:11	3:18	0:11	3:18
88	32.70993	-116.297	0:00	0:00	0:00	0:00	0:00	0:00
89	32.70912	-116.296	0:00	0:00	0:00	0:00	0:00	0:00
90	32.70904	-116.297	0:00	0:00	0:00	0:00	0:00	0:00
91	32.70889	-116.297	0:00	0:00	0:00	0:00	0:00	0:00
92	32.70936	-116.386	0:00	0:00	0:00	0:00	0:00	0:00
93	32.70886	-116.296	0:00	0:00	0:00	0:00	0:00	0:00
94	32.70914	-116.397	0:00	0:00	0:00	0:00	0:00	0:00
95	32.70798	-116.297	0:00	0:00	0:00	0:00	0:00	0:00
96	32.70841	-116.382	0:00	0:00	0:00	0:00	0:00	0:00
97	32.70739	-116.299	0:00	0:00	0:00	0:00	0:00	0:00
98	32.70713	-116.295	0:00	0:00	0:00	0:00	0:00	0:00
99	32.70660	-116.383	0:00	0:00	0:00	0:00	0:00	0:00
100	32.70588	-116.298	0:00	0:00	0:00	0:00	0:00	0:00
101	32.70623	-116.381	0:00	0:00	0:00	0:00	0:00	0:00
102	32.70604	-116.380	0:00	0:00	0:00	0:00	0:00	0:00
103	32.70543	-116.310	0:13	9:45	0:22	18:56	0:22	18:56
104	32.70574	-116.388	0:00	0:00	0:00	0:00	0:00	0:00
105	32.70522	-116.295	0:00	0:00	0:00	0:00	0:00	0:00
106	32.70556	-116.400	0:00	0:00	0:00	0:00	0:00	0:00
107	32.70546	-116.382	0:00	0:00	0:00	0:00	0:00	0:00
108	32.70540	-116.387	0:00	0:00	0:00	0:00	0:00	0:00
109	32.70535	-116.395	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
110	32.70506	-116.344	0:26	34:11	0:43	58:45	0:43	58:50
111	32.70469	-116.300	0:00	0:00	0:00	0:00	0:00	0:00
112	32.70490	-116.364	0:14	0:43	0:37	29:03	0:37	29:06
113	32.70461	-116.310	0:13	9:14	0:27	26:55	0:27	26:58
114	32.70503	-116.400	0:00	0:00	0:00	0:00	0:00	0:00
115	32.70443	-116.301	0:00	0:00	0:00	0:00	0:00	0:00
116	32.70475	-116.363	0:16	0:53	0:48	50:52	0:48	50:52
117	32.70451	-116.364	0:15	1:15	0:46	50:33	0:46	50:33
118	32.70399	-116.295	0:00	0:00	0:00	0:00	0:00	0:00
119	32.70420	-116.345	0:30	25:56	0:42	63:06	0:42	63:06
120	32.70415	-116.388	0:00	0:00	0:00	0:00	0:00	0:00
121	32.70408	-116.390	0:00	0:00	0:00	0:00	0:00	0:00
122	32.70401	-116.388	0:00	0:00	0:00	0:00	0:00	0:00
123	32.70352	-116.295	0:00	0:00	0:00	0:00	0:00	0:00
124	32.70328	-116.367	0:13	1:30	0:32	27:20	0:32	27:20
125	32.70278	-116.302	0:00	0:00	0:15	1:50	0:16	1:51
126	32.70262	-116.302	0:00	0:00	0:00	0:00	0:00	0:00
127	32.70269	-116.364	0:16	3:04	0:16	3:01	0:16	3:01
128	32.70273	-116.392	0:00	0:00	0:00	0:00	0:00	0:00
129	32.70256	-116.365	0:15	2:52	0:26	11:21	0:26	11:22
130	32.70217	-116.299	0:00	0:00	0:00	0:00	0:00	0:00
131	32.70216	-116.303	0:00	0:00	0:18	14:39	0:18	14:40
132	32.70229	-116.365	0:15	2:48	0:15	2:48	0:15	2:48
133	32.70154	-116.296	0:00	0:00	0:00	0:00	0:00	0:00
134	32.70180	-116.365	0:14	2:06	0:15	2:06	0:15	2:06
135	32.70178	-116.387	0:00	0:00	0:00	0:00	0:00	0:00
136	32.70156	-116.384	0:00	0:00	0:00	0:00	0:00	0:00
137	32.70106	-116.299	0:00	0:00	0:00	0:00	0:00	0:00
138	32.70097	-116.298	0:00	0:00	0:00	0:00	0:00	0:00
139	32.70132	-116.368	0:10	0:56	0:14	2:05	0:14	2:06
140	32.70073	-116.310	0:14	7:42	0:26	38:58	0:26	39:01
141	32.70054	-116.368	0:10	1:27	0:10	1:25	0:10	1:26
142	32.70049	-116.368	0:09	1:17	0:09	1:16	0:09	1:16
143	32.69974	-116.307	0:11	4:25	0:22	37:55	0:22	37:55
144	32.69974	-116.307	0:11	4:25	0:22	37:55	0:22	37:55
145	32.69966	-116.302	0:00	0:00	0:16	12:22	0:16	12:22
146	32.69956	-116.300	0:00	0:00	0:00	0:00	0:00	0:00
147	32.69966	-116.377	0:00	0:00	0:00	0:00	0:00	0:00
148	32.69957	-116.382	0:00	0:00	0:00	0:00	0:00	0:00
149	32.69849	-116.305	0:00	0:00	0:19	21:55	0:19	21:58
150	32.69843	-116.302	0:00	0:00	0:16	11:29	0:16	11:30
151	32.69875	-116.365	0:15	3:43	0:15	3:44	0:15	3:44
152	32.69835	-116.303	0:00	0:00	0:17	16:43	0:17	16:43
153	32.69812	-116.300	0:00	0:00	0:00	0:00	0:00	0:00
154	32.69798	-116.309	0:13	6:23	0:25	52:51	0:25	52:51
155	32.69806	-116.363	0:18	6:39	0:18	6:39	0:18	6:39
156	32.69802	-116.379	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
157	32.69756	-116.300	0:00	0:00	0:00	0:00	0:00	0:00
158	32.69776	-116.381	0:00	0:00	0:00	0:00	0:00	0:00
159	32.69702	-116.310	0:16	9:44	0:27	55:19	0:27	55:19
160	32.69733	-116.397	0:00	0:00	0:00	0:00	0:00	0:00
161	32.69620	-116.308	0:09	3:35	0:22	25:01	0:22	25:01
162	32.69591	-116.299	0:00	0:00	0:00	0:00	0:00	0:00
163	32.69572	-116.309	0:14	7:39	0:30	48:01	0:30	48:01
164	32.69409	-116.363	0:00	0:00	0:00	0:00	0:00	0:00
165	32.69345	-116.363	0:00	0:00	0:00	0:00	0:00	0:00
166	32.69234	-116.333	0:00	0:00	0:31	49:42	0:31	49:42
167	32.69232	-116.333	0:00	0:00	0:30	42:09	0:30	42:09
168	32.69231	-116.334	0:00	0:00	0:28	38:20	0:28	38:24
169	32.69216	-116.333	0:00	0:00	0:32	50:08	0:32	50:08
170	32.69212	-116.333	0:00	0:00	0:30	46:20	0:30	46:22
171	32.69211	-116.333	0:00	0:00	0:31	48:28	0:31	48:29
172	32.69212	-116.334	0:00	0:00	0:29	36:16	0:29	36:16
173	32.69209	-116.334	0:00	0:00	0:29	40:31	0:29	40:35
174	32.69207	-116.334	0:00	0:00	0:30	44:39	0:30	44:39
175	32.69203	-116.336	0:00	0:00	0:26	40:22	0:26	40:28
176	32.69202	-116.336	0:00	0:00	0:27	39:48	0:27	39:49
177	32.69195	-116.334	0:00	0:00	0:29	40:40	0:29	40:40
178	32.69192	-116.333	0:00	0:00	0:32	48:34	0:32	48:35
179	32.69187	-116.333	0:00	0:00	0:31	47:17	0:31	47:17
180	32.69183	-116.333	0:00	0:00	0:30	46:12	0:30	46:18
181	32.69182	-116.336	0:00	0:00	0:25	36:32	0:25	36:32
182	32.69175	-116.335	0:00	0:00	0:27	38:14	0:27	38:14
183	32.69174	-116.335	0:00	0:00	0:27	32:46	0:27	32:47
184	32.69172	-116.334	0:00	0:00	0:28	43:22	0:28	43:22
185	32.69170	-116.334	0:00	0:00	0:29	44:05	0:29	44:08
186	32.69164	-116.333	0:00	0:00	0:31	43:00	0:31	43:02
187	32.69161	-116.333	0:00	0:00	0:30	43:44	0:30	43:45
188	32.69160	-116.334	0:00	0:00	0:29	42:55	0:29	42:57
189	32.69158	-116.335	0:00	0:00	0:27	37:23	0:27	37:23
190	32.69149	-116.333	0:00	0:00	0:31	40:14	0:31	40:14
191	32.69146	-116.333	0:00	0:00	0:30	40:34	0:30	40:34
192	32.69146	-116.334	0:00	0:00	0:28	41:31	0:28	41:31
193	32.69144	-116.333	0:00	0:00	0:31	34:08	0:31	34:08
194	32.69144	-116.334	0:00	0:00	0:29	41:52	0:29	41:52
195	32.69139	-116.336	0:00	0:00	0:24	28:28	0:24	28:32
196	32.69131	-116.334	0:00	0:00	0:29	39:26	0:29	39:29
197	32.69132	-116.337	0:00	0:00	0:24	29:54	0:24	29:54
198	32.69131	-116.336	0:00	0:00	0:24	28:05	0:24	28:05
199	32.69130	-116.334	0:00	0:00	0:28	39:32	0:28	39:34
200	32.69127	-116.333	0:00	0:00	0:30	27:04	0:30	27:04
201	32.69122	-116.335	0:00	0:00	0:27	39:16	0:27	39:18
202	32.69122	-116.334	0:00	0:00	0:28	39:05	0:28	39:07
203	32.69118	-116.334	0:00	0:00	0:28	36:30	0:28	36:30

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
204	32.69115	-116.334	0:00	0:00	0:28	36:56	0:28	36:56
205	32.69112	-116.334	0:00	0:00	0:30	31:08	0:30	31:08
206	32.69112	-116.333	0:00	0:00	0:29	27:38	0:29	27:41
207	32.69109	-116.333	0:00	0:00	0:29	25:09	0:29	25:09
208	32.69107	-116.336	0:00	0:00	0:25	35:32	0:25	35:32
209	32.69106	-116.334	0:00	0:00	0:29	30:32	0:29	30:32
210	32.69107	-116.335	0:00	0:00	0:27	37:17	0:27	37:17
211	32.69106	-116.334	0:00	0:00	0:28	36:32	0:28	36:33
212	32.69102	-116.334	0:00	0:00	0:28	32:38	0:28	32:39
213	32.69097	-116.336	0:00	0:00	0:24	34:02	0:24	34:03
214	32.69097	-116.337	0:00	0:00	0:23	29:28	0:23	29:38
215	32.69092	-116.333	0:00	0:00	0:28	20:09	0:28	20:11
216	32.69091	-116.335	0:00	0:00	0:26	36:16	0:26	36:17
217	32.69085	-116.334	0:00	0:00	0:27	27:15	0:27	27:18
218	32.69083	-116.333	0:00	0:00	0:27	19:23	0:27	19:23
219	32.69082	-116.335	0:00	0:00	0:27	30:50	0:27	30:50
220	32.69078	-116.334	0:00	0:00	0:27	21:16	0:27	21:17
221	32.69077	-116.341	0:00	0:00	0:24	30:27	0:24	30:27
222	32.69071	-116.333	0:00	0:00	0:26	20:26	0:26	20:28
223	32.69069	-116.335	0:00	0:00	0:26	33:48	0:26	33:51
224	32.69069	-116.336	0:00	0:00	0:25	34:35	0:25	34:35
225	32.69068	-116.335	0:00	0:00	0:27	30:18	0:27	30:18
226	32.69067	-116.334	0:00	0:00	0:27	26:32	0:27	26:33
227	32.69065	-116.333	0:00	0:00	0:24	20:16	0:24	20:16
228	32.69064	-116.337	0:00	0:00	0:23	32:55	0:23	32:55
229	32.69061	-116.336	0:00	0:00	0:25	33:20	0:25	33:22
230	32.69058	-116.335	0:00	0:00	0:26	30:07	0:26	30:07
231	32.69059	-116.337	0:00	0:00	0:24	33:06	0:24	33:06
232	32.69056	-116.336	0:00	0:00	0:25	31:57	0:25	31:57
233	32.69053	-116.333	0:00	0:00	0:25	20:29	0:25	20:30
234	32.69053	-116.333	0:00	0:00	0:24	20:58	0:24	20:59
235	32.69052	-116.333	0:00	0:00	0:25	22:29	0:25	22:29
236	32.69051	-116.334	0:00	0:00	0:26	20:16	0:26	20:18
237	32.69050	-116.333	0:00	0:00	0:25	20:19	0:25	20:19
238	32.69050	-116.334	0:00	0:00	0:27	19:23	0:27	19:24
239	32.69049	-116.336	0:00	0:00	0:24	32:40	0:25	32:40
240	32.69046	-116.335	0:00	0:00	0:26	28:26	0:26	28:26
241	32.69042	-116.334	0:00	0:00	0:26	20:16	0:26	20:16
242	32.69041	-116.334	0:00	0:00	0:27	20:11	0:27	20:14
243	32.69037	-116.336	0:00	0:00	0:24	31:11	0:24	31:11
244	32.69035	-116.336	0:00	0:00	0:25	27:08	0:25	27:11
245	32.69035	-116.336	0:00	0:00	0:25	29:08	0:25	29:10
246	32.69031	-116.333	0:00	0:00	0:26	29:24	0:26	29:28
247	32.69032	-116.337	0:00	0:00	0:23	30:01	0:23	30:02
248	32.69027	-116.334	0:00	0:00	0:25	20:48	0:25	20:48
249	32.69021	-116.334	0:00	0:00	0:26	22:48	0:26	22:48
250	32.69022	-116.336	0:00	0:00	0:26	25:33	0:26	25:33

