Appendix A – Solar Photographic Assessment Results

A total of eight potential SLRD and community facilities were assessed using solar photography in Gold Bridge and Bralorne as listed below:

SLRD Sites

- Gold Bridge Transfer Station
- Gold Bridge Water Pumping Station
- Gold Bridge Fire, Library, Post Office Complex
- Bralorne Water Pumping Station

Community Sites

- Gold Bridge Haylmore Heritage Site
- Gold Bridge Community Club
- Gold Bridge Minto Communications Facility
- Bralorne Bridge River Valley Community Church

Detailed solar analysis follows for each of the sites above.

SLRD and Community Sites - Solar Assessment Overview

A total of eight different sites were assessed with solar photography. Multiple possible array locations were studied at most of the eight. Because many of the photo sequences involved shooting directly into the sun, most of the pictures required touchup to remove lens flare and dark cloud contrast which can confuse the shading assessment software

When assessing sites we generally use the guidelines below to score results:

Shading Factor

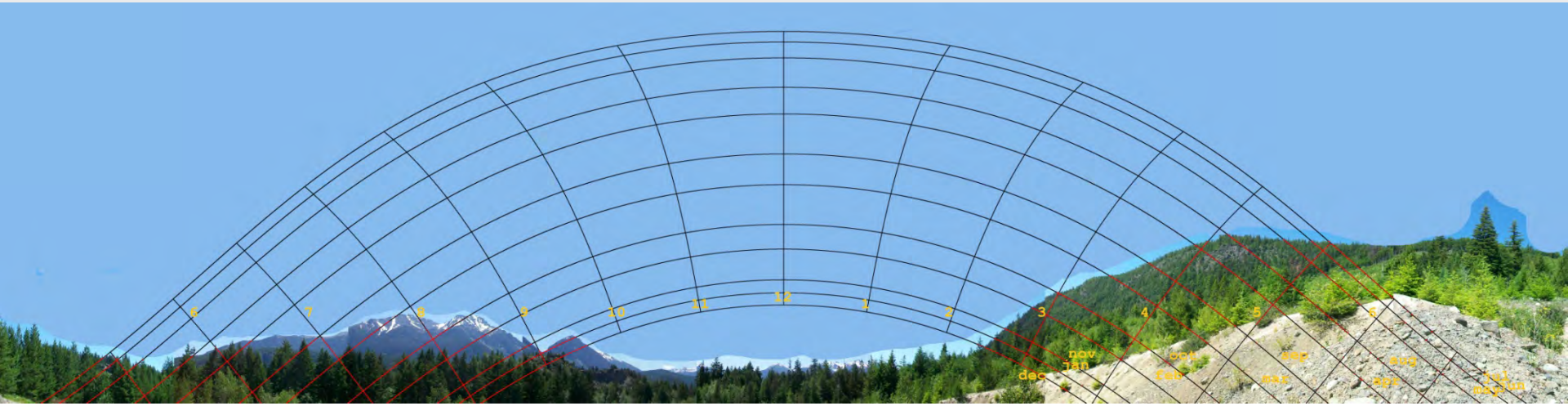
- ≥ 0.95 → excellent
- 0.9 to 0.94 → very good
- 0.85 to 0.89 → good
- 0.80 to 0.84 → acceptable .
- 0.75 to 0.79 → marginal
- ≤ 0.74 → undesirable

Shading factor indicates the fraction of available annual solar energy that will not be lost to shading. For example SF = 0.8 means 80% of available annual solar energy is recoverable while 20% will be lost to shading. A perfect site would have SF = 1.0.

1. SLRD Gold Bridge Transfer Station – Solar Array Locations Considered

SLRD Gold Bridge Transfer Station – Solar Array Location 1

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	16.6	14.5	10.7	6.8	4.1	2.8	3.4	5.5	8.7	13.9	16.5	19.6	10.2
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.78	2.79	4.26	5.23	5.39	5.67	5.73	5.83	5.04	3.27	1.68	1.36	4.01
Shading Factor	0.92												

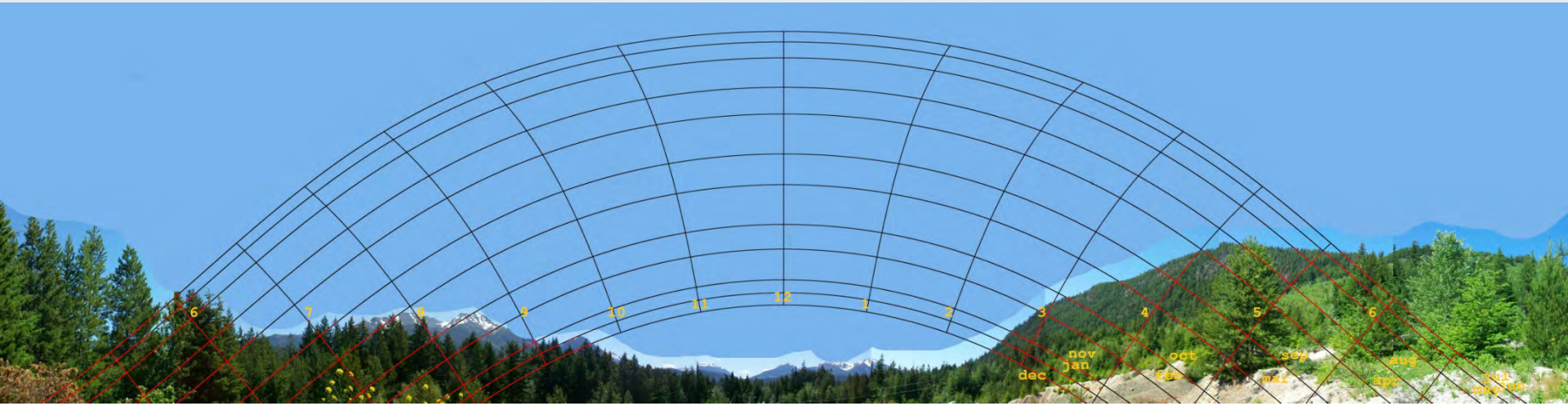


Annual Shading Factor = 0.92 for a location score of “Very Good”. No more than about 8% of available energy would be lost to shading annually in spite of mountains to the SE and SW.

There is unobstructed solar exposure year round resulting in excellent worst case shading of about 20% in Dec.

SLRD Gold Bridge Transfer Station – Solar Array Location 2

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	18.1	15.3	12.2	7.5	5.6	4.2	4.6	6.2	9.9	14.4	17.1	20.4	11.3
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.75	2.76	4.19	5.19	5.31	5.59	5.65	5.78	4.98	3.25	1.67	1.34	3.96
Shading Factor	0.91												

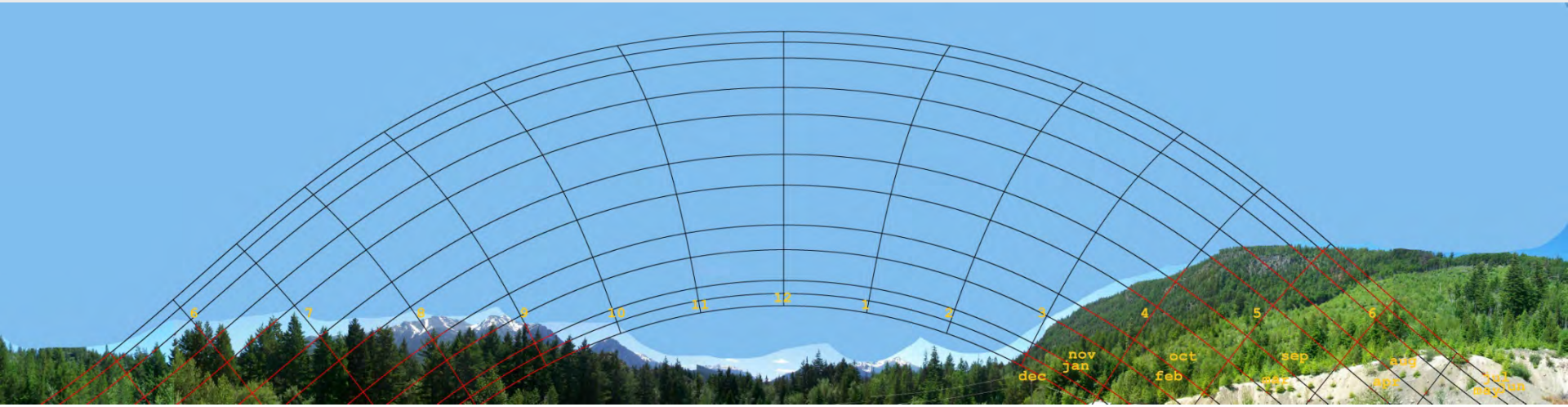


Annual Shading Factor = 0.91 for a location score of “Very Good”. No more than about 9% of available energy would be lost to shading annually in spite of mountains to the SE and SW.

There is good unobstructed solar exposure year round resulting in excellent worst case shading of about 20% in Dec.

SLRD Gold Bridge Transfer Station – Solar Array Location 3

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	16.2	15.0	10.6	6.9	4.5	3.4	3.8	5.7	8.6	13.0	16.3	17.6	10.1
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.79	2.77	4.26	5.22	5.36	5.63	5.7	5.82	5.05	3.3	1.68	1.39	4.0
Shading Factor	0.92												



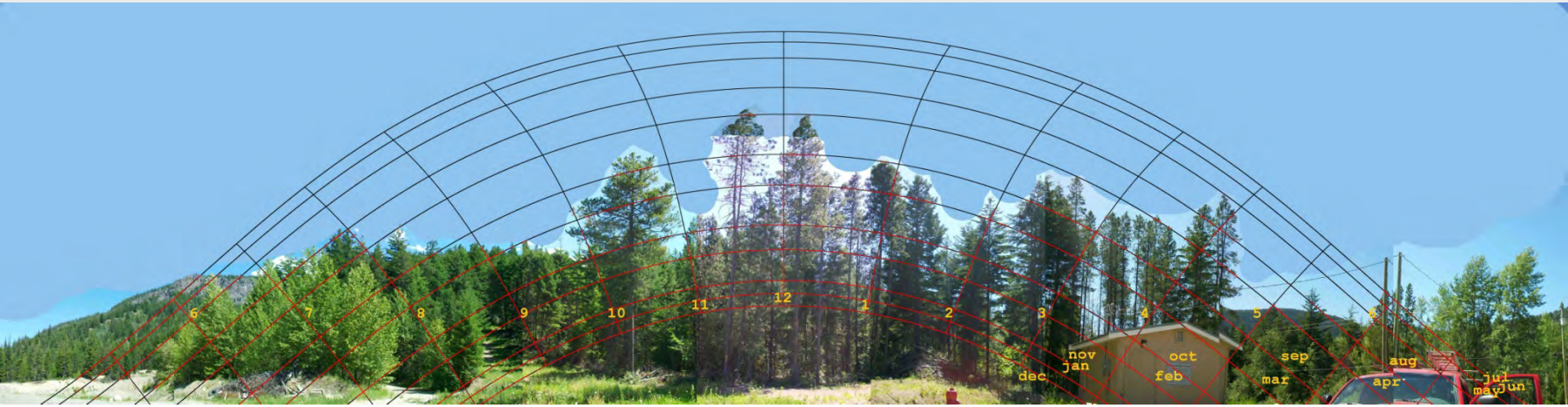
Annual Shading Factor = 0.92 for a location score of “Very Good”. No more than about 8% of available energy would be lost to shading annually in spite of mountains to the SE and SW.

There is good unobstructed solar exposure year round resulting in excellent worst case shading of about 18% in Dec; slightly better than locations 1 and 2.

2. SLRD Gold Bridge Water Pumping Station – Solar Array Locations Considered

SLRD Gold Bridge Water Pumping Station – Solar Array Location 1

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	98.2	90.8	57.3	18.6	4.3	3.1	2.9	8.6	39.6	79.8	97.0	97.8	49.6
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.04	0.3	2.04	4.56	5.38	5.65	5.75	5.64	3.34	0.76	0.06	0.04	2.81
Shading Factor	0.64												

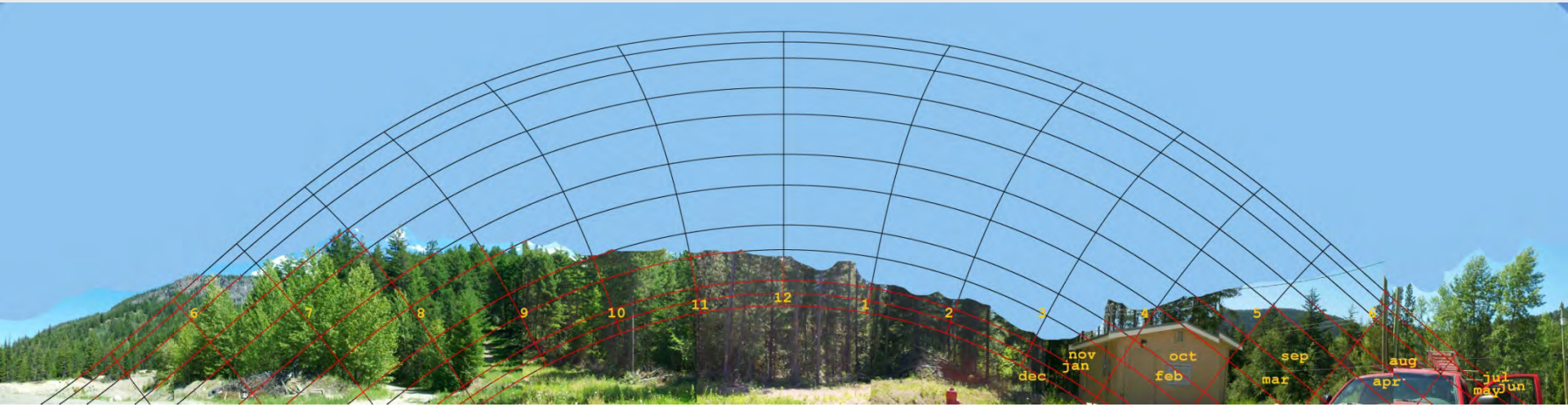


Annual Shading Factor = 0.64 for a location score of “Undesirable”. About 36% of available energy would be lost to extensive shading by trees SE through SW.