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
251	32.69020	-116.333	0:00	0:00	0:27	28:05	0:27	28:09
252	32.69020	-116.334	0:00	0:00	0:25	20:50	0:25	20:50
253	32.69018	-116.333	0:00	0:00	0:28	31:08	0:28	31:12
254	32.69016	-116.336	0:00	0:00	0:24	26:25	0:24	26:26
255	32.69014	-116.333	0:00	0:00	0:28	31:28	0:28	31:29
256	32.69015	-116.337	0:00	0:00	0:13	7:13	0:13	7:14
257	32.69013	-116.334	0:00	0:00	0:26	22:27	0:26	22:28
258	32.69001	-116.334	0:00	0:00	0:28	29:47	0:28	29:50
259	32.69001	-116.336	0:00	0:00	0:24	23:35	0:25	23:36
260	32.68999	-116.333	0:00	0:00	0:30	31:04	0:30	31:04
261	32.68998	-116.336	0:00	0:00	0:23	24:55	0:23	24:55
262	32.68994	-116.333	0:00	0:00	0:30	31:57	0:30	31:58
263	32.68995	-116.334	0:00	0:00	0:28	26:16	0:28	26:18
264	32.68993	-116.333	0:00	0:00	0:31	28:28	0:31	28:31
265	32.68990	-116.336	0:00	0:00	0:24	20:13	0:24	20:13
266	32.68988	-116.334	0:00	0:00	0:29	30:54	0:29	30:54
267	32.68988	-116.337	0:00	0:00	0:24	23:01	0:24	23:02
268	32.68988	-116.336	0:00	0:00	0:24	21:51	0:25	21:51
269	32.68983	-116.334	0:00	0:00	0:28	29:13	0:28	29:13
270	32.68973	-116.334	0:00	0:00	0:28	30:48	0:28	30:48
271	32.68970	-116.334	0:00	0:00	0:28	30:30	0:28	30:32
272	32.68969	-116.334	0:00	0:00	0:29	29:32	0:29	29:32
273	32.68964	-116.333	0:00	0:00	0:31	24:01	0:31	24:02
274	32.68964	-116.334	0:00	0:00	0:29	29:04	0:29	29:05
275	32.68962	-116.337	0:00	0:00	0:22	18:36	0:22	18:37
276	32.68960	-116.334	0:00	0:00	0:28	29:58	0:28	29:58
277	32.68959	-116.336	0:00	0:00	0:24	18:38	0:24	18:40
278	32.68955	-116.334	0:00	0:00	0:27	30:28	0:27	30:28
279	32.68950	-116.334	0:00	0:00	0:29	27:14	0:29	27:16
280	32.68949	-116.335	0:00	0:00	0:25	29:20	0:25	29:20
281	32.68948	-116.334	0:00	0:00	0:28	29:02	0:28	29:02
282	32.68945	-116.334	0:00	0:00	0:29	27:26	0:29	27:27
283	32.68937	-116.337	0:00	0:00	0:23	17:50	0:23	17:50
284	32.68934	-116.334	0:00	0:00	0:27	28:51	0:27	28:53
285	32.68935	-116.336	0:00	0:00	0:24	20:10	0:24	20:11
286	32.68933	-116.334	0:00	0:00	0:28	28:06	0:28	28:04
287	32.68920	-116.338	0:00	0:00	0:21	21:22	0:21	21:22
288	32.68911	-116.324	0:00	0:00	0:00	0:00	0:00	0:00
289	32.68913	-116.334	0:00	0:00	0:28	25:27	0:28	25:29
290	32.68903	-116.322	0:00	0:00	0:00	0:00	0:00	0:00
291	32.68908	-116.334	0:00	0:00	0:28	25:36	0:28	25:37
292	32.68909	-116.339	0:00	0:00	0:20	23:14	0:20	23:14
293	32.68897	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
294	32.68905	-116.337	0:00	0:00	0:22	17:08	0:22	17:08
295	32.68905	-116.337	0:00	0:00	0:24	21:36	0:24	21:37
296	32.68906	-116.341	0:00	0:00	0:19	20:24	0:19	20:24
297	32.68903	-116.336	0:00	0:00	0:24	27:16	0:24	27:20

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
298	32.68902	-116.337	0:00	0:00	0:23	17:52	0:23	17:53
299	32.68902	-116.338	0:00	0:00	0:22	16:49	0:22	16:49
300	32.68899	-116.338	0:00	0:00	0:21	17:02	0:21	17:02
301	32.68898	-116.340	0:00	0:00	0:19	22:59	0:19	23:02
302	32.68886	-116.324	0:00	0:00	0:00	0:00	0:00	0:00
303	32.68887	-116.337	0:00	0:00	0:23	19:31	0:23	19:31
304	32.68867	-116.334	0:00	0:00	0:28	18:39	0:28	18:42
305	32.68858	-116.320	0:00	0:00	0:00	0:00	0:00	0:00
306	32.68844	-116.337	0:00	0:00	0:23	25:47	0:23	25:47
307	32.68860	-116.396	0:00	0:00	0:33	32:03	0:33	32:03
308	32.68820	-116.320	0:00	0:00	0:00	0:00	0:00	0:00
309	32.68822	-116.335	0:00	0:00	0:26	18:01	0:26	18:01
310	32.68818	-116.337	0:00	0:00	0:24	24:24	0:24	24:24
311	32.68810	-116.324	0:00	0:00	0:00	0:00	0:00	0:00
312	32.68807	-116.328	0:00	0:00	0:00	0:00	0:00	0:00
313	32.68813	-116.395	0:00	0:00	0:38	48:39	0:38	48:39
314	32.68763	-116.327	0:00	0:00	0:00	0:00	0:00	0:00
315	32.68731	-116.321	0:00	0:00	0:00	0:00	0:00	0:00
316	32.68727	-116.335	0:00	0:00	0:26	19:54	0:26	19:56
317	32.68717	-116.398	0:00	0:00	0:29	28:36	0:29	28:36
318	32.68669	-116.324	0:00	0:00	0:00	0:00	0:00	0:00
319	32.68648	-116.307	0:00	0:00	0:23	16:47	0:23	16:51
320	32.68658	-116.398	0:00	0:00	0:29	38:58	0:29	38:58
321	32.68607	-116.327	0:00	0:00	0:00	0:00	0:00	0:00
322	32.68595	-116.328	0:00	0:00	0:00	0:00	0:00	0:00
323	32.68551	-116.307	0:00	0:00	0:15	2:27	0:16	2:29
324	32.68539	-116.311	0:00	0:00	0:00	0:00	0:00	0:00
325	32.68533	-116.322	0:00	0:00	0:00	0:00	0:00	0:00
326	32.68506	-116.306	0:00	0:00	0:18	7:45	0:18	7:45
327	32.68538	-116.394	0:00	0:00	0:39	51:24	0:39	51:24
328	32.68489	-116.311	0:00	0:00	0:00	0:00	0:00	0:00
329	32.68489	-116.325	0:00	0:00	0:00	0:00	0:00	0:00
330	32.68515	-116.394	0:00	0:00	0:37	51:00	0:37	51:02
331	32.68464	-116.310	0:00	0:00	0:00	0:00	0:00	0:00
332	32.68463	-116.313	0:00	0:00	0:00	0:00	0:00	0:00
333	32.68450	-116.327	0:00	0:00	0:00	0:00	0:00	0:00
334	32.68446	-116.326	0:00	0:00	0:00	0:00	0:00	0:00
335	32.68423	-116.320	0:00	0:00	0:00	0:00	0:00	0:00
336	32.68421	-116.330	0:00	0:00	0:00	0:00	0:00	0:00
337	32.68417	-116.328	0:00	0:00	0:00	0:00	0:00	0:00
338	32.68429	-116.394	0:00	0:00	0:32	29:06	0:32	29:06
339	32.68368	-116.322	0:00	0:00	0:00	0:00	0:00	0:00
340	32.68406	-116.399	0:00	0:00	0:25	28:18	0:25	28:18
341	32.68359	-116.328	0:00	0:00	0:00	0:00	0:00	0:00
342	32.68350	-116.330	0:00	0:00	0:00	0:00	0:00	0:00
343	32.68354	-116.401	0:00	0:00	0:20	16:26	0:20	16:26
344	32.68299	-116.310	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
345	32.68301	-116.331	0:00	0:00	0:00	0:00	0:00	0:00
346	32.68282	-116.311	0:00	0:00	0:00	0:00	0:00	0:00
347	32.68325	-116.399	0:00	0:00	0:25	33:04	0:25	33:07
348	32.68280	-116.328	0:00	0:00	0:00	0:00	0:00	0:00
349	32.68278	-116.326	0:00	0:00	0:00	0:00	0:00	0:00
350	32.68271	-116.329	0:00	0:00	0:00	0:00	0:00	0:00
351	32.68241	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
352	32.68269	-116.399	0:00	0:00	0:23	26:03	0:23	26:03
353	32.68181	-116.327	0:00	0:00	0:00	0:00	0:00	0:00
354	32.68161	-116.318	0:00	0:00	0:00	0:00	0:00	0:00
355	32.68153	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
356	32.68138	-116.322	0:00	0:00	0:00	0:00	0:00	0:00
357	32.68128	-116.309	0:00	0:00	0:00	0:00	0:00	0:00
358	32.68103	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
359	32.68038	-116.321	0:00	0:00	0:00	0:00	0:00	0:00
360	32.68035	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
361	32.67970	-116.334	0:00	0:00	0:00	0:00	0:00	0:00
362	32.67474	-116.332	0:00	0:00	0:13	2:27	0:13	2:27
363	32.66723	-116.315	0:00	0:00	0:00	0:00	0:00	0:00
364	32.66668	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
365	32.66640	-116.330	0:00	0:00	0:00	0:00	0:00	0:00
366	32.66627	-116.332	0:00	0:00	0:13	2:48	0:13	2:48
367	32.66554	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
368	32.66543	-116.281	0:00	0:00	0:00	0:00	0:00	0:00
369	32.66563	-116.325	0:00	0:00	0:00	0:00	0:00	0:00
370	32.66562	-116.325	0:00	0:00	0:00	0:00	0:00	0:00
371	32.66506	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
372	32.66562	-116.412	0:00	0:00	0:00	0:00	0:00	0:00
373	32.66513	-116.325	0:00	0:00	0:00	0:00	0:00	0:00
374	32.66505	-116.325	0:00	0:00	0:00	0:00	0:00	0:00
375	32.66502	-116.326	0:00	0:00	0:00	0:00	0:00	0:00
376	32.66491	-116.305	0:00	0:00	0:00	0:00	0:00	0:00
377	32.66440	-116.281	0:00	0:00	0:00	0:00	0:00	0:00
378	32.66493	-116.411	0:00	0:00	0:00	0:00	0:00	0:00
379	32.66395	-116.284	0:00	0:00	0:00	0:00	0:00	0:00
380	32.66412	-116.326	0:00	0:00	0:00	0:00	0:00	0:00
381	32.66438	-116.411	0:00	0:00	0:00	0:00	0:00	0:00
382	32.66372	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
383	32.66374	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
384	32.66345	-116.283	0:00	0:00	0:00	0:00	0:00	0:00
385	32.66369	-116.329	0:00	0:00	0:00	0:00	0:00	0:00
386	32.66357	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
387	32.66372	-116.341	0:00	0:00	0:20	31:30	0:20	31:37
388	32.66407	-116.411	0:00	0:00	0:00	0:00	0:00	0:00
389	32.66334	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
390	32.66334	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
391	32.66316	-116.312	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
392	32.66292	-116.280	0:00	0:00	0:00	0:00	0:00	0:00
393	32.66306	-116.327	0:00	0:00	0:00	0:00	0:00	0:00
394	32.66237	-116.278	0:00	0:00	0:00	0:00	0:00	0:00
395	32.66220	-116.281	0:00	0:00	0:00	0:00	0:00	0:00
396	32.66218	-116.287	0:00	0:00	0:00	0:00	0:00	0:00
397	32.66204	-116.279	0:00	0:00	0:00	0:00	0:00	0:00
398	32.66193	-116.279	0:00	0:00	0:00	0:00	0:00	0:00
399	32.66165	-116.305	0:00	0:00	0:00	0:00	0:00	0:00
400	32.66133	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
401	32.66129	-116.331	0:00	0:00	0:00	0:00	0:00	0:00
402	32.66125	-116.328	0:00	0:00	0:00	0:00	0:00	0:00
403	32.66105	-116.295	0:00	0:00	0:00	0:00	0:00	0:00
404	32.66103	-116.297	0:00	0:00	0:00	0:00	0:00	0:00
405	32.66115	-116.331	0:00	0:00	0:00	0:00	0:00	0:00
406	32.66079	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
407	32.66101	-116.332	0:00	0:00	0:00	0:00	0:00	0:00
408	32.66054	-116.298	0:00	0:00	0:00	0:00	0:00	0:00
409	32.66030	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
410	32.66011	-116.277	0:00	0:00	0:00	0:00	0:00	0:00
411	32.65993	-116.279	0:00	0:00	0:00	0:00	0:00	0:00
412	32.66002	-116.295	0:00	0:00	0:00	0:00	0:00	0:00
413	32.66016	-116.340	0:00	0:00	0:19	31:53	0:19	31:55
414	32.65979	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
415	32.65947	-116.280	0:00	0:00	0:00	0:00	0:00	0:00
416	32.65946	-116.288	0:00	0:00	0:00	0:00	0:00	0:00
417	32.65943	-116.286	0:00	0:00	0:00	0:00	0:00	0:00
418	32.65943	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
419	32.65935	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
420	32.65962	-116.331	0:00	0:00	0:00	0:00	0:00	0:00
421	32.65961	-116.329	0:00	0:00	0:00	0:00	0:00	0:00
422	32.65938	-116.299	0:00	0:00	0:00	0:00	0:00	0:00
423	32.65952	-116.330	0:00	0:00	0:00	0:00	0:00	0:00
424	32.65906	-116.285	0:00	0:00	0:00	0:00	0:00	0:00
425	32.65924	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
426	32.65904	-116.285	0:00	0:00	0:00	0:00	0:00	0:00
427	32.65886	-116.285	0:00	0:00	0:00	0:00	0:00	0:00
428	32.65859	-116.285	0:00	0:00	0:00	0:00	0:00	0:00
429	32.65857	-116.286	0:00	0:00	0:00	0:00	0:00	0:00
430	32.65876	-116.330	0:00	0:00	0:00	0:00	0:00	0:00
431	32.65849	-116.318	0:00	0:00	0:00	0:00	0:00	0:00
432	32.65858	-116.345	0:00	0:00	0:27	43:03	0:27	43:03
433	32.65820	-116.339	0:00	0:00	0:13	12:33	0:13	12:33
434	32.65794	-116.292	0:00	0:00	0:00	0:00	0:00	0:00
435	32.65789	-116.291	0:00	0:00	0:00	0:00	0:00	0:00
436	32.65782	-116.301	0:00	0:00	0:00	0:00	0:00	0:00
437	32.65761	-116.291	0:00	0:00	0:00	0:00	0:00	0:00
438	32.65757	-116.295	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
439	32.65756	-116.297	0:00	0:00	0:00	0:00	0:00	0:00
440	32.65750	-116.292	0:00	0:00	0:00	0:00	0:00	0:00
441	32.65733	-116.302	0:00	0:00	0:00	0:00	0:00	0:00
442	32.65713	-116.303	0:00	0:00	0:00	0:00	0:00	0:00
443	32.65720	-116.326	0:00	0:00	0:00	0:00	0:00	0:00
444	32.65704	-116.331	0:00	0:00	0:00	0:00	0:00	0:00
445	32.65686	-116.302	0:00	0:00	0:00	0:00	0:00	0:00
446	32.65679	-116.293	0:00	0:00	0:00	0:00	0:00	0:00
447	32.65675	-116.292	0:00	0:00	0:00	0:00	0:00	0:00
448	32.65670	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
449	32.65626	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
450	32.65619	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
451	32.65607	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
452	32.65628	-116.330	0:00	0:00	0:00	0:00	0:00	0:00
453	32.65605	-116.300	0:00	0:00	0:00	0:00	0:00	0:00
454	32.65610	-116.321	0:00	0:00	0:00	0:00	0:00	0:00
455	32.65587	-116.301	0:00	0:00	0:00	0:00	0:00	0:00
456	32.65566	-116.290	0:00	0:00	0:00	0:00	0:00	0:00
457	32.65567	-116.300	0:00	0:00	0:00	0:00	0:00	0:00
458	32.65567	-116.300	0:00	0:00	0:00	0:00	0:00	0:00
459	32.65562	-116.291	0:00	0:00	0:00	0:00	0:00	0:00
460	32.65554	-116.299	0:00	0:00	0:00	0:00	0:00	0:00
461	32.65577	-116.395	0:00	0:00	0:18	10:24	0:18	10:28
462	32.65527	-116.299	0:00	0:00	0:00	0:00	0:00	0:00
463	32.65516	-116.287	0:00	0:00	0:00	0:00	0:00	0:00
464	32.65517	-116.299	0:00	0:00	0:00	0:00	0:00	0:00
465	32.65517	-116.299	0:00	0:00	0:00	0:00	0:00	0:00
466	32.65509	-116.291	0:00	0:00	0:00	0:00	0:00	0:00
467	32.65504	-116.294	0:00	0:00	0:00	0:00	0:00	0:00
468	32.65378	-116.349	0:00	0:00	0:34	20:28	0:34	20:30
469	32.65211	-116.328	0:00	0:00	0:00	0:00	0:00	0:00
470	32.65005	-116.330	0:00	0:00	0:00	0:00	0:00	0:00
471	32.64844	-116.268	0:00	0:00	0:00	0:00	0:00	0:00
472	32.64844	-116.271	0:00	0:00	0:00	0:00	0:00	0:00
473	32.64839	-116.272	0:00	0:00	0:00	0:00	0:00	0:00
474	32.64841	-116.320	0:00	0:00	0:00	0:00	0:00	0:00
475	32.64828	-116.350	0:00	0:00	0:13	10:38	0:14	10:41
476	32.64810	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
477	32.64788	-116.331	0:00	0:00	0:00	0:00	0:00	0:00
478	32.64819	-116.396	0:00	0:00	0:00	0:00	0:00	0:00
479	32.64752	-116.271	0:00	0:00	0:00	0:00	0:00	0:00
480	32.64783	-116.330	0:00	0:00	0:00	0:00	0:00	0:00
481	32.64756	-116.320	0:00	0:00	0:00	0:00	0:00	0:00
482	32.64751	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
483	32.64737	-116.318	0:00	0:00	0:00	0:00	0:00	0:00
484	32.64685	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
485	32.64701	-116.318	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
486	32.64676	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
487	32.64703	-116.343	0:00	0:00	0:00	0:00	0:00	0:00
488	32.64689	-116.321	0:00	0:00	0:00	0:00	0:00	0:00
489	32.64673	-116.333	0:00	0:00	0:00	0:00	0:00	0:00
490	32.64664	-116.318	0:00	0:00	0:00	0:00	0:00	0:00
491	32.64678	-116.346	0:00	0:00	0:00	0:00	0:00	0:00
492	32.64636	-116.288	0:00	0:00	0:00	0:00	0:00	0:00
493	32.64656	-116.327	0:00	0:00	0:00	0:00	0:00	0:00
494	32.64632	-116.289	0:00	0:00	0:00	0:00	0:00	0:00
495	32.64616	-116.265	0:00	0:00	0:00	0:00	0:00	0:00
496	32.64616	-116.272	0:00	0:00	0:00	0:00	0:00	0:00
497	32.64651	-116.349	0:00	0:00	0:15	10:38	0:15	10:39
498	32.64591	-116.270	0:00	0:00	0:00	0:00	0:00	0:00
499	32.64626	-116.333	0:00	0:00	0:00	0:00	0:00	0:00
500	32.64624	-116.342	0:00	0:00	0:00	0:00	0:00	0:00
501	32.64621	-116.345	0:00	0:00	0:00	0:00	0:00	0:00
502	32.64611	-116.347	0:00	0:00	0:00	0:00	0:00	0:00
503	32.64597	-116.345	0:00	0:00	0:00	0:00	0:00	0:00
504	32.64615	-116.396	0:00	0:00	0:00	0:00	0:00	0:00
505	32.64606	-116.401	0:00	0:00	0:00	0:00	0:00	0:00
506	32.64571	-116.348	0:00	0:00	0:00	0:00	0:00	0:00
507	32.64510	-116.270	0:00	0:00	0:00	0:00	0:00	0:00
508	32.64506	-116.287	0:00	0:00	0:00	0:00	0:00	0:00
509	32.64488	-116.273	0:00	0:00	0:00	0:00	0:00	0:00
510	32.64496	-116.337	0:00	0:00	0:00	0:00	0:00	0:00
511	32.64455	-116.265	0:00	0:00	0:00	0:00	0:00	0:00
512	32.64447	-116.294	0:00	0:00	0:00	0:00	0:00	0:00
513	32.64447	-116.294	0:00	0:00	0:00	0:00	0:00	0:00
514	32.64459	-116.316	0:00	0:00	0:00	0:00	0:00	0:00
515	32.64426	-116.272	0:00	0:00	0:00	0:00	0:00	0:00
516	32.64461	-116.348	0:00	0:00	0:12	3:25	0:12	3:25
517	32.64450	-116.341	0:00	0:00	0:00	0:00	0:00	0:00
518	32.64443	-116.335	0:00	0:00	0:00	0:00	0:00	0:00
519	32.64402	-116.270	0:00	0:00	0:00	0:00	0:00	0:00
520	32.64457	-116.396	0:00	0:00	0:00	0:00	0:00	0:00
521	32.64381	-116.264	0:00	0:00	0:00	0:00	0:00	0:00
522	32.64412	-116.350	0:00	0:00	0:13	6:28	0:13	6:31
523	32.64326	-116.342	0:00	0:00	0:00	0:00	0:00	0:00
524	32.64253	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
525	32.64231	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
526	32.64212	-116.263	0:00	0:00	0:00	0:00	0:00	0:00
527	32.64208	-116.271	0:00	0:00	0:00	0:00	0:00	0:00
528	32.64202	-116.265	0:00	0:00	0:00	0:00	0:00	0:00
529	32.64202	-116.267	0:00	0:00	0:00	0:00	0:00	0:00
530	32.64191	-116.350	0:00	0:00	0:13	9:52	0:13	9:52
531	32.64135	-116.287	0:00	0:00	0:00	0:00	0:00	0:00
532	32.64091	-116.335	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
533	32.64087	-116.340	0:00	0:00	0:00	0:00	0:00	0:00
534	32.64074	-116.318	0:00	0:00	0:00	0:00	0:00	0:00
535	32.64075	-116.330	0:00	0:00	0:00	0:00	0:00	0:00
536	32.64021	-116.279	0:00	0:00	0:00	0:00	0:00	0:00
537	32.64019	-116.279	0:00	0:00	0:00	0:00	0:00	0:00
538	32.64024	-116.347	0:00	0:00	0:08	4:02	0:08	4:02
539	32.63986	-116.279	0:00	0:00	0:00	0:00	0:00	0:00
540	32.63981	-116.316	0:00	0:00	0:00	0:00	0:00	0:00
541	32.63990	-116.347	0:00	0:00	0:07	3:11	0:07	3:12
542	32.63969	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
543	32.63956	-116.316	0:00	0:00	0:00	0:00	0:00	0:00
544	32.63925	-116.320	0:00	0:00	0:00	0:00	0:00	0:00
545	32.63911	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
546	32.63911	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
547	32.63894	-116.318	0:00	0:00	0:00	0:00	0:00	0:00
548	32.63890	-116.316	0:00	0:00	0:00	0:00	0:00	0:00
549	32.63880	-116.316	0:00	0:00	0:00	0:00	0:00	0:00
550	32.63875	-116.313	0:00	0:00	0:00	0:00	0:00	0:00
551	32.63875	-116.316	0:00	0:00	0:00	0:00	0:00	0:00
552	32.63881	-116.333	0:00	0:00	0:00	0:00	0:00	0:00
553	32.63873	-116.320	0:00	0:00	0:00	0:00	0:00	0:00
554	32.63830	-116.349	0:00	0:00	0:11	5:18	0:11	5:20
555	32.63765	-116.271	0:00	0:00	0:00	0:00	0:00	0:00
556	32.63785	-116.313	0:00	0:00	0:00	0:00	0:00	0:00
557	32.63762	-116.283	0:00	0:00	0:00	0:00	0:00	0:00
558	32.63787	-116.345	0:00	0:00	0:03	0:27	0:03	0:27
559	32.63768	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
560	32.63766	-116.313	0:00	0:00	0:00	0:00	0:00	0:00
561	32.63757	-116.315	0:00	0:00	0:00	0:00	0:00	0:00
562	32.63736	-116.284	0:00	0:00	0:00	0:00	0:00	0:00
563	32.63718	-116.271	0:00	0:00	0:00	0:00	0:00	0:00
564	32.63709	-116.313	0:00	0:00	0:00	0:00	0:00	0:00
565	32.63680	-116.271	0:00	0:00	0:00	0:00	0:00	0:00
566	32.63704	-116.346	0:00	0:00	0:16	7:46	0:16	7:47
567	32.63654	-116.306	0:00	0:00	0:00	0:00	0:00	0:00
568	32.63643	-116.305	0:00	0:00	0:00	0:00	0:00	0:00
569	32.63640	-116.305	0:00	0:00	0:00	0:00	0:00	0:00
570	32.63653	-116.350	0:00	0:00	0:12	7:11	0:12	7:13
571	32.63625	-116.348	0:00	0:00	0:24	13:26	0:24	13:29
572	32.63588	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
573	32.63592	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
574	32.63600	-116.349	0:00	0:00	0:23	13:29	0:23	13:32
575	32.63598	-116.347	0:00	0:00	0:22	17:15	0:22	17:19
576	32.63545	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
577	32.63518	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
578	32.63498	-116.280	0:00	0:00	0:00	0:00	0:00	0:00
579	32.63528	-116.347	0:00	0:00	0:22	14:53	0:22	14:56