There is seriously compromised solar exposure Sept through Mar with the location basically 100% shaded Nov – Feb. Should tree topping be possible, performance would improve.

SLRD Gold Bridge Water Pumping Station – Solar Array Location 1 (Tree Treatments)

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	98.1	47.9	20.0	10.6	3.8	3.2	2.9	6.2	15.2	32.3	88.0	97.8	35.5
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.04	1.7	3.82	5.01	5.41	5.65	5.75	5.79	4.68	2.57	0.24	0.04	3.4
Shading Factor	0.78												

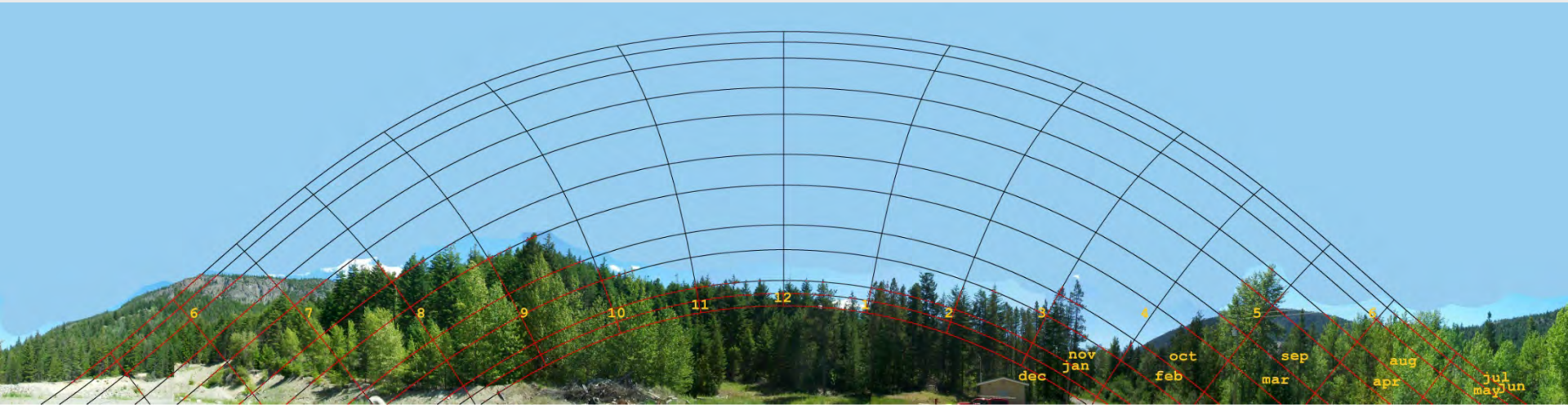


Annual Shading Factor improves to = 0.78 for a location score of “Marginal”. About 22% of available energy would still be lost to shading in spite of extensive tree topping.

The location remains basically 100% shaded Nov – Feb.

SLRD Gold Bridge Water Pumping Station – Solar Array Location 2

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	85.3	35.0	17.6	8.1	3.4	2.7	2.7	4.8	12.6	26.6	67.7	95.6	30.2
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.31	2.12	3.93	5.15	5.43	5.67	5.77	5.87	4.83	2.78	0.65	0.07	3.55
Shading Factor	0.81												

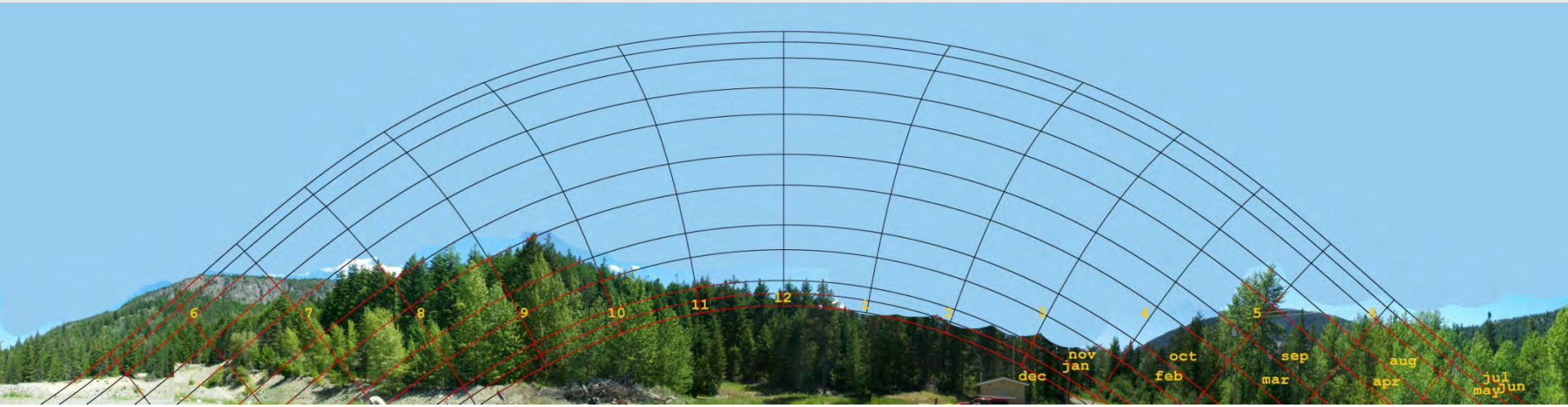


Annual Shading Factor = 0.81 for a location score of “Acceptable”. About 19% of available energy would be lost to shading by trees SE through SW.

There is seriously compromised solar exposure Nov - Feb though winter performance is somewhat improved over location 1. Should tree topping be possible, minor improvements will occur.

SLRD Gold Bridge Water Pumping Station – Solar Array Location 2 (Tree Treatments)

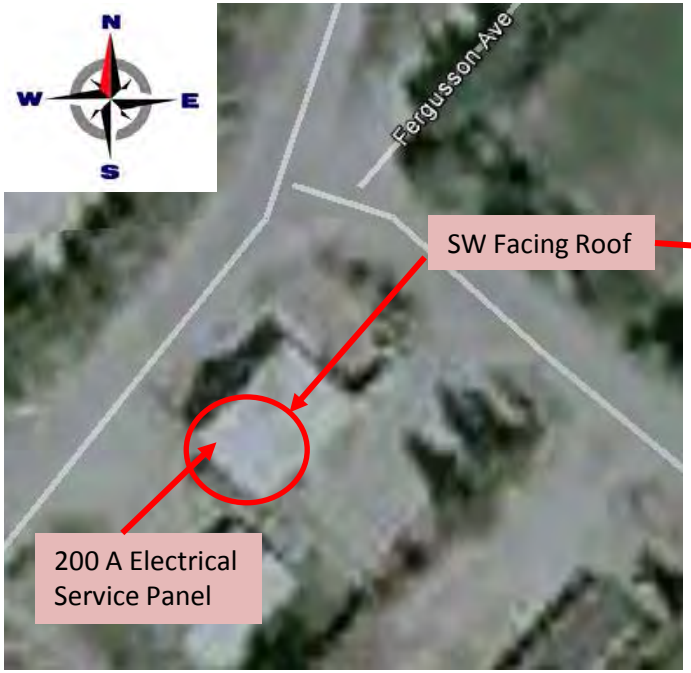
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	70.5	25.7	17.5	8.1	3.4	2.7	2.7	4.8	12.6	24.4	51.8	91.7	26.4
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.63	2.42	3.94	5.15	5.43	5.67	5.77	5.87	4.83	2.87	0.97	0.14	3.65
Shading Factor	0.83												

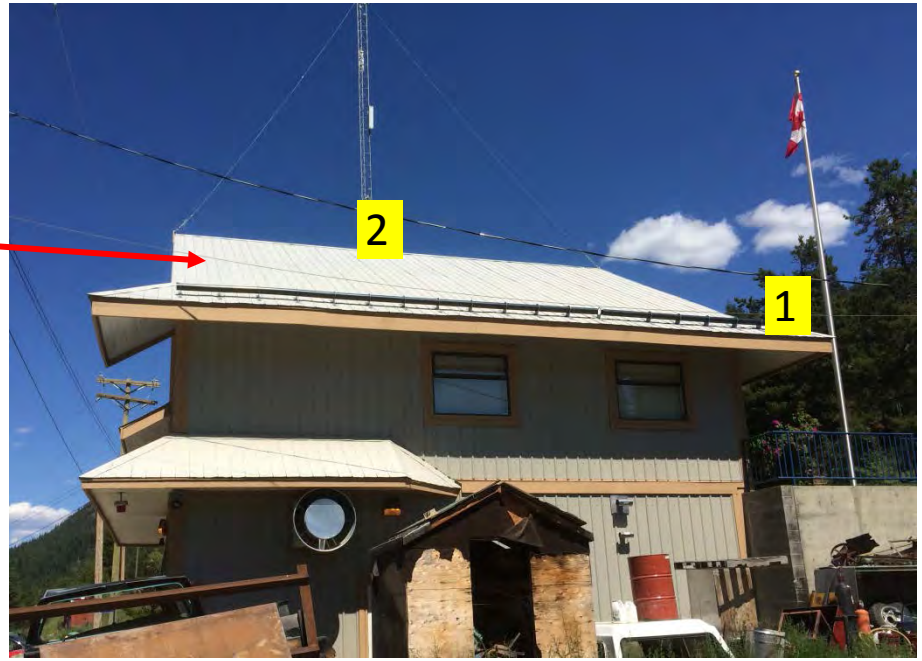


Annual Shading Factor improves marginally to 0.83 for a location score of “Acceptable”. About 17% of available energy would be lost to shading by trees SE through SW.

Seriously compromised solar exposure persists Nov – Feb even with tree topping.

3. SLRD Gold Bridge Fire, Library, Post Office Complex – Array Locations Considered

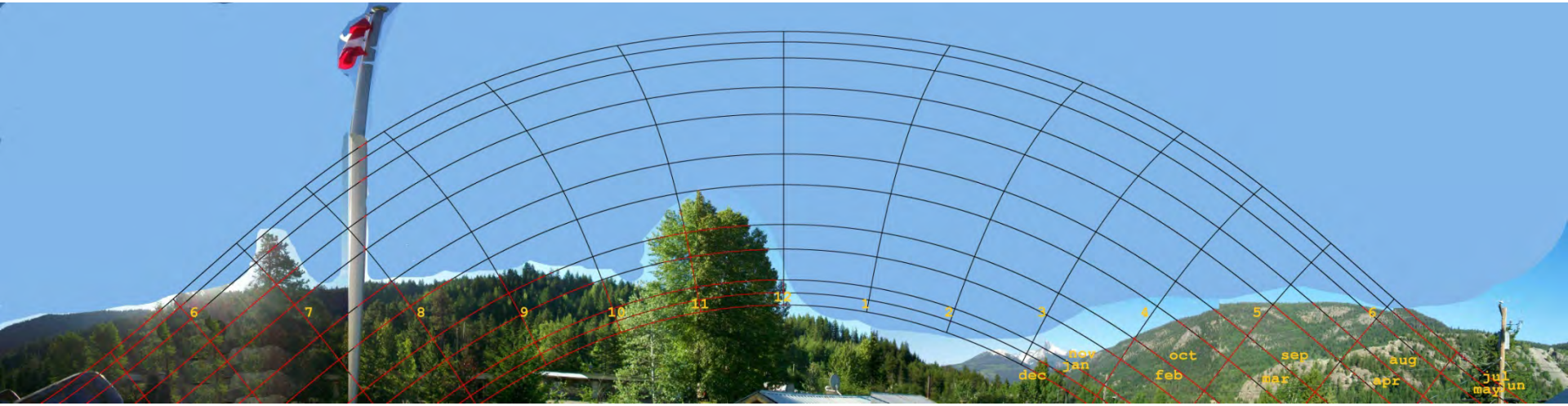




Solar photographic sequences were shot low on the SW roof at location 1 and high on the roof at location 2 to provide best and worst case projections of performance. Due to their orientations, the remaining roof surfaces would not be appropriate for a solar array.

SLRD Gold Bridge Fire, Library, Post Office Complex – Array Location 1

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	41.1	32.3	12.9	6.6	5.0	4.4	4.7	5.8	8.2	24.8	41.7	44.9	19.3
Sunlight/Day (Hours)	1.63	2.66	4.19	5.28	5.81	6.13	6.16	6.02	5.05	3.18	1.59	1.28	4.09
Available Sunlight (Hours)	0.96	1.8	3.65	4.94	5.52	5.86	5.87	5.67	4.63	2.39	0.93	0.7	3.59
Shading Factor	0.88												

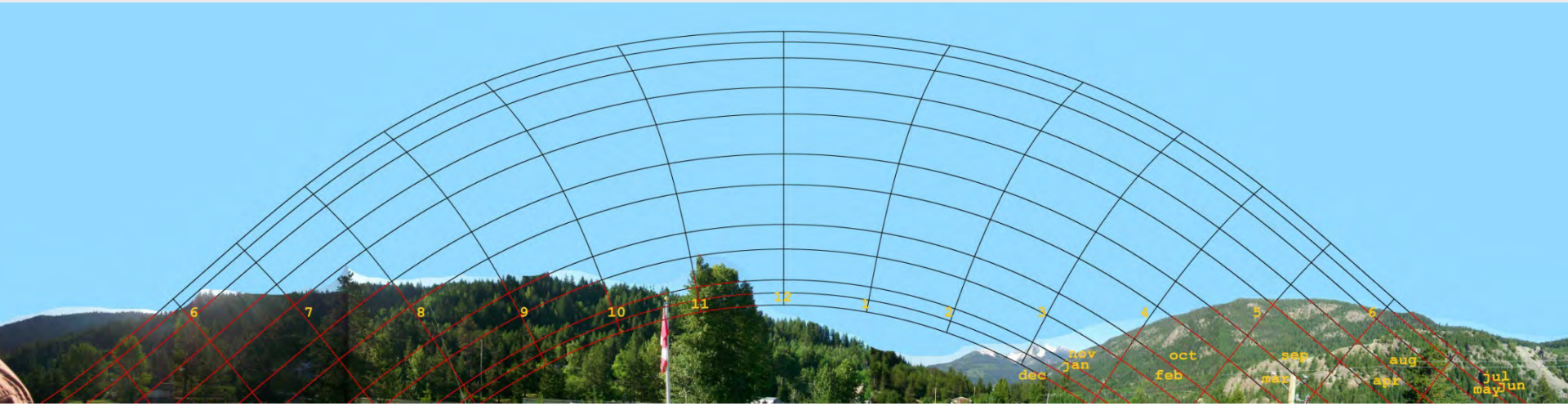


Annual Shading Factor = 0.88 for a location score of “Good”. About 19% of available energy would be lost to shading due by hillside to the SE, deciduous trees to the S, and mountain to the SW.

There is moderately compromised solar exposure Nov – Feb. This location gives a worst case projection of performance using this roof surface.

SLRD Gold Bridge Fire, Library, Post Office Complex – Array Location 2

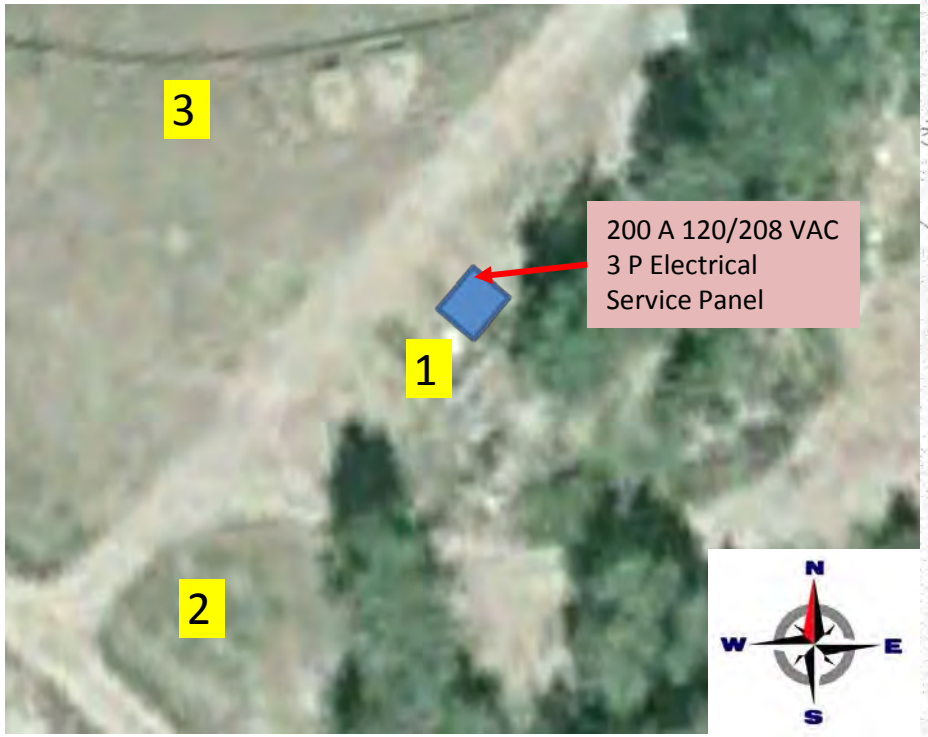
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	36.2	19.5	10.5	6.6	4.6	3.8	4.4	5.5	8.5	14.0	33.8	39.3	15.6
Sunlight/Day (Hours)	1.71	2.75	4.26	5.27	5.74	6.02	6.07	5.99	5.11	3.27	1.66	1.34	4.11
Available Sunlight (Hours)	1.09	2.21	3.81	4.92	5.48	5.8	5.8	5.66	4.68	2.81	1.1	0.81	3.69
Shading Factor	0.9												

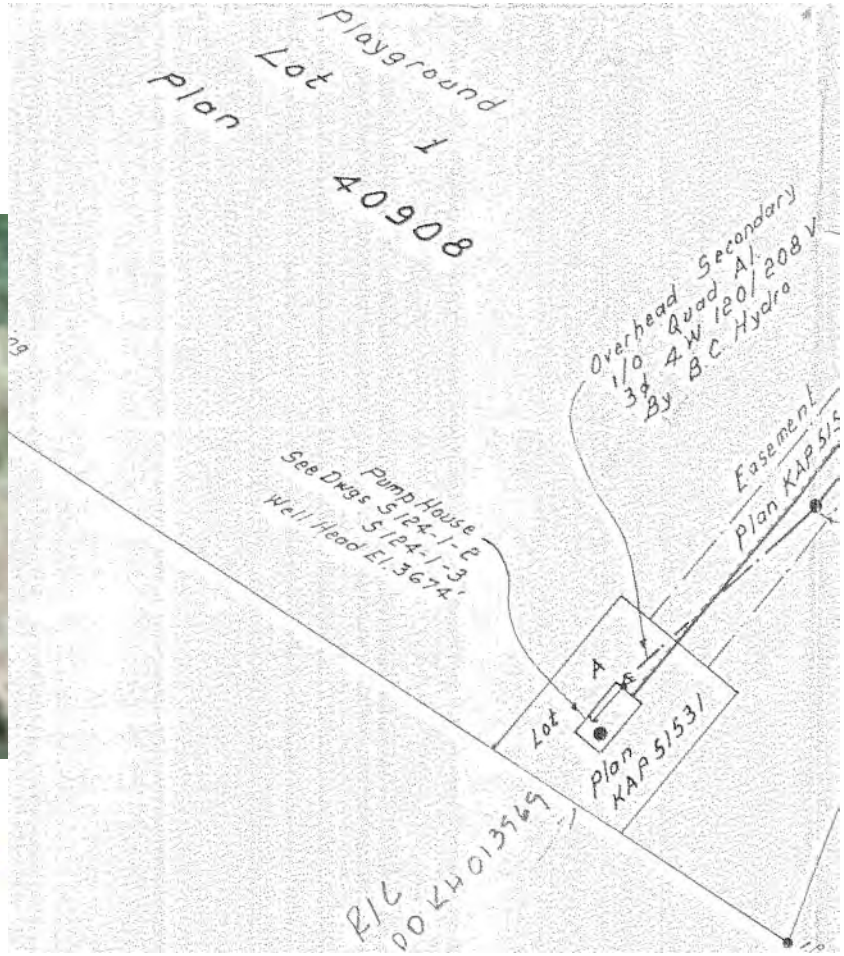


Annual Shading Factor = 0.9 for a location score of “Very Good”. About 10% of available energy would be lost to shading due to hillside to the SE and mountain to the SW.

There is less compromised solar exposure Nov – Feb than location 1 low on the roof. This location gives a best case projection of performance using this roof surface.

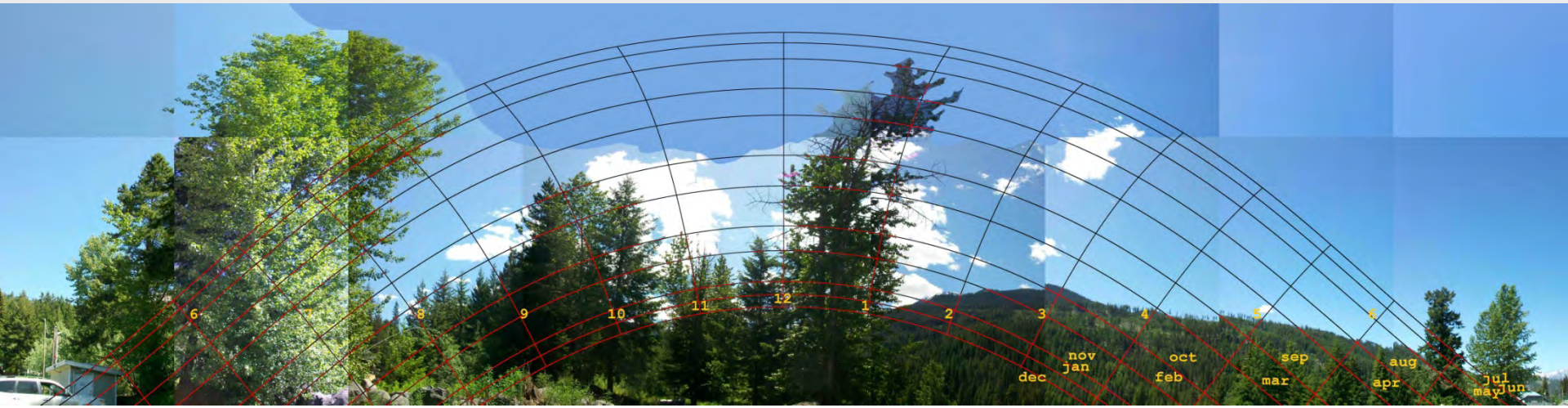
4. SLRD Bralorne Water Pumping Station – Array Locations Considered





SLRD Bralorne Water Pumping Station – Array Location 1

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	89.0	64.3	31.9	12.2	14.4	14.1	13.4	13.3	17.5	51.5	83.3	93.2	41.4
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.23	1.16	3.25	4.92	4.81	5.01	5.14	5.34	4.56	1.84	0.34	0.11	3.07
Shading Factor	0.7												

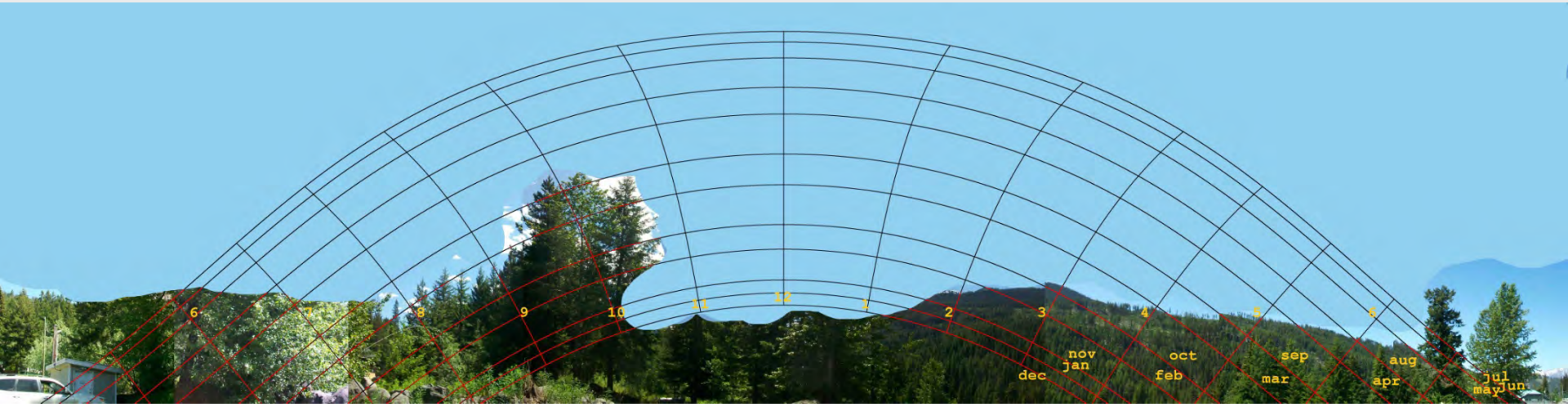


Annual Shading Factor = 0.7 for a location score of “Undesirable”. About 30% of available energy would be lost to shading by trees E through S, and mountains to the SW.

There is seriously compromised solar exposure Oct – Feb. Should tree topping be possible, improvements will occur.