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
580	32.63485	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
581	32.63477	-116.273	0:00	0:00	0:00	0:00	0:00	0:00
582	32.63477	-116.277	0:00	0:00	0:00	0:00	0:00	0:00
583	32.63454	-116.277	0:00	0:00	0:00	0:00	0:00	0:00
584	32.63452	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
585	32.63442	-116.277	0:00	0:00	0:00	0:00	0:00	0:00
586	32.63439	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
587	32.63418	-116.277	0:00	0:00	0:00	0:00	0:00	0:00
588	32.63431	-116.311	0:00	0:00	0:00	0:00	0:00	0:00
589	32.63407	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
590	32.63407	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
591	32.63404	-116.276	0:00	0:00	0:00	0:00	0:00	0:00
592	32.63414	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
593	32.63402	-116.342	0:00	0:00	0:06	0:49	0:06	0:49
594	32.63364	-116.281	0:00	0:00	0:00	0:00	0:00	0:00
595	32.63338	-116.278	0:00	0:00	0:00	0:00	0:00	0:00
596	32.63335	-116.281	0:00	0:00	0:00	0:00	0:00	0:00
597	32.63349	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
598	32.63324	-116.279	0:00	0:00	0:00	0:00	0:00	0:00
599	32.63346	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
600	32.63311	-116.266	0:00	0:00	0:00	0:00	0:00	0:00
601	32.63308	-116.314	0:00	0:00	0:00	0:00	0:00	0:00
602	32.63308	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
603	32.63285	-116.318	0:00	0:00	0:00	0:00	0:00	0:00
604	32.63234	-116.305	0:00	0:00	0:00	0:00	0:00	0:00
605	32.63230	-116.317	0:00	0:00	0:00	0:00	0:00	0:00
606	32.63190	-116.339	0:00	0:00	0:03	0:47	0:03	0:49
607	32.63179	-116.342	0:00	0:00	0:05	2:36	0:05	2:37
608	32.63115	-116.269	0:00	0:00	0:00	0:00	0:00	0:00
609	32.63133	-116.310	0:00	0:00	0:00	0:00	0:00	0:00
610	32.63097	-116.270	0:00	0:00	0:00	0:00	0:00	0:00
611	32.63040	-116.301	0:00	0:00	0:00	0:00	0:00	0:00
612	32.63016	-116.277	0:00	0:00	0:00	0:00	0:00	0:00
613	32.63011	-116.277	0:00	0:00	0:00	0:00	0:00	0:00
614	32.63016	-116.301	0:00	0:00	0:00	0:00	0:00	0:00
615	32.63071	-116.416	0:00	0:00	0:00	0:00	0:00	0:00
616	32.63007	-116.301	0:00	0:00	0:00	0:00	0:00	0:00
617	32.63062	-116.418	0:00	0:00	0:00	0:00	0:00	0:00
618	32.62970	-116.277	0:00	0:00	0:00	0:00	0:00	0:00
619	32.63038	-116.414	0:00	0:00	0:00	0:00	0:00	0:00
620	32.62957	-116.275	0:00	0:00	0:00	0:00	0:00	0:00
621	32.62968	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
622	32.63002	-116.412	0:00	0:00	0:00	0:00	0:00	0:00
623	32.62926	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
624	32.62968	-116.409	0:00	0:00	0:15	4:02	0:15	4:03
625	32.62966	-116.412	0:00	0:00	0:00	0:00	0:00	0:00
626	32.62895	-116.319	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
627	32.62884	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
628	32.62881	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
629	32.62936	-116.417	0:00	0:00	0:00	0:00	0:00	0:00
630	32.62882	-116.343	0:00	0:00	0:13	6:28	0:13	6:29
631	32.62905	-116.411	0:00	0:00	0:00	0:00	0:00	0:00
632	32.62842	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
633	32.62894	-116.414	0:00	0:00	0:00	0:00	0:00	0:00
634	32.62844	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
635	32.62882	-116.416	0:00	0:00	0:00	0:00	0:00	0:00
636	32.62824	-116.319	0:00	0:00	0:00	0:00	0:00	0:00
637	32.62854	-116.409	0:00	0:00	0:16	6:43	0:16	6:43
638	32.62788	-116.300	0:00	0:00	0:00	0:00	0:00	0:00
639	32.62766	-116.300	0:00	0:00	0:00	0:00	0:00	0:00
640	32.62814	-116.410	0:00	0:00	0:15	2:11	0:15	2:11
641	32.62755	-116.409	0:00	0:00	0:17	4:55	0:17	4:56
642	32.62752	-116.413	0:00	0:00	0:00	0:00	0:00	0:00
643	32.62720	-116.350	0:00	0:00	0:44	77:35	0:44	77:35
644	32.62713	-116.346	0:00	0:00	0:25	34:28	0:25	34:33
645	32.62731	-116.416	0:00	0:00	0:00	0:00	0:00	0:00
646	32.62722	-116.417	0:00	0:00	0:00	0:00	0:00	0:00
647	32.62690	-116.415	0:00	0:00	0:00	0:00	0:00	0:00
648	32.62664	-116.418	0:00	0:00	0:00	0:00	0:00	0:00
649	32.62620	-116.337	0:00	0:00	0:09	7:08	0:09	7:11
650	32.62654	-116.411	0:00	0:00	0:17	0:49	0:17	0:49
651	32.62601	-116.337	0:00	0:00	0:09	5:49	0:09	5:50
652	32.62585	-116.347	0:00	0:00	0:35	74:59	0:35	74:59
653	32.62579	-116.338	0:00	0:00	0:10	7:45	0:10	7:49
654	32.62608	-116.412	0:00	0:00	0:01	0:01	0:01	0:01
655	32.62556	-116.347	0:00	0:00	0:36	69:24	0:36	69:24
656	32.62586	-116.414	0:00	0:00	0:00	0:00	0:00	0:00
657	32.62578	-116.407	0:00	0:00	0:18	1:33	0:18	1:33
658	32.62535	-116.410	0:00	0:00	0:15	2:40	0:15	2:40
659	32.62501	-116.419	0:00	0:00	0:00	0:00	0:00	0:00
660	32.62498	-116.415	0:00	0:00	0:00	0:00	0:00	0:00
661	32.62476	-116.409	0:00	0:00	0:14	4:22	0:14	4:26
662	32.62474	-116.411	0:00	0:00	0:12	1:49	0:12	1:49
663	32.62460	-116.415	0:00	0:00	0:00	0:00	0:00	0:00
664	32.62378	-116.311	0:00	0:00	0:00	0:00	0:00	0:00
665	32.62373	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
666	32.62407	-116.416	0:00	0:00	0:00	0:00	0:00	0:00
667	32.62347	-116.413	0:00	0:00	0:00	0:00	0:00	0:00
668	32.62332	-116.416	0:00	0:00	0:00	0:00	0:00	0:00
669	32.62323	-116.415	0:00	0:00	0:00	0:00	0:00	0:00
670	32.62230	-116.348	0:00	0:00	0:39	97:23	0:39	97:31
671	32.62223	-116.348	0:00	0:00	0:41	113:17	0:41	113:21
672	32.62255	-116.416	0:00	0:00	0:00	0:00	0:00	0:00
673	32.62207	-116.338	0:00	0:00	0:14	15:27	0:14	15:31

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
674	32.62240	-116.419	0:00	0:00	0:00	0:00	0:00	0:00
675	32.62238	-116.418	0:00	0:00	0:00	0:00	0:00	0:00
676	32.62213	-116.413	0:00	0:00	0:00	0:00	0:00	0:00
677	32.62179	-116.348	0:00	0:00	0:39	117:28	0:39	117:30
678	32.62005	-116.348	0:00	0:00	0:44	123:20	0:44	123:20
679	32.61946	-116.418	0:00	0:00	0:00	0:00	0:00	0:00
680	32.61856	-116.420	0:00	0:00	0:00	0:00	0:00	0:00
681	32.61774	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
682	32.61774	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
683	32.61828	-116.419	0:00	0:00	0:00	0:00	0:00	0:00
684	32.61765	-116.304	0:00	0:00	0:00	0:00	0:00	0:00
685	32.61671	-116.310	0:00	0:00	0:00	0:00	0:00	0:00
686	32.61667	-116.310	0:00	0:00	0:00	0:00	0:00	0:00
687	32.61712	-116.417	0:00	0:00	0:00	0:00	0:00	0:00
688	32.61702	-116.418	0:00	0:00	0:00	0:00	0:00	0:00
689	32.61646	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
690	32.61634	-116.311	0:00	0:00	0:00	0:00	0:00	0:00
691	32.61618	-116.311	0:00	0:00	0:00	0:00	0:00	0:00
692	32.61525	-116.349	0:00	0:00	0:46	95:39	0:46	95:42
693	32.61512	-116.340	0:00	0:00	0:21	42:40	0:21	42:40
694	32.61507	-116.344	0:00	0:00	0:30	72:05	0:30	72:10
695	32.61497	-116.339	0:00	0:00	0:19	31:03	0:19	31:04
696	32.61492	-116.335	0:00	0:00	0:12	8:14	0:12	8:14
697	32.61494	-116.337	0:00	0:00	0:16	22:30	0:16	22:32
698	32.61472	-116.345	0:00	0:00	0:31	66:13	0:31	66:14
699	32.61430	-116.340	0:00	0:00	0:20	31:41	0:20	31:42
700	32.61401	-116.314	0:00	0:00	0:00	0:00	0:00	0:00
701	32.61343	-116.334	0:00	0:00	0:10	6:18	0:10	6:18
702	32.61224	-116.334	0:00	0:00	0:10	1:33	0:10	1:33
703	32.61211	-116.340	0:00	0:00	0:21	33:49	0:21	33:52
704	32.61113	-116.334	0:00	0:00	0:00	0:00	0:00	0:00
705	32.61102	-116.339	0:00	0:00	0:19	23:17	0:19	23:17
706	32.61060	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
707	32.61033	-116.337	0:00	0:00	0:14	18:06	0:14	18:06
708	32.61028	-116.345	0:00	0:00	0:30	34:39	0:30	34:39
709	32.61009	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
710	32.60983	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
711	32.60948	-116.312	0:00	0:00	0:00	0:00	0:00	0:00
712	32.60913	-116.349	0:00	0:00	0:00	0:00	0:00	0:00
713	32.60906	-116.344	0:00	0:00	0:27	16:13	0:27	16:14
714	32.60877	-116.334	0:00	0:00	0:00	0:00	0:00	0:00
715	32.60877	-116.350	0:00	0:00	0:00	0:00	0:00	0:00
716	32.60833	-116.334	0:00	0:00	0:00	0:00	0:00	0:00
717	32.60792	-116.310	0:00	0:00	0:00	0:00	0:00	0:00
718	32.60789	-116.334	0:00	0:00	0:00	0:00	0:00	0:00
719	32.60786	-116.351	0:00	0:00	0:00	0:00	0:00	0:00
720	32.60764	-116.311	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
721	32.60736	-116.334	0:00	0:00	0:00	0:00	0:00	0:00
722	32.60688	-116.351	0:00	0:00	0:00	0:00	0:00	0:00
723	32.60669	-116.344	0:00	0:00	0:00	0:00	0:00	0:00
724	32.60623	-116.336	0:00	0:00	0:00	0:00	0:00	0:00
725	32.60605	-116.349	0:00	0:00	0:00	0:00	0:00	0:00
726	32.60546	-116.343	0:00	0:00	0:00	0:00	0:00	0:00
727	32.60488	-116.334	0:00	0:00	0:00	0:00	0:00	0:00
728	32.60487	-116.371	0:00	0:00	0:21	19:15	0:21	19:15
729	32.60407	-116.347	0:00	0:00	0:00	0:00	0:00	0:00
730	32.60376	-116.349	0:00	0:00	0:00	0:00	0:00	0:00
731	32.60338	-116.359	0:00	0:00	0:00	0:00	0:00	0:00
732	32.60301	-116.355	0:00	0:00	0:00	0:00	0:00	0:00
733	32.60262	-116.346	0:00	0:00	0:00	0:00	0:00	0:00
734	32.60243	-116.352	0:00	0:00	0:00	0:00	0:00	0:00
735	32.60239	-116.370	0:00	0:00	0:18	15:42	0:18	15:42
736	32.60171	-116.347	0:00	0:00	0:00	0:00	0:00	0:00
737	32.60148	-116.352	0:00	0:00	0:00	0:00	0:00	0:00
738	32.60126	-116.355	0:00	0:00	0:00	0:00	0:00	0:00
739	32.60112	-116.353	0:00	0:00	0:00	0:00	0:00	0:00
740	32.60126	-116.384	0:00	0:00	0:00	0:00	0:00	0:00
741	32.60122	-116.381	0:00	0:00	0:00	0:00	0:00	0:00
742	32.60108	-116.355	0:00	0:00	0:00	0:00	0:00	0:00
743	32.60104	-116.386	0:00	0:00	0:00	0:00	0:00	0:00
744	32.60089	-116.380	0:00	0:00	0:00	0:00	0:00	0:00
745	32.60090	-116.381	0:00	0:00	0:00	0:00	0:00	0:00
746	32.60067	-116.379	0:00	0:00	0:00	0:00	0:00	0:00
747	32.60065	-116.380	0:00	0:00	0:00	0:00	0:00	0:00
748	32.60055	-116.359	0:00	0:00	0:00	0:00	0:00	0:00
749	32.60042	-116.379	0:00	0:00	0:00	0:00	0:00	0:00
750	32.59987	-116.382	0:00	0:00	0:00	0:00	0:00	0:00
751	32.59952	-116.358	0:00	0:00	0:00	0:00	0:00	0:00
752	32.59948	-116.382	0:00	0:00	0:00	0:00	0:00	0:00
753	32.59891	-116.390	0:00	0:00	0:00	0:00	0:00	0:00
754	32.59866	-116.387	0:00	0:00	0:00	0:00	0:00	0:00
755	32.60736	-116.334	0:00	0:00	0:00	0:00	0:00	0:00
756	32.60688	-116.351	0:00	0:00	0:00	0:00	0:00	0:00
757	32.60669	-116.344	0:00	0:00	0:00	0:00	0:00	0:00
745	32.60623	-116.336	0:00	0:00	0:00	0:00	0:00	0:00
746	32.60605	-116.349	0:00	0:00	0:00	0:00	0:00	0:00
747	32.60546	-116.343	0:00	0:00	0:00	0:00	0:00	0:00
748	32.60488	-116.334	0:00	0:00	0:00	0:00	0:00	0:00
749	32.60487	-116.371	0:00	0:00	0:00	0:00	0:00	0:00
750	32.60407	-116.347	0:00	0:00	0:00	0:00	0:00	0:00
751	32.60376	-116.349	0:00	0:00	0:00	0:00	0:00	0:00
752	32.60338	-116.359	0:00	0:00	0:00	0:00	0:00	0:00
753	32.60301	-116.355	0:00	0:00	0:00	0:00	0:00	0:00
754	32.60262	-116.346	0:00	0:00	0:00	0:00	0:00	0:00

			Scenario 1		Scenario 2		Scenario 3	
Off-Reservations Receptor ID	WGS84		Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)	Maximum Shadow Flicker in Any One Day (Hr:Min)	Total Shadow Flicker Hours Per Year (Hr:Min)
	Latitude (degrees)	Longitude (degrees)						
755	32.59801	-116.387	0:00	0:00	0:00	0:00	0:00	0:00
756	32.59799	-116.390	0:00	0:00	0:00	0:00	0:00	0:00
757	32.59724	-116.382	0:00	0:00	0:00	0:00	0:00	0:00

APPENDIX C – SHADOW FLICKER RESULTS: GRAPHICAL

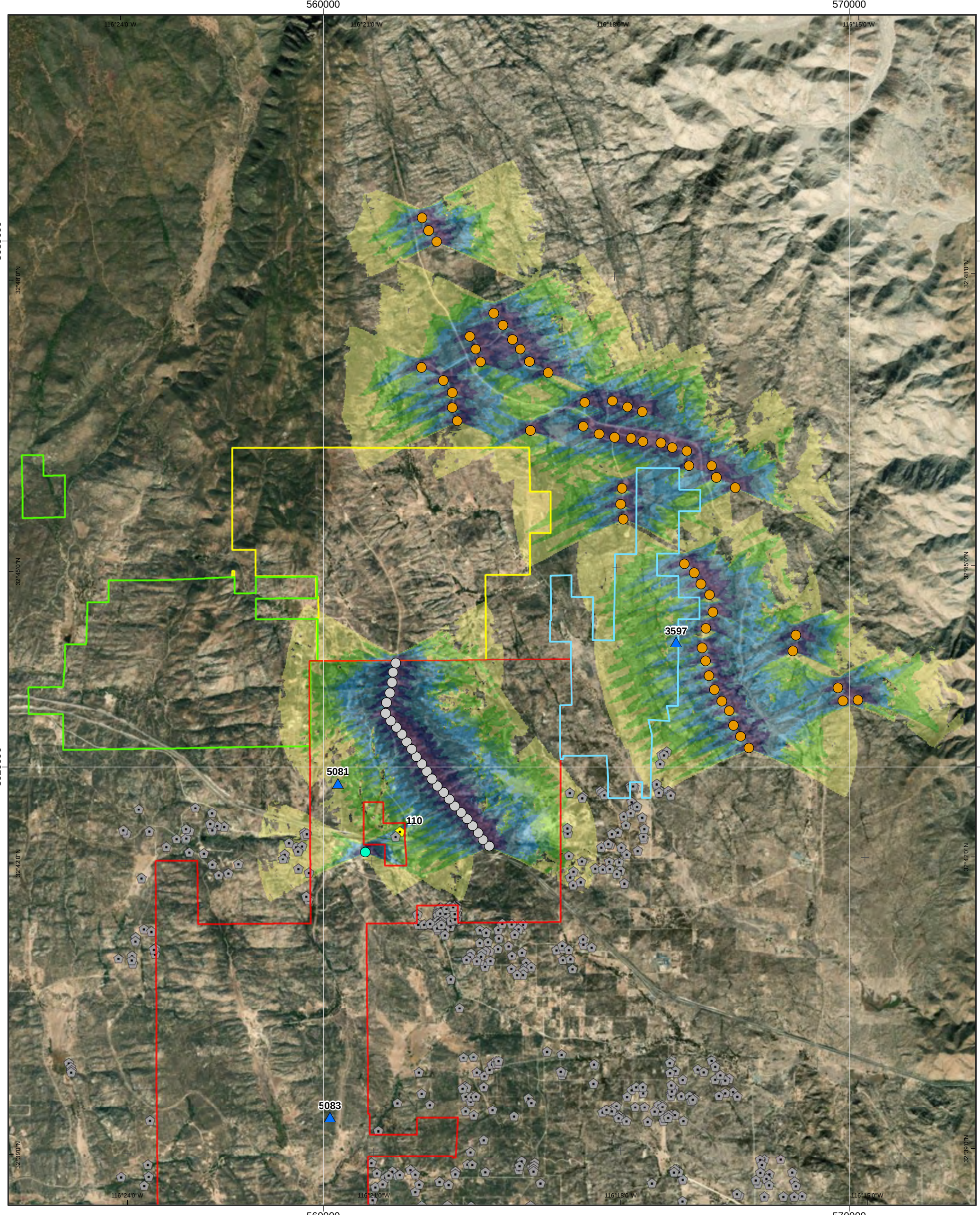

FIGURE C1
SCENARIO 1: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.5 1 1.5 2 Kilometers
0 0.25 0.5 0.75 1 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