SLRD Bralorne Water Pumping Station – Array Location 1 (Tree Treatments)

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	44.3	41.3	23.3	3.9	2.4	2.1	1.9	2.5	11.0	38.0	41.6	48.1	21.6
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.19	1.91	3.66	5.39	5.48	5.71	5.81	6.01	4.91	2.35	1.18	0.88	3.72
Shading Factor	0.85												

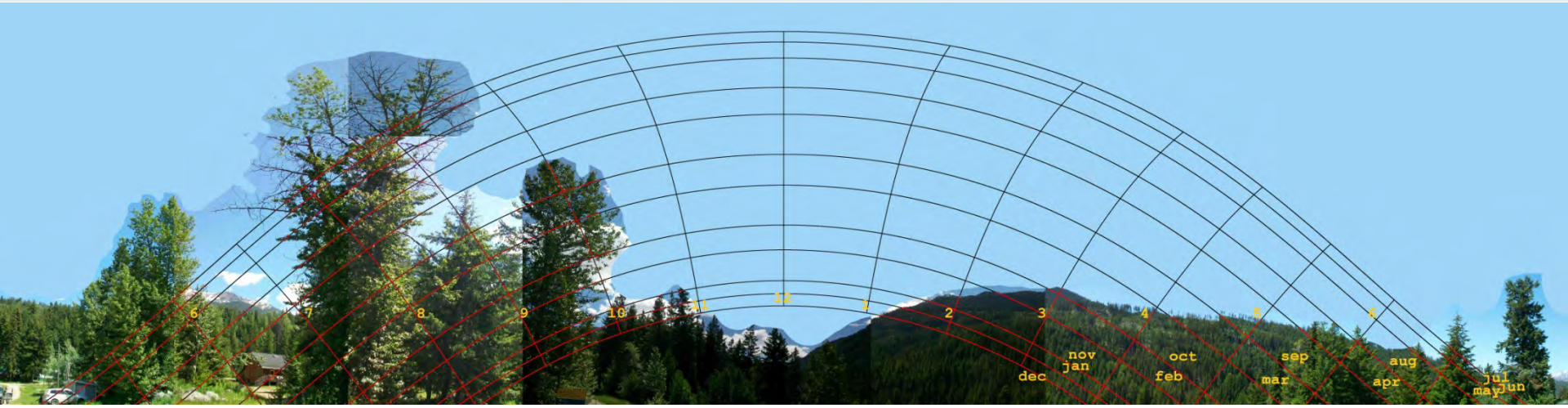


Annual Shading Factor improves to 0.85 for a location score of “Good”. About 15% of available energy would continue to be lost to shading by remaining trees and mountains to the SW.

Year round shading improves moderately with extensive tree topping.

SLRD Bralorne Water Pumping Station – Array Location 2

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	50.8	33.7	26.1	14.0	11.7	14.2	12.6	10.6	20.5	31.8	42.1	58.2	27.2
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.05	2.16	3.52	4.82	4.96	5.0	5.18	5.51	4.39	2.59	1.16	0.71	3.43
Shading Factor	0.79												

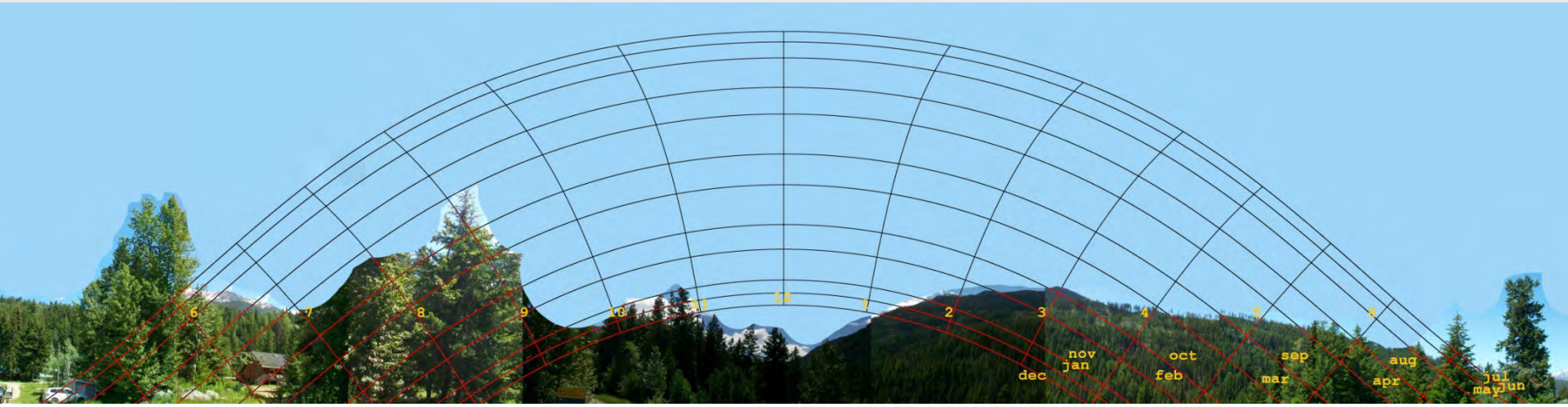


Annual Shading Factor = 0.79 for a location score of “Marginal”. About 21% of available energy would be lost to shading by trees E through SE, and mountains to the SW.

Somewhat better than location 1, should tree topping be possible, improvements will occur.

SLRD Bralorne Water Pumping Station – Array Location 2 (Tree Treatments)

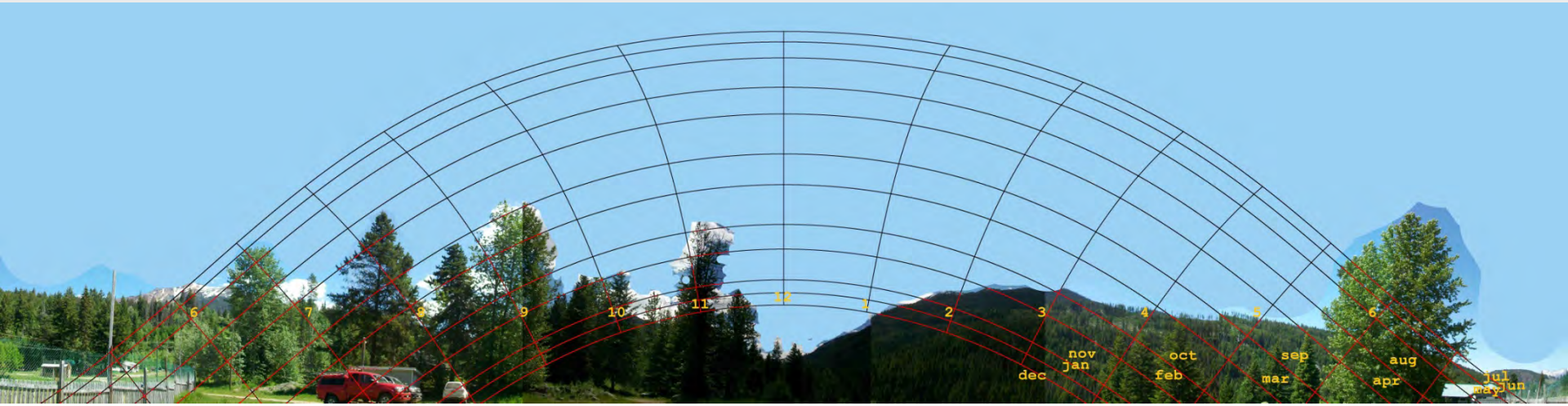
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	49.6	27.6	17.3	5.7	1.8	1.9	1.5	2.1	12.9	23.0	38.7	58.3	20.0
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.08	2.36	3.95	5.29	5.52	5.72	5.84	6.04	4.81	2.92	1.23	0.7	3.79
Shading Factor	0.87												



Annual Shading Factor improves to 0.87 for a location score of “Good”. About 13% of available energy continues to be lost to shading by trees E through SE, and mountains to the SW.

SLRD Bralorne Water Pumping Station – Array Location 3

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	59.3	39.4	18.7	7.2	4.6	3.6	4.0	4.6	13.1	29.0	52.2	68.2	25.3
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.87	1.98	3.88	5.2	5.36	5.62	5.69	5.88	4.8	2.69	0.96	0.54	3.63
Shading Factor	0.83												

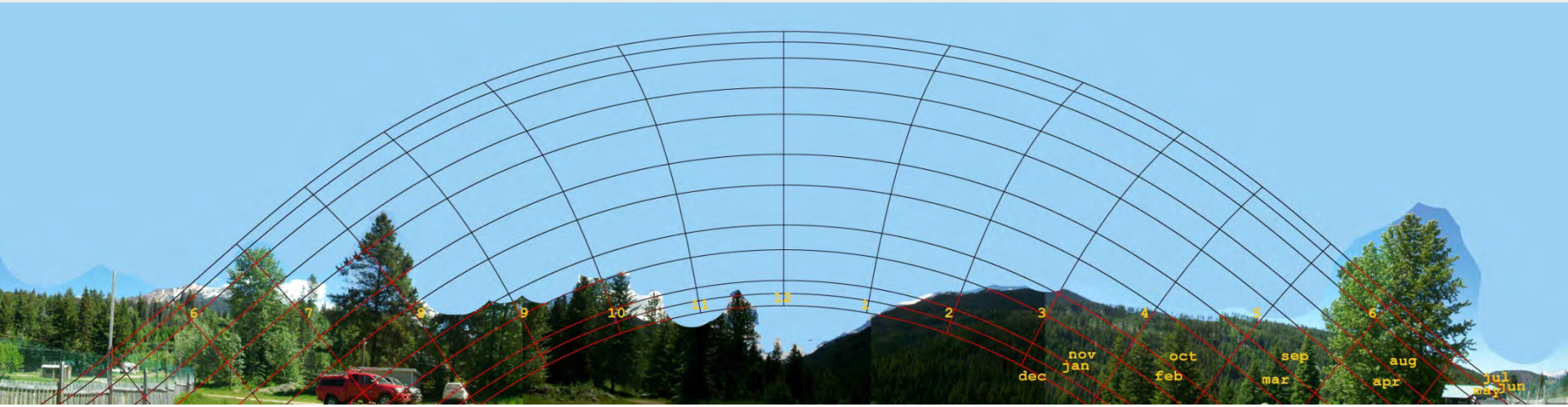


Annual Shading Factor = 0.83 for a location score of “Acceptable”. About 17% of available energy would be lost to shading by trees E through SE, and mountains to the SW.

Somewhat better than locations 1 and 2, should tree topping be possible, improvements will occur.

SLRD Bralorne Water Pumping Station – Array Location 3 (Tree Treatments)

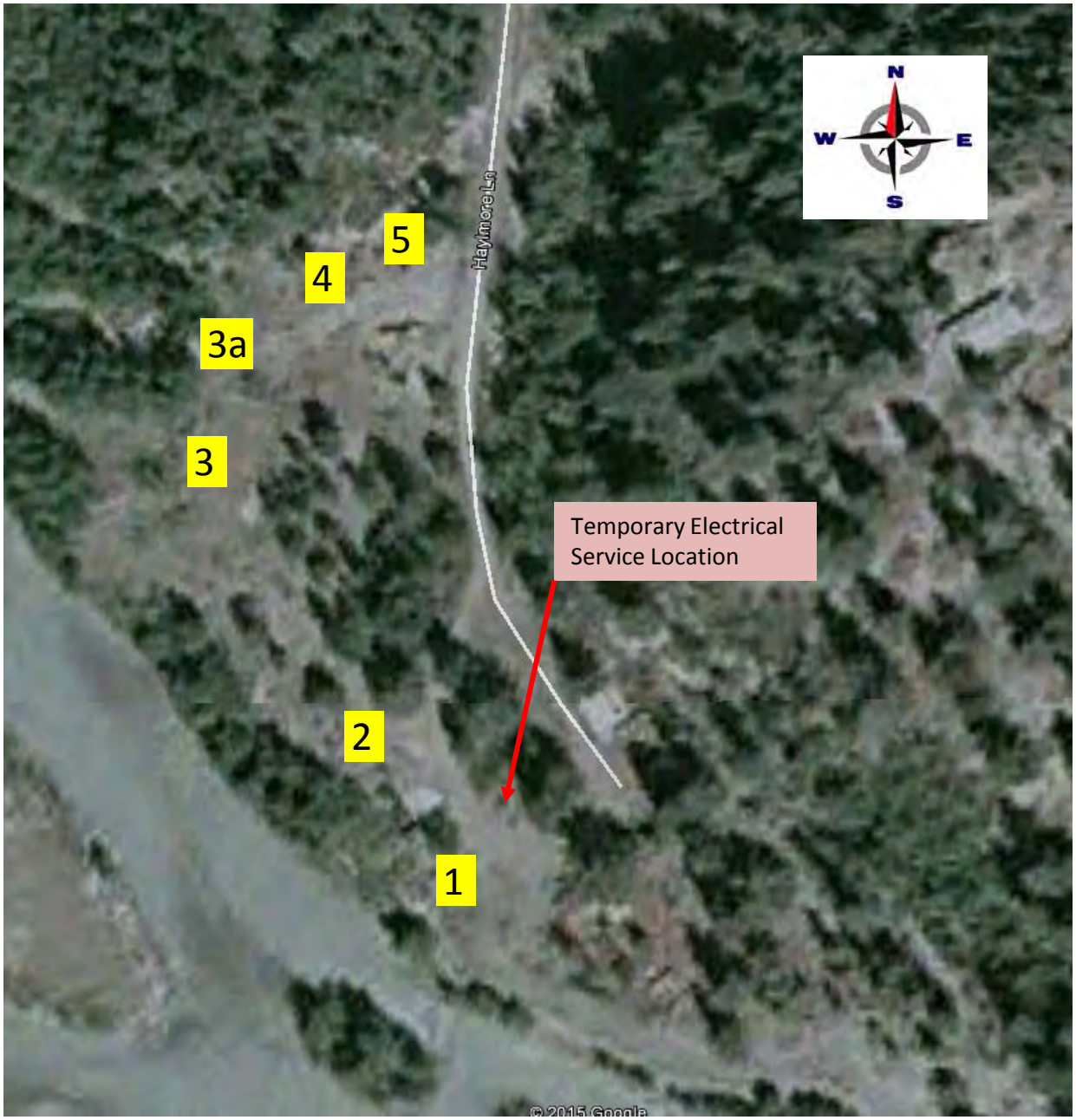
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	51.8	33.0	11.3	7.2	4.6	3.6	4.0	4.6	9.5	20.9	45.1	59.5	21.2
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.03	2.18	4.23	5.2	5.36	5.62	5.69	5.88	5.0	3.0	1.1	0.68	3.76
Shading Factor	0.86												



Annual Shading Factor improves somewhat to 0.86 for a location score of “Good”. About 14% of available energy would be lost to remaining trees and mountains to the SW.