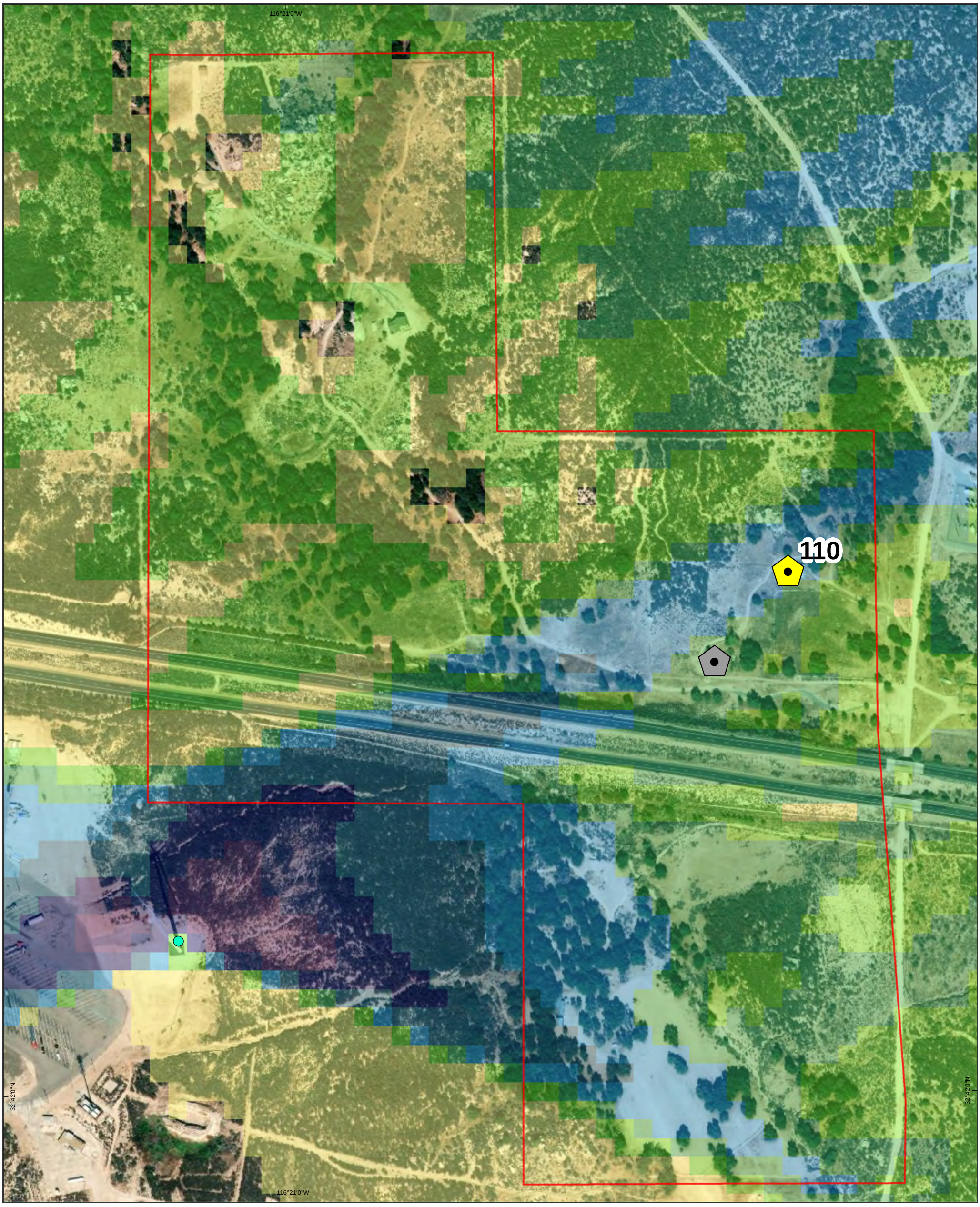

FIGURE C1-A
SCENARIO 1: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.03 0.06 0.09 0.12 Kilometers
0 0.015 0.03 0.045 0.06 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

560000 570000

116°25'0"W 116°20'0"W 116°15'0"W

3630000 3620000 3610000

32°45'0"N 32°40'0"N

3597 5081 5083

112 117 116 124 119 110 140 143 144 159 154 163 221 307 313 320 327 330 338 347 387 413 432 468 643 644 652 655 671 670 677 678 694 693 695 692 698 699 708 703

166 - 194, 196, 199, 201 - 205, 208 - 213, 216, 219, 223 - 225, 228 - 232, 239, 243, 247, 253, 255, 260, 262, 264, 266, 270, 271, 273, and 278

FIGURE C2
SCENARIO 2: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.5 1 1.5 2 Kilometers
0 0.25 0.5 0.75 1 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

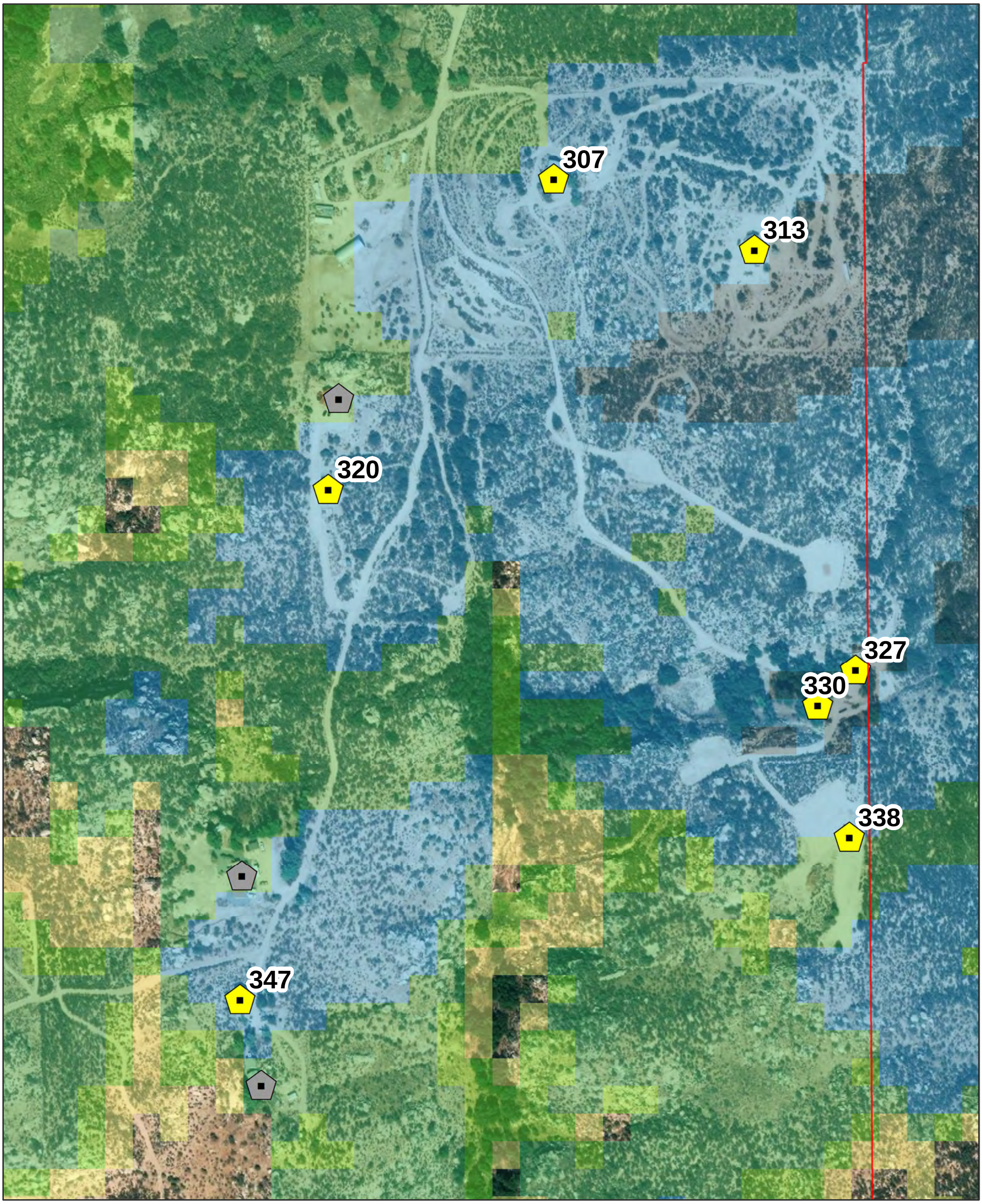

FIGURE C2-A
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.015 0.03 0.045 0.06 Kilometers
0 0.0095 0.019 0.0285 0.038 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

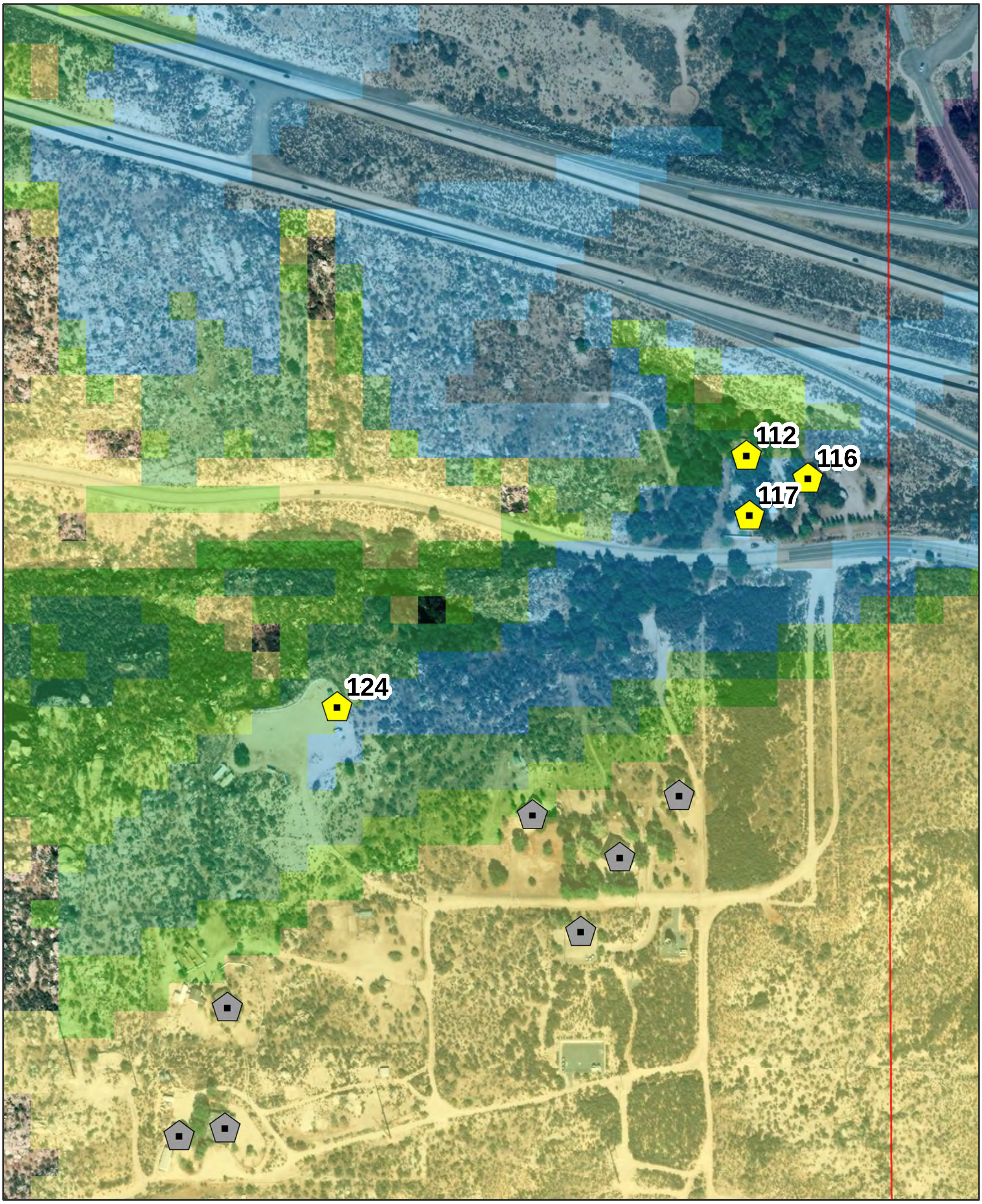

FIGURE C2-B
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.015 0.03 0.045 0.06 Kilometers
0 0.0095 0.019 0.0285 0.038 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

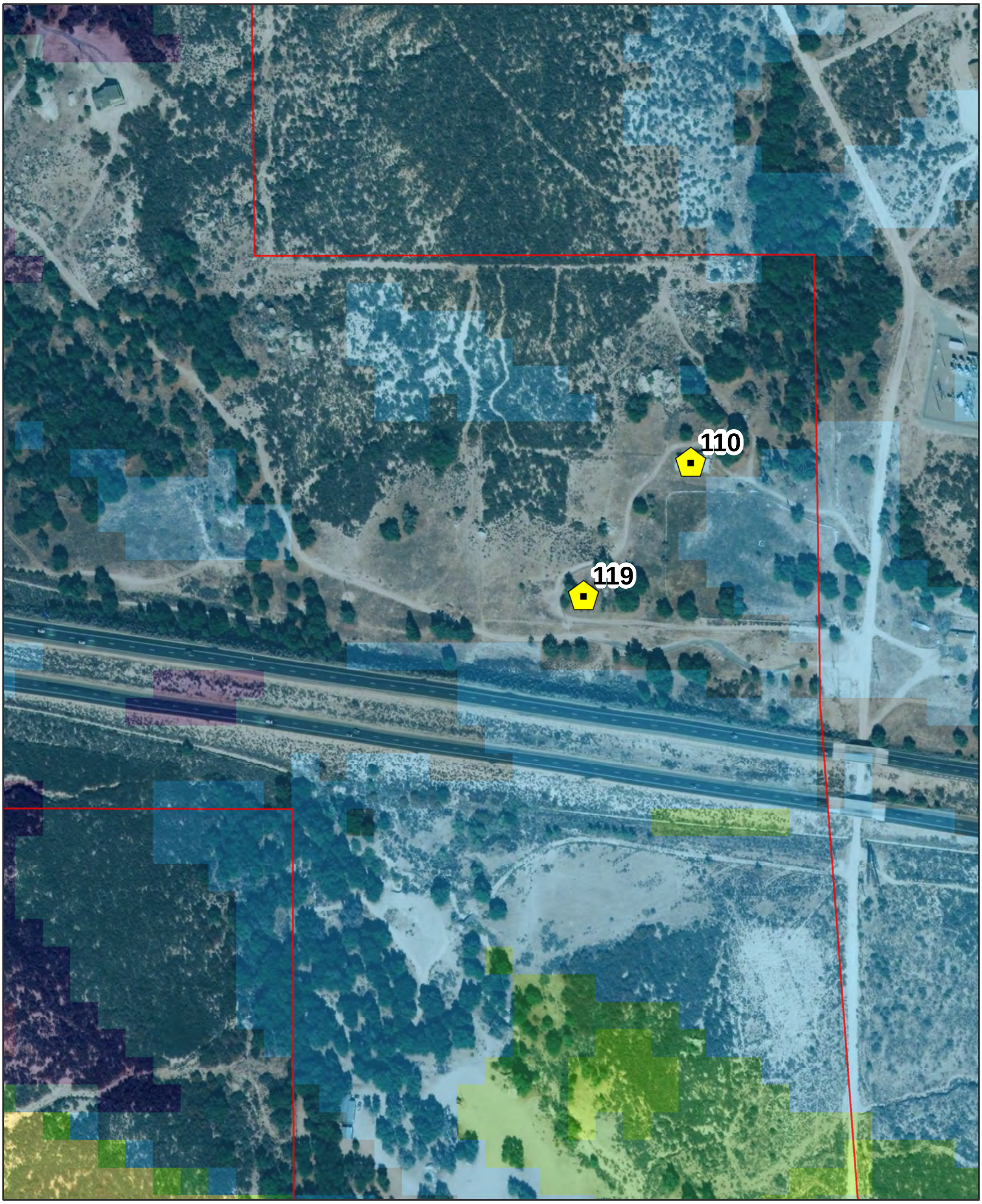

FIGURE C2-C
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.015 0.03 0.045 0.06 Kilometers
0 0.0095 0.019 0.0285 0.038 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

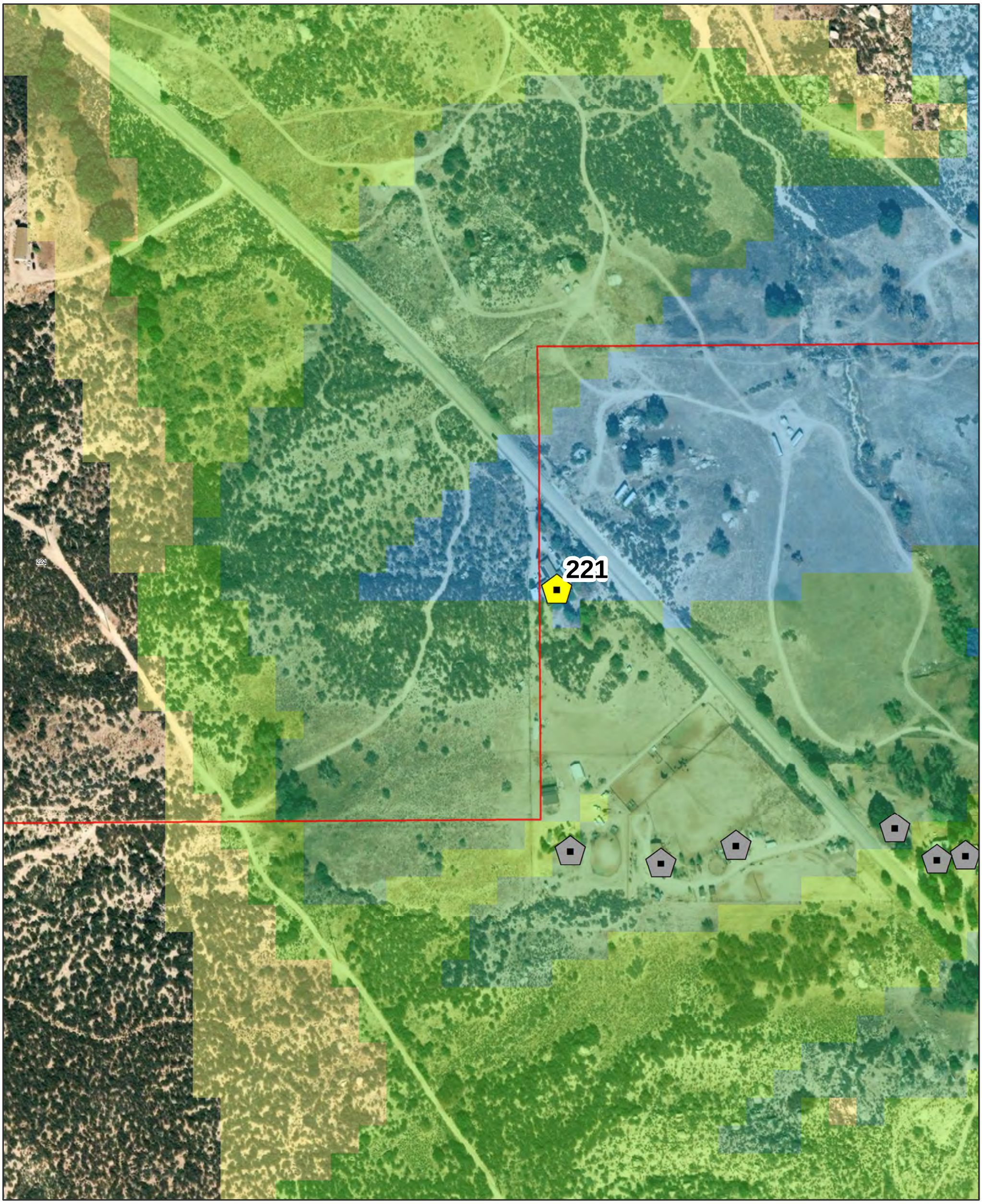

FIGURE C2-D
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.015 0.03 0.045 0.06 Kilometers
0 0.00950.0190.02850.038 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

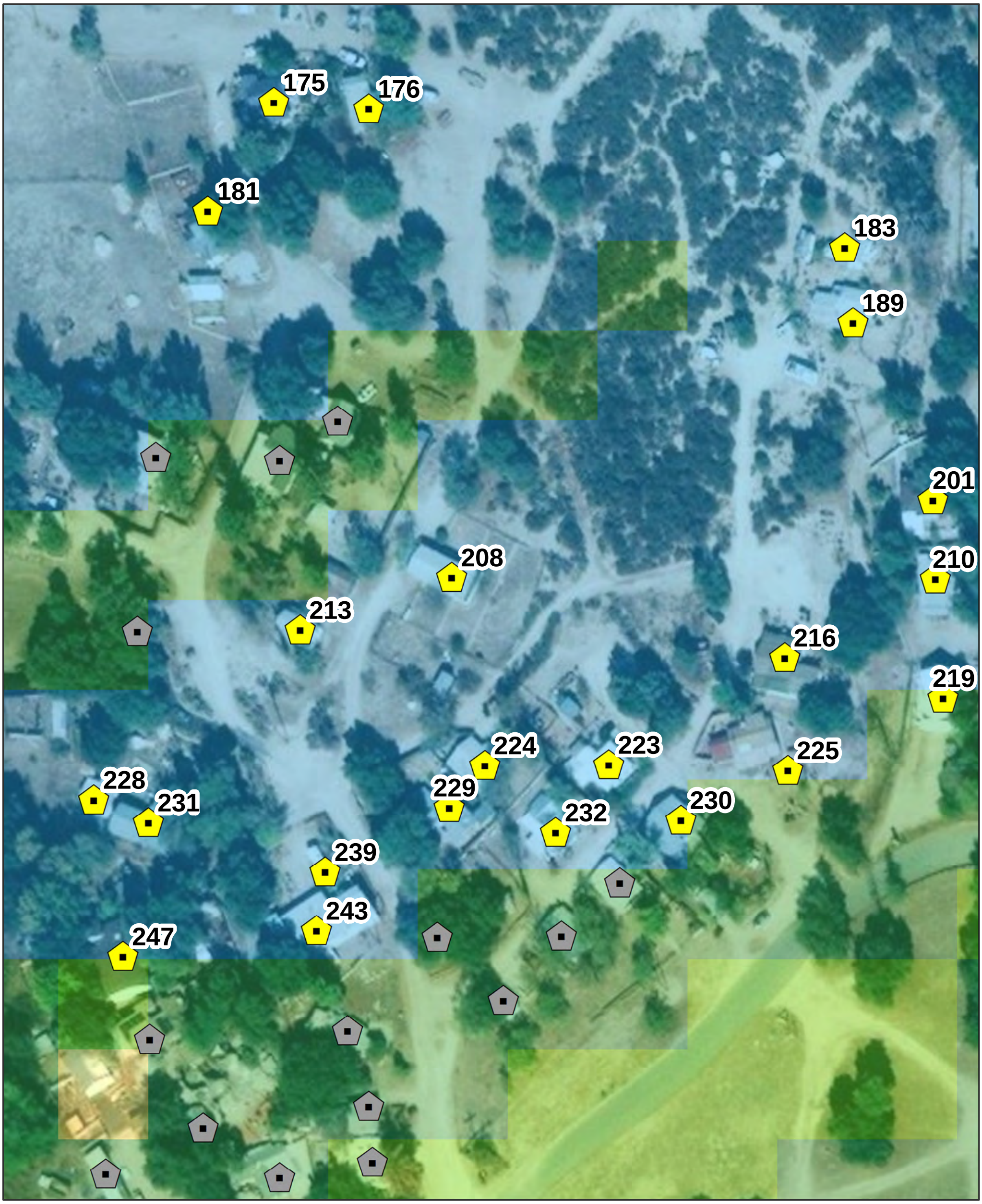

FIGURE C2-E
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.005 0.01 0.015 0.02 Kilometers
0 0.0025 0.005 0.0075 0.01 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

116°20'0"W

168 167 166 172 173 174 170 171 169 177 178 179 180 183 182 184 185 186 187 189 188 192 194 191 190 193 199 196 201 202 204 203 205 210 211 212 209 219 253 255

116°20'0"W

FIGURE C2-F
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.005 0.01 0.015 0.02 Kilometers
0 0.0025 0.005 0.0075 0.01 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