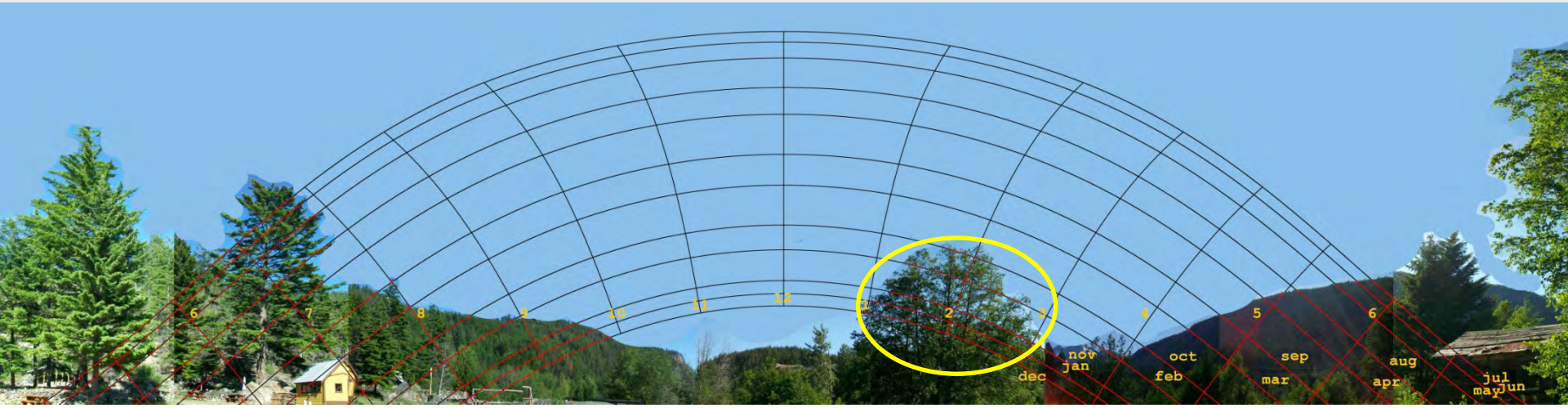
This is not much better than location 1, and slightly worse than 2 after tree topping.

5. Haylmore Heritage Site – Array Locations Considered



Haylmore Heritage Site – Array Location 1

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	43.4	24.0	8.5	7.1	8.7	8.5	8.4	6.7	7.5	15.0	36.4	44.5	18.2
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.21	2.47	4.36	5.21	5.13	5.34	5.43	5.75	5.11	3.22	1.28	0.94	3.79
Shading Factor	0.87												

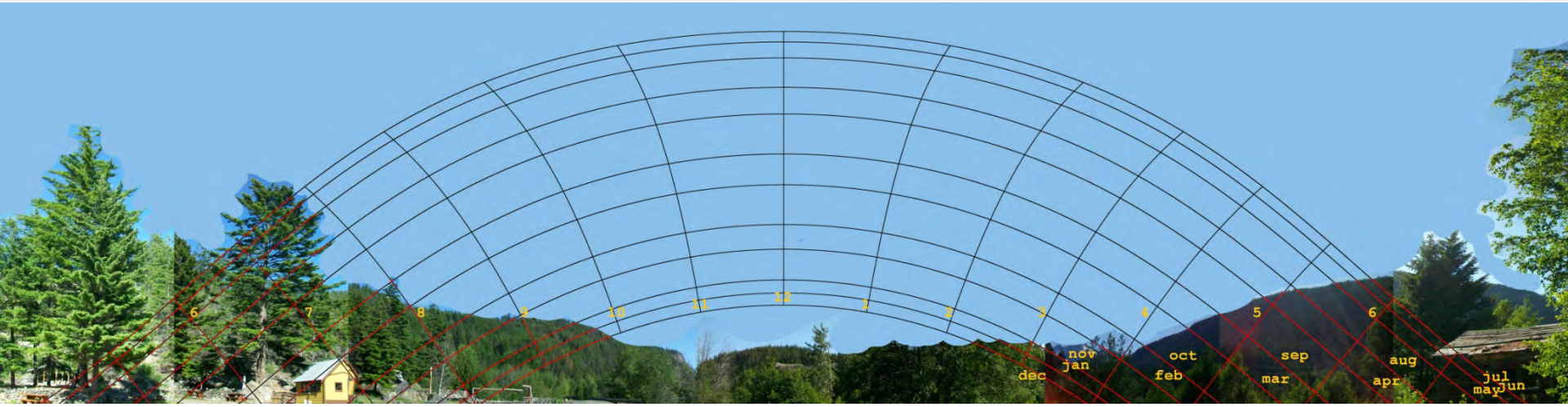


Annual Shading Factor = 0.87 for a location score of “Good”. About 13% of available energy would be lost to shading by selected trees and the mountains to the SW.

There is moderately compromised solar exposure Nov – Jan. Should tree topping be possible, improvements will occur.

Haylmore Heritage Site – Array Location 1 (Tree Treatments)

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	23.0	12.4	8.4	7.1	8.7	8.5	8.4	6.7	7.5	10.4	19.4	26.1	12.2
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.64	2.85	4.37	5.21	5.13	5.34	5.43	5.75	5.11	3.4	1.62	1.25	3.93
Shading Factor	0.9												

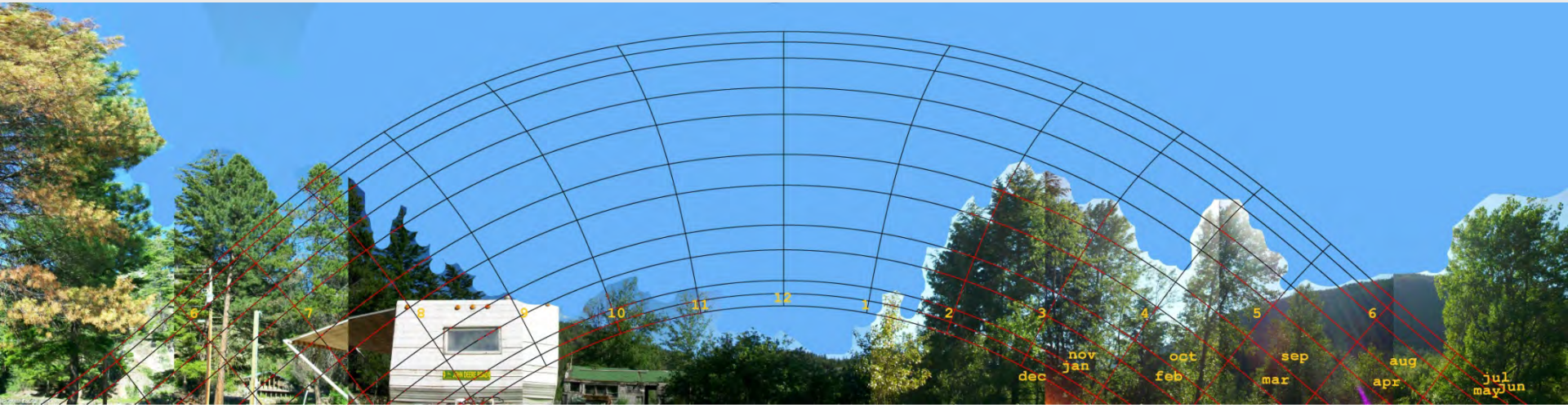


Annual Shading Factor improves to 0.9 for a location score of “Very Good”. About 10% of available energy would be lost to shading by remaining trees and the mountains to the SW.

There is less compromised solar exposure Nov – Jan.

Haylmore Heritage Site – Array Location 2

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	37.9	27.7	25.2	14.4	9.0	8.9	8.4	9.6	21.8	24.2	28.6	39.6	21.3
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.33	2.36	3.56	4.8	5.11	5.31	5.43	5.57	4.32	2.87	1.44	1.02	3.6
Shading Factor	0.82												

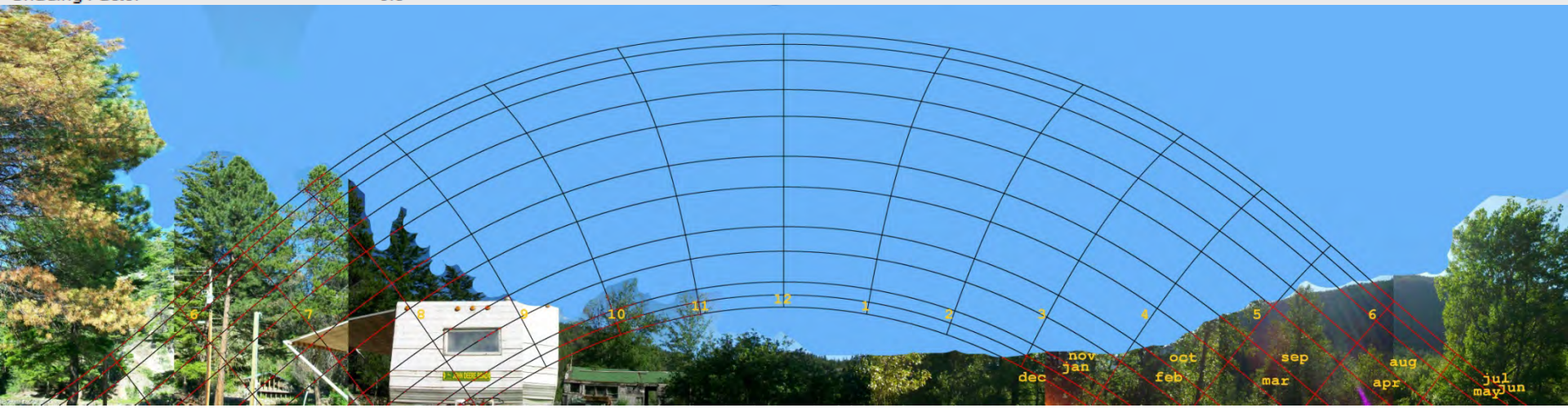


Annual Shading Factor = 0.82 for a location score of “Acceptable”. About 18% of available energy would be lost to shading by trees to the SE and SW.

There is less compromised solar exposure Nov – Jan than location 1 prior to tree treatments. Should tree topping be possible, improvements will occur.

Haylmore Heritage Site – Array Location 2 (Tree Treatments)

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	22.0	6.9	9.2	10.9	8.9	8.9	8.4	8.6	11.3	5.4	14.0	27.0	11.8
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.67	3.03	4.33	5.0	5.12	5.31	5.43	5.63	4.9	3.59	1.73	1.23	3.92
Shading Factor	0.9												

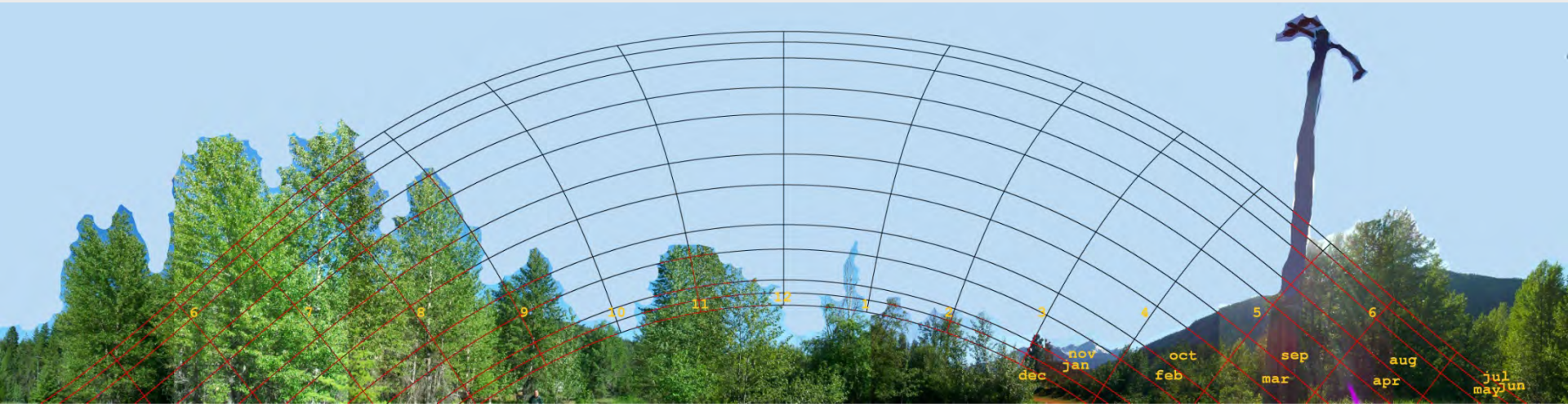


Annual Shading Factor improves to 0.9 for a location score of “Very Good”. About 10% of available energy would be lost to shading by remaining trees to the SE.

There is comparable solar exposure Nov – Jan to location 1 after tree treatments.