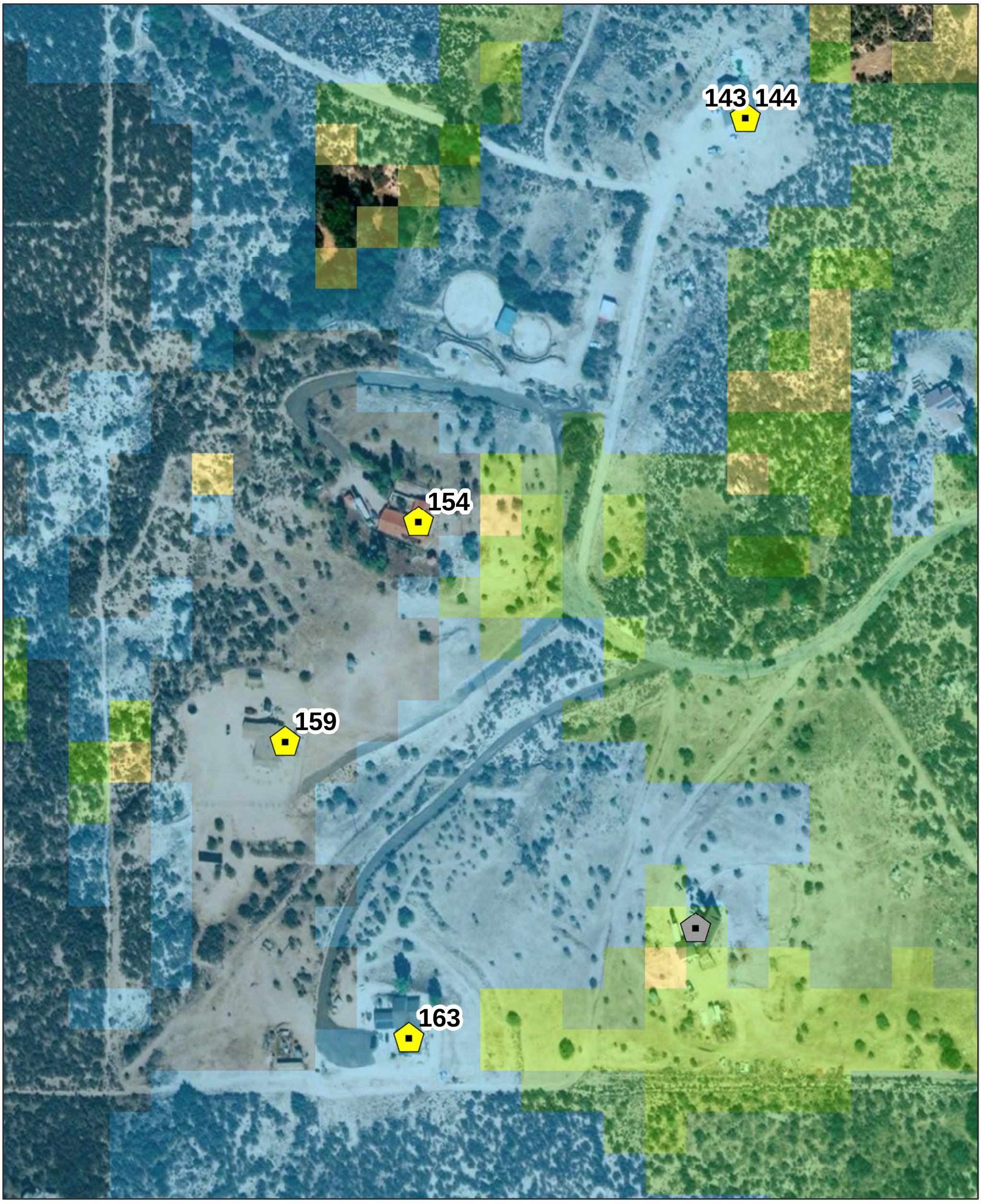

FIGURE C2-G
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.01 0.02 0.03 0.04 Kilometers
0 0.0065 0.013 0.0195 0.026 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

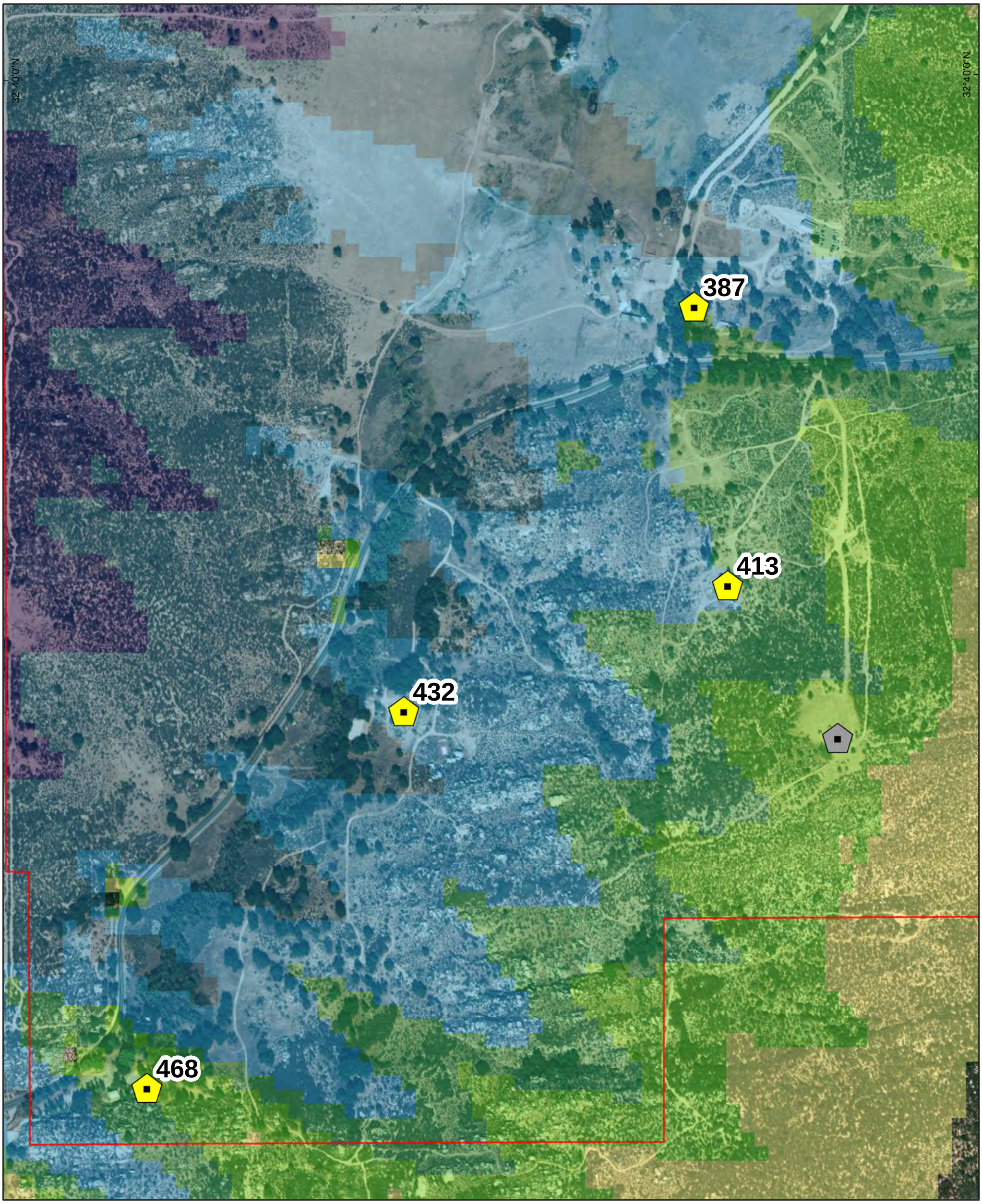

FIGURE C2-H
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.03 0.06 0.09 0.12 Kilometers
0 0.015 0.03 0.045 0.06 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

643
644
652
655
671
670
677
678
3610000
3610000

FIGURE C2-I
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.015 0.03 0.045 0.06 Kilometers
0 0.01 0.02 0.03 0.04 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

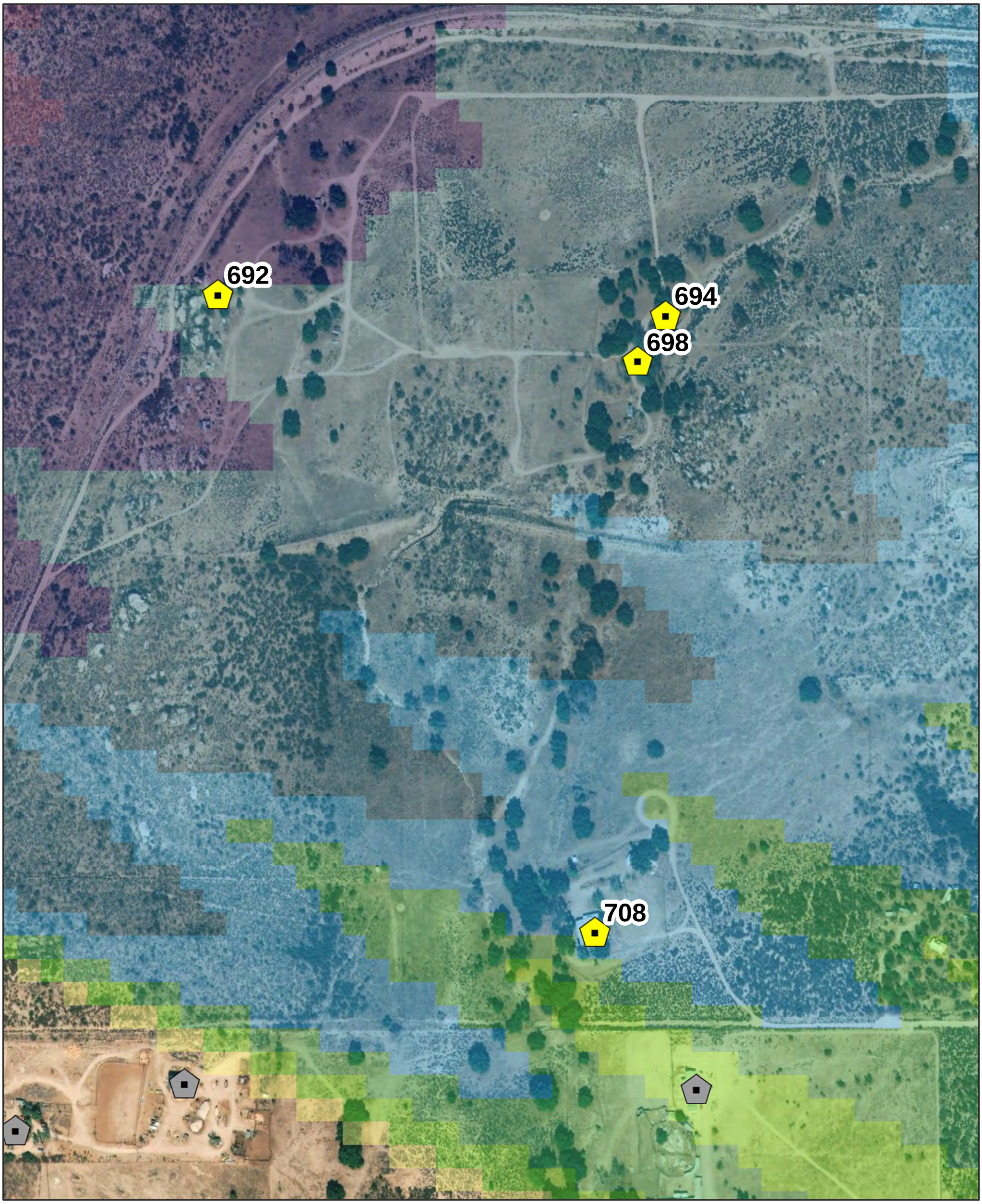

FIGURE C2-J
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.015 0.03 0.045 0.06 Kilometers
0 0.01 0.02 0.03 0.04 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

693
695
699
703

FIGURE C2-K
SCENARIO 2/3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.015 0.03 0.045 0.06 Kilometers
0 0.01 0.02 0.03 0.04 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

116°25'0"W 560000 116°20'0"W 570000 116°15'0"W

3630000 32°45'0"N

3620000 32°40'0"N

3610000

3597 5081 5083

112 117 116 124 119 110 140 143 144 159 154 163 221 307 313 320 327 330 338 347 387 413 432 468 643 644 652 655 671 670 677 678 694 693 695 692 698 699 708 703

166 - 194, 196, 199, 201 - 205, 208 - 213, 216, 219, 223 - 225, 228 - 232, 239, 243, 247, 253, 255, 260, 262, 264, 266, 270, 271, 273, and 278

116°25'0"W 560000 116°20'0"W 570000 116°15'0"W

FIGURE C3
SCENARIO 3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.5 1 1.5 2 Kilometers
0 0.25 0.5 0.75 1 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC

FIGURE C3-A
SCENARIO 3: ANNUAL SHADOW FLICKER
Expected-Case Scenario
Off-Reservations Receptors

Legend

- Golden Acorn Casino: GE 1.85-82.5 Turbine (80-m HH)
- Kumeyaay: Gamesa G87-2.0 MW Turbine (67-m HH)
- Tule: GE 2.3-107 Turbine (80-m HH)
- Campo: GE 3.83-137 Turbine (110-m HH)
- Torrey: GE 3.83-137 Turbine (110-m HH)
- Meteorological Tower
- Boulder Brush Boundary
- Campo Reservation Boundary
- La Posta Reservation Boundary
- Manzanita Reservation Boundary

Off Reservations Receptors

- Does Not Exceed 30 Min. Per Day and/or 30 Hrs. Per Year
- Exceeds 30 Min. Per Day and/or 30 Hrs. Per Year

Shadow Flicker (Annual Hours)

- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- > 200

Reference

0 0.0055 0.011 0.0165 0.022 Kilometers
0 0.0030.0060.0090.012 Miles

N

Shadow Flicker Data Resolution: 20 m
Coordinate System: UTM 11N
Datum: WGS84

Originator

Date: 08-Nov-2019
Department\Originator: ES\LD
Client: Terra-Gen Development Company, LLC