Haylmore Heritage Site – Array Location 3

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	42.6	20.4	12.7	13.0	14.0	14.7	14.0	11.7	12.8	16.6	33.8	53.4	21.7
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.23	2.59	4.17	4.88	4.83	4.98	5.1	5.44	4.81	3.16	1.33	0.79	3.61
Shading Factor	0.83												

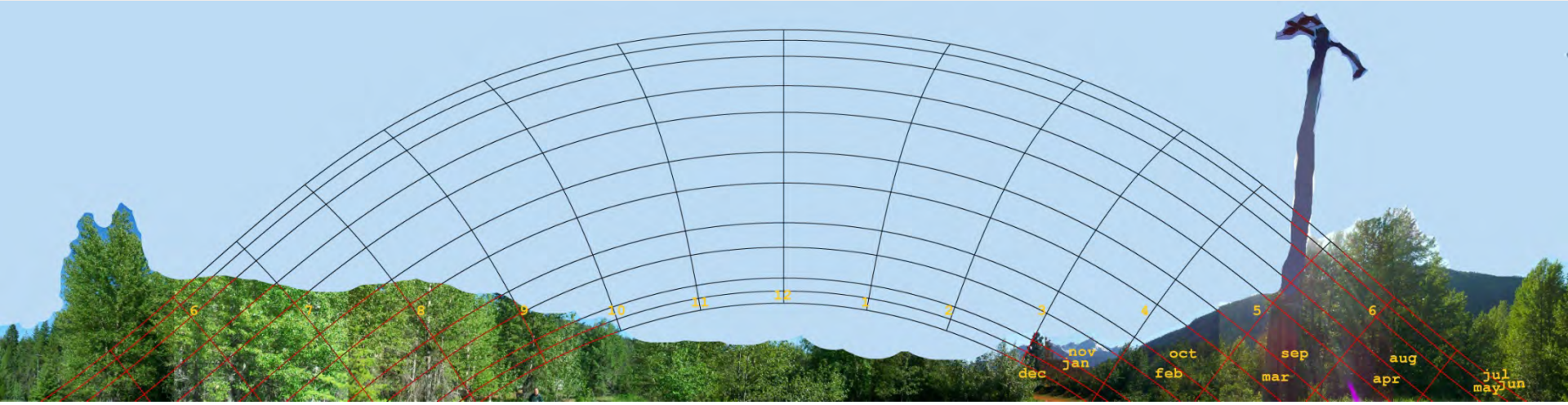


Annual Shading Factor = 0.83 for a location score of “Acceptable”. About 17% of available energy would be lost to shading by trees to the SE and SW.

Should tree topping be possible, improvements will occur.

Haylmore Heritage Site – Array Location 3 (Tree Treatments)

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	20.1	12.4	9.3	5.8	6.5	6.2	6.3	5.2	7.8	11.1	18.3	21.2	10.8
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.7	2.86	4.33	5.28	5.25	5.47	5.55	5.85	5.09	3.37	1.64	1.33	3.98
Shading Factor	0.91												

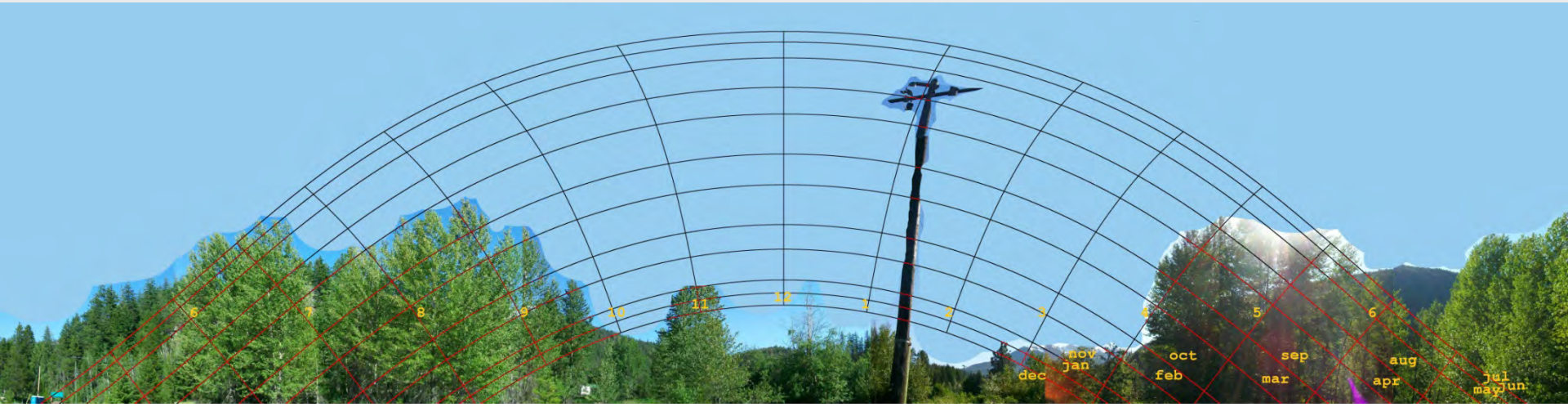


Annual Shading Factor improves to 0.91 for a location score of “Very Good”. About 9% of available energy would be lost to remaining trees.

Winter performance is comparable to site 1 following tree treatments.

Haylmore Heritage Site – Array Location 3a

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	28.0	16.2	18.5	14.6	7.6	5.6	6.0	9.7	18.8	17.9	24.2	32.4	16.6
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.54	2.73	3.88	4.79	5.19	5.51	5.57	5.57	4.49	3.11	1.53	1.14	3.76
Shading Factor	0.86												

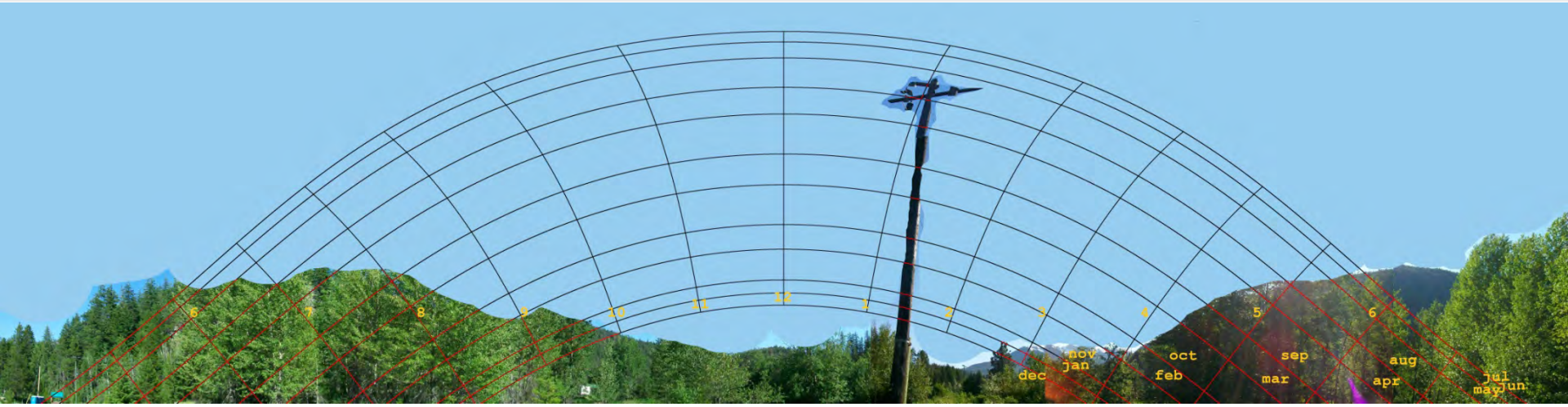


Annual Shading Factor = 0.86 for a location score of “Good”. About 14% of available energy would be lost to shading by trees to the E and W.

Should tree topping be possible, improvements will occur.

Haylmore Heritage Site – Array Location 3a (Tree Treatments)

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	21.7	12.8	11.2	8.8	4.9	3.7	3.7	6.7	10.6	12.1	19.4	24.6	11.7
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.67	2.84	4.23	5.11	5.34	5.62	5.71	5.75	4.94	3.33	1.62	1.27	3.96
Shading Factor	0.91												

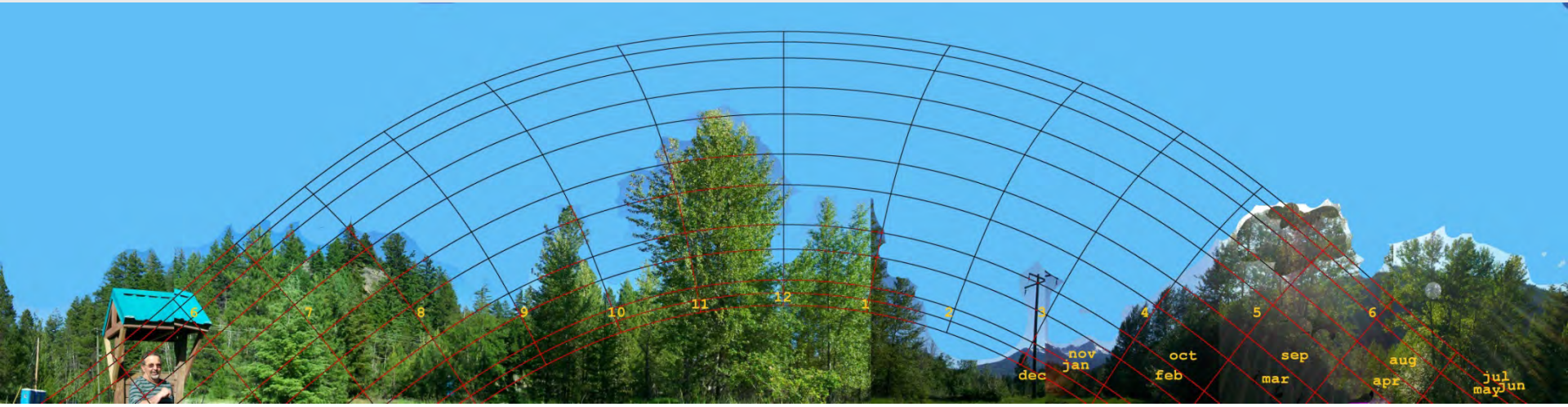


Annual Shading Factor improves to 0.91 for a location score of “Very Good”. About 9% of available energy would be lost to shading by remaining trees and mountain to the W.

Performance is comparable to location 3 following tree treatments.

Haylmore Heritage Site – Array Location 4

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	72.8	45.7	28.6	13.6	9.8	8.1	8.7	10.1	21.2	37.9	68.6	76.7	33.4
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.58	1.77	3.41	4.84	5.07	5.36	5.41	5.54	4.35	2.36	0.63	0.39	3.32
Shading Factor	0.76												

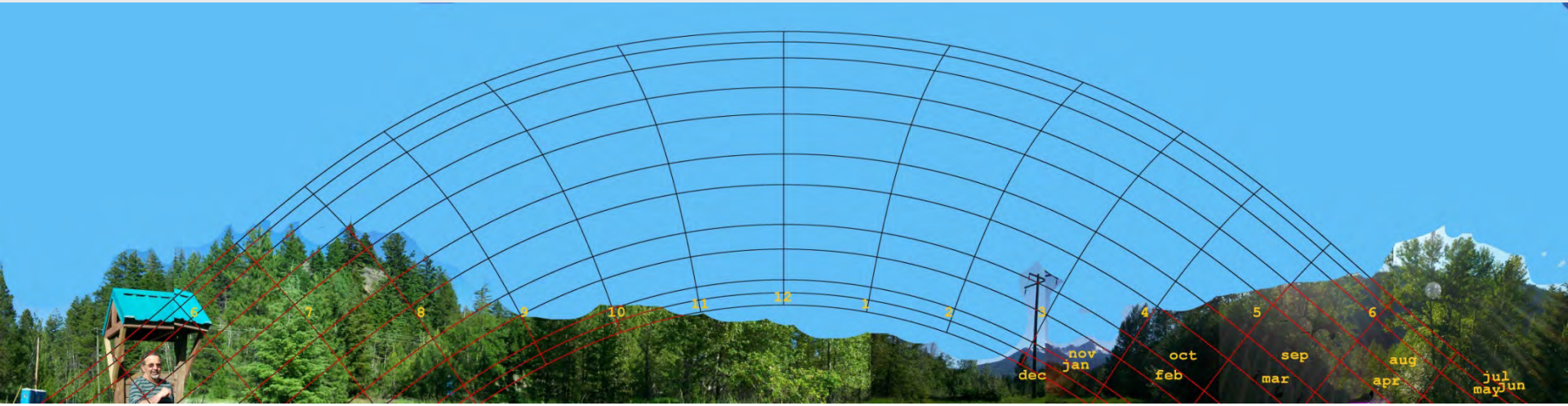


Annual Shading Factor = 0.76 for a location score of “Marginal “. About 24% of available energy would be lost to shading by trees to the SE, S and W.

Should tree topping be possible, improvements will occur.

Haylmore Heritage Site – Array Location 4 (Tree Treatments)

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	28.5	13.4	12.7	10.2	6.6	4.9	5.4	7.5	11.8	13.0	24.5	34.4	14.4
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.53	2.82	4.16	5.03	5.25	5.54	5.61	5.7	4.87	3.3	1.52	1.11	3.88
Shading Factor	0.89												

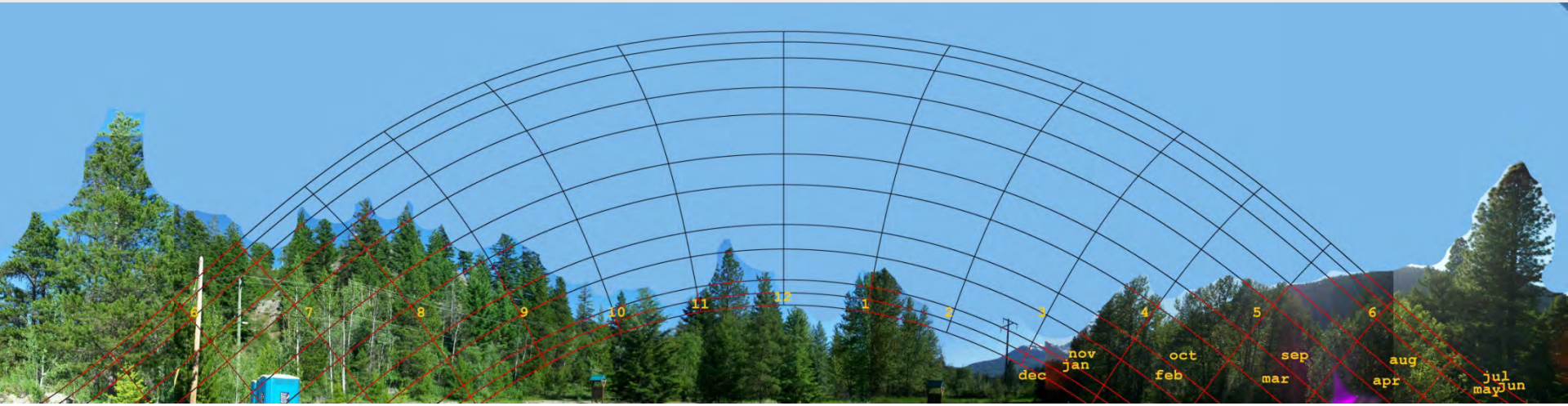


Annual Shading Factor improves to 0.89 for a location score of “Good “. About 11% of available energy would be lost to shading by remaining trees and mountain to the SW.

Performance is slightly reduced over locations 3 and 3a.

Haylmore Heritage Site – Array Location 5

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	53.8	22.4	18.1	13.1	7.4	5.8	5.7	9.4	14.9	21.6	41.7	65.4	23.3
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.99	2.53	3.9	4.87	5.2	5.49	5.59	5.58	4.7	2.98	1.17	0.58	3.64
Shading Factor	0.83												

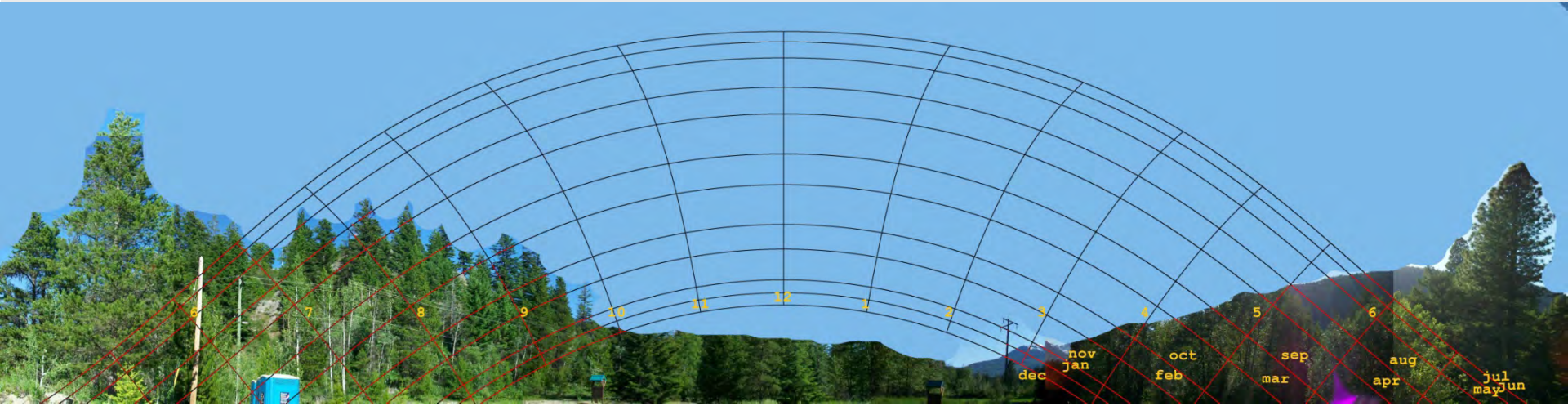


Annual Shading Factor = 0.83 for a location score of “Acceptable “. About 17% of available energy would be lost to shading by trees to the SE through SW.

Should tree topping be possible, improvements will occur.

Haylmore Heritage Site – Array Location 5 (Tree Treatments)

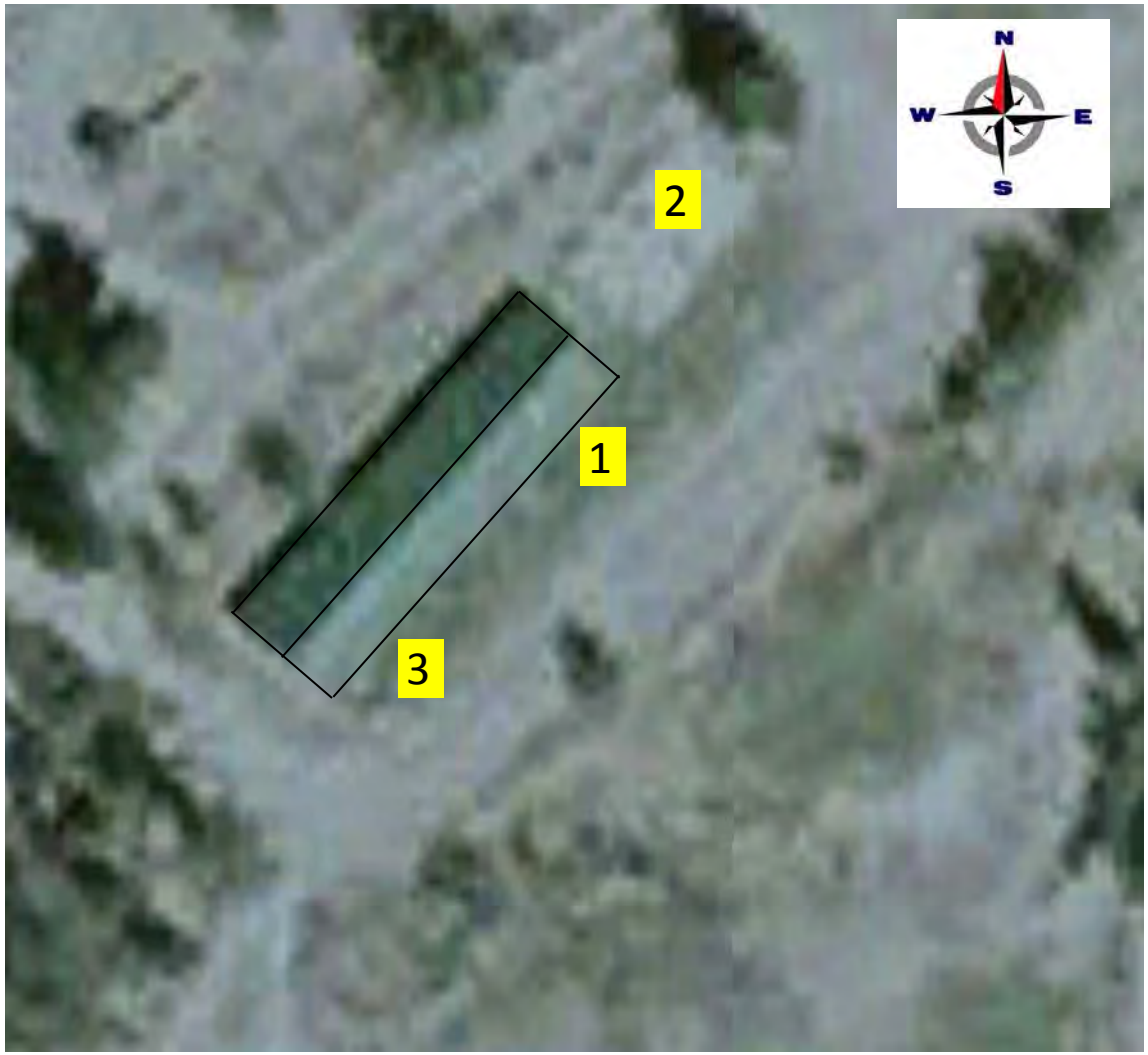
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	21.8	18.5	16.0	12.5	7.4	5.8	5.7	9.2	13.8	19.6	21.1	24.3	14.6
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.67	2.66	4.01	4.9	5.2	5.49	5.59	5.6	4.76	3.05	1.59	1.28	3.82
Shading Factor	0.88												



Annual Shading Factor improves to 0.88 for a location score of “Good “. About 12% of available energy would be lost to shading by remaining trees and mountain to the SW.

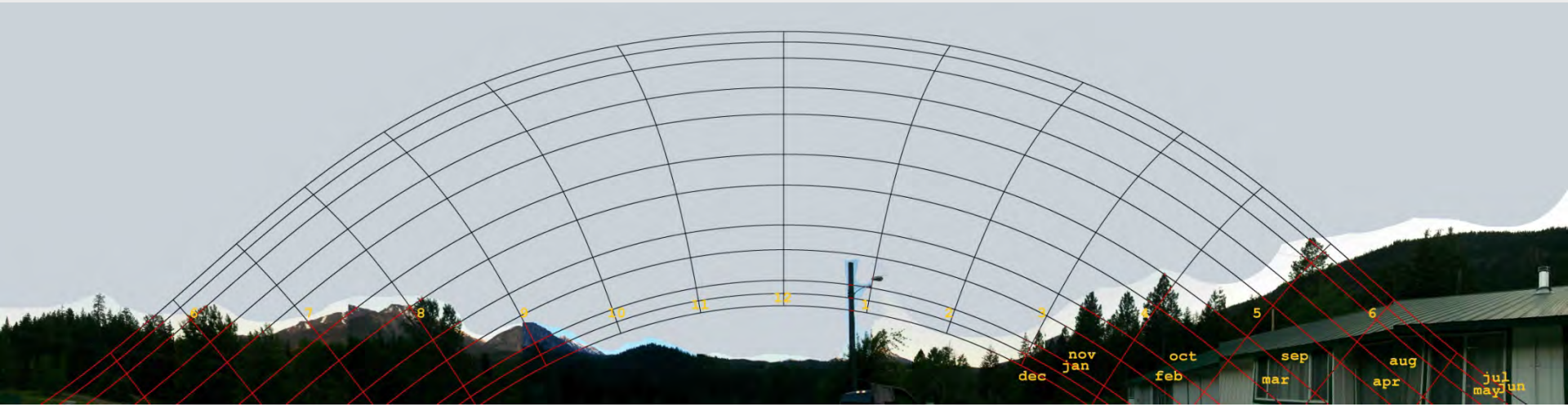
Performance is comparable to location 4.

6. Gold Bridge Community Club – Array Locations Considered



Gold Bridge Community Club – Array Location 1

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	17.6	14.8	11.1	4.6	4.5	3.7	4.2	3.9	7.9	12.8	17.8	18.0	10.0
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.76	2.78	4.24	5.35	5.37	5.61	5.68	5.93	5.09	3.31	1.65	1.38	4.02
Shading Factor	0.92												

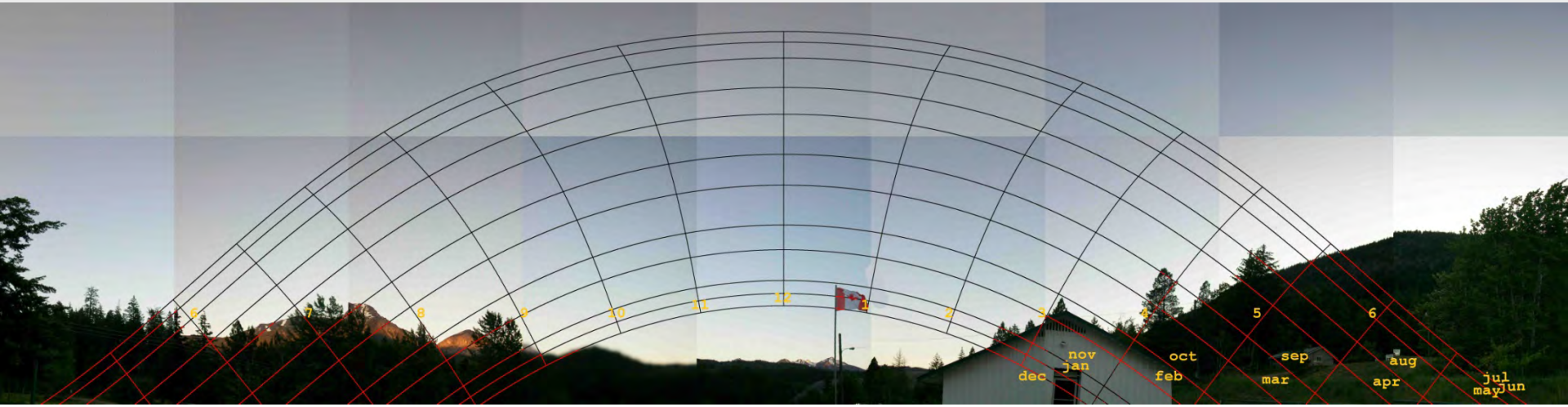


Annual Shading Factor = 0.92 for a location score of “Very Good”. About 8% of available energy would be lost to shading due to hillsides to the SE and SW.

There is unobstructed solar exposure year round resulting in excellent worst case shading of about 18% in Dec.

Gold Bridge Community Club – Array Location 2

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	17.4	12.0	9.1	6.5	4.1	4.2	4.1	4.9	8.5	11.0	14.9	20.9	9.8
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.76	2.87	4.33	5.24	5.39	5.58	5.68	5.86	5.05	3.37	1.71	1.34	4.02
Shading Factor	0.92												

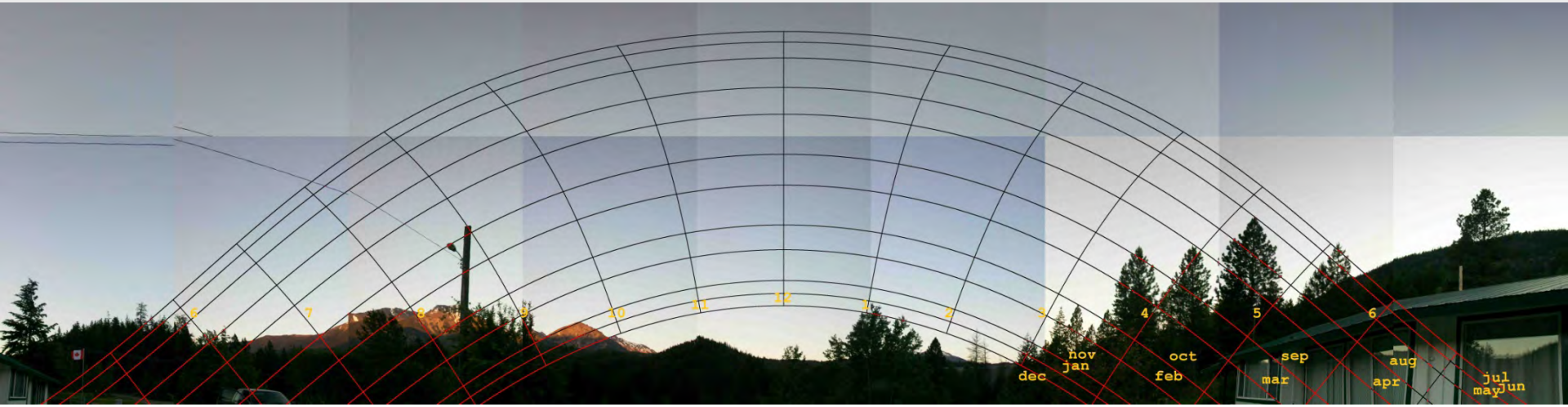


Annual Shading Factor = 0.92 for a location score of “Very Good”. About 8% of available energy would be lost to shading due to hillsides to the SE and SW.

There is unobstructed solar exposure year round resulting in excellent worst case shading of about 21% in Dec.

Gold Bridge Community Club – Array Location 3

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	18.5	14.5	12.7	6.3	3.8	3.4	3.4	4.9	10.0	13.9	16.9	23.6	11.0
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.74	2.79	4.16	5.25	5.41	5.63	5.72	5.87	4.97	3.27	1.67	1.29	3.99
Shading Factor	0.91												



Annual Shading Factor = 0.91 for a location score of “Very Good”. About 9% of available energy would be lost to shading due to hillsides to the SE and trees to the SW.

There is relatively unobstructed solar exposure year round resulting in excellent worst case shading of about 23% in Dec.

7. Gold Bridge Minto Communications Facility – Array Locations Considered

Gold Bridge Minto Communications Facility – Array Location 1

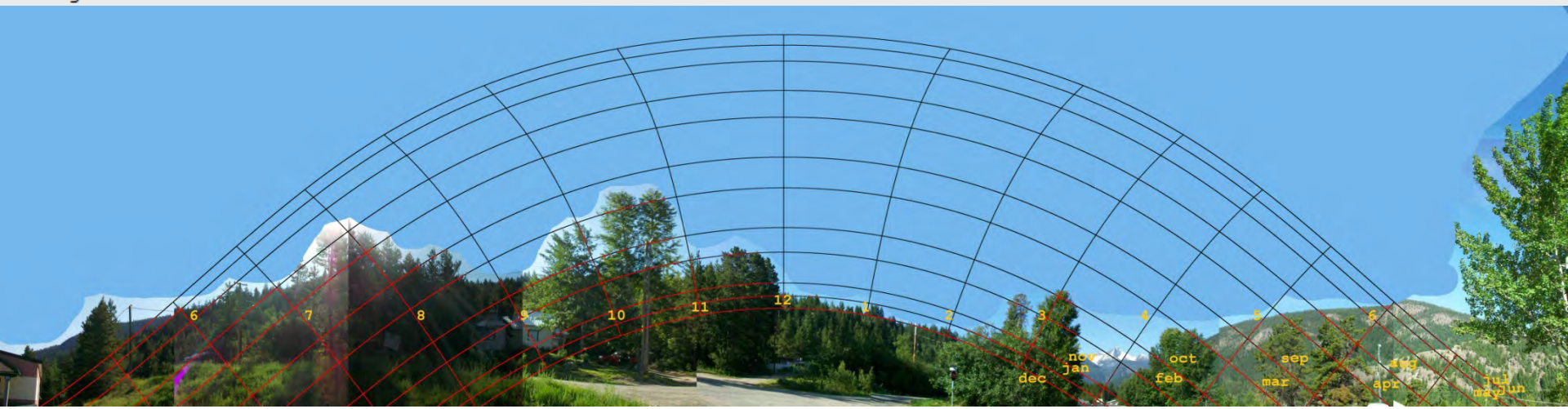
Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	79.2	51.7	40.6	36.0	19.5	5.6	10.7	30.5	37.1	48.9	69.3	89.8	43.2
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.44	1.57	2.83	3.59	4.53	5.51	5.29	4.28	3.47	1.94	0.62	0.17	2.86
Shading Factor	0.66												

Annual Shading Factor = 0.66 for a location score of “Undesirable”. About 34% of available energy would be lost to mostly due to year round shading by trees SE through SW.

This is an extensively shaded location with compromised solar exposure year round. Due to the nature of the location , it is unlikely tree topping would be possible to improve results.

Gold Bridge Minto Communications Facility – Array Location 2

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	71.8	41.2	19.0	8.5	2.7	1.3	1.6	4.7	12.8	32.9	61.0	94.3	29.3
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.6	1.92	3.86	5.13	5.47	5.76	5.84	5.88	4.82	2.55	0.79	0.1	3.56
Shading Factor	0.82												

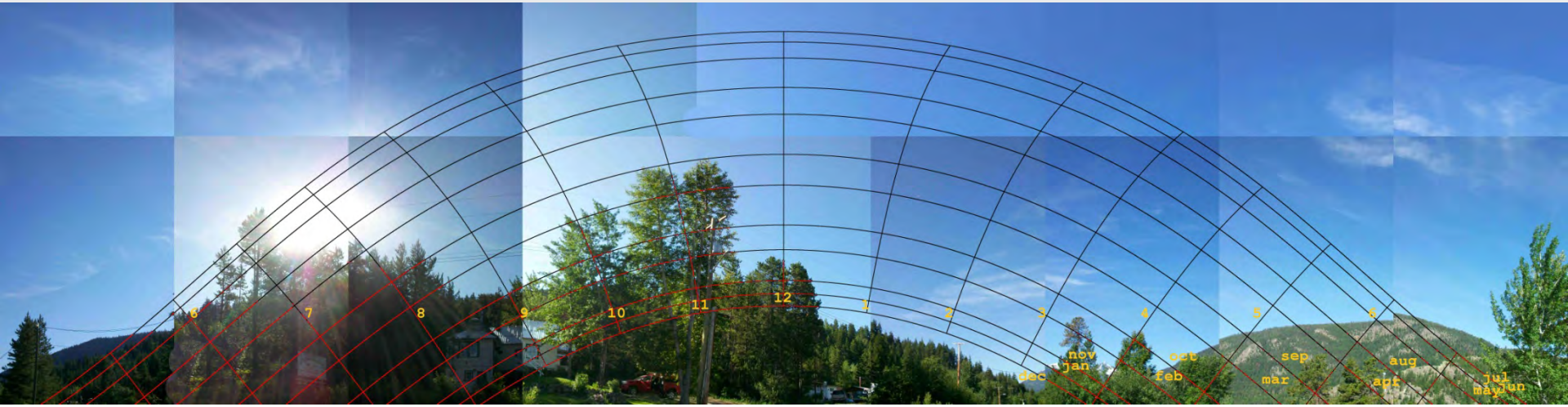


Annual Shading Factor = 0.82 for a location score of “Acceptable”. About 18% of available energy would be lost mostly due to Oct – Mar shading by trees SE.

This is a great improvement over site 1, achievable only by moving North completely across the street from the property in question. Due to the nature of the location , it is unlikely tree topping would be possible to improve results.

Gold Bridge Minto Communications Facility – Array Location 3

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	51.8	32.9	16.9	3.8	1.6	0.8	0.9	1.8	10.7	28.3	49.8	57.2	21.3
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.03	2.19	3.96	5.39	5.53	5.78	5.87	6.05	4.93	2.72	1.01	0.72	3.77
Shading Factor	0.86												



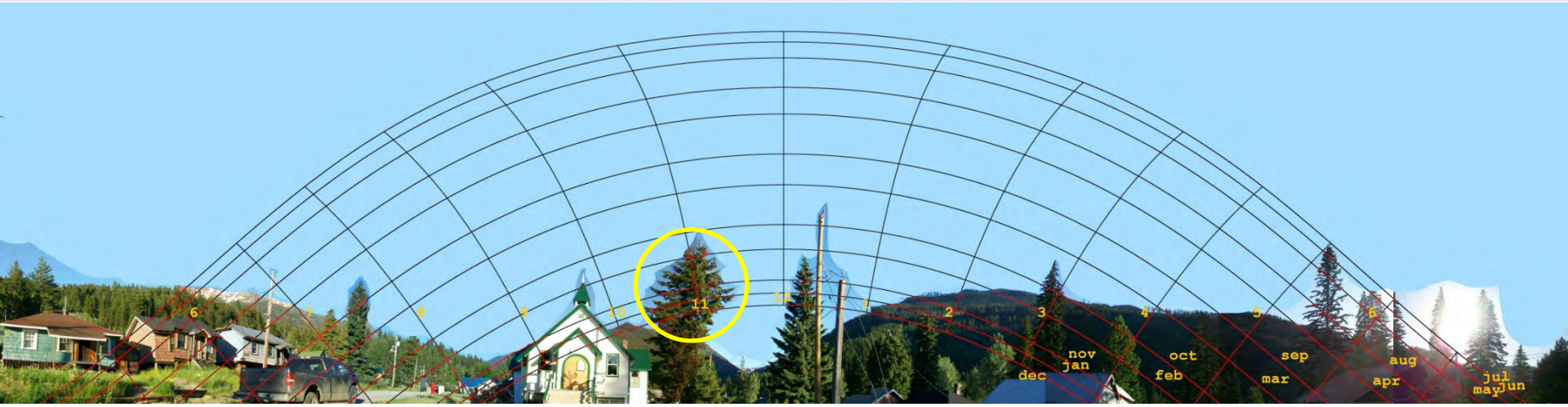
Annual Shading Factor = 0.86 for a location score of “Good”. About 14% of available energy would be lost mostly due to Oct – Mar shading by trees SE.

This is a great improvement over location 1 achievable only by moving North completely across the street from the property in question but not as far as 2. Due to the nature of the location , it is unlikely tree topping would be possible to improve results.

8. Bralorne – Bridge River Community Church Array Locations Considered

Bralorne – Bridge River Community Church Array Location 1

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	58.3	28.2	9.1	3.6	3.0	1.7	2.2	2.7	6.2	15.2	45.4	64.3	20.0
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	0.89	2.34	4.34	5.4	5.45	5.73	5.8	6.0	5.18	3.22	1.1	0.6	3.84
Shading Factor	0.88												

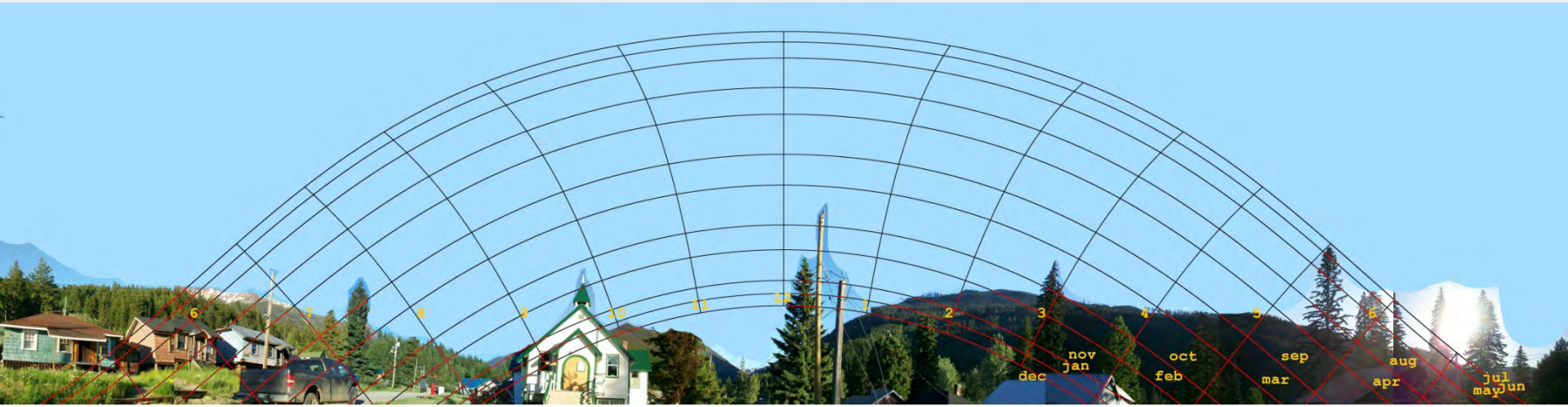


Annual Shading Factor = 0.88 for a location score of “Good”. About 12% of available energy would be lost due to a selected tree on the SW corner of the property and mountains to the SW.

Winter performance Nov – Jan is quite compromised. If tree topping were possible, some improvement would occur.

Bralorne – Bridge River Community Church Array Location 1 (Tree Treatments)

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
Light Shaded %	45.4	23.6	9.1	3.6	3.0	1.7	2.2	2.7	6.2	14.0	33.8	51.5	16.4
Sunlight/Day (Hours)	2.13	3.26	4.77	5.61	5.62	5.83	5.93	6.17	5.52	3.79	2.01	1.69	4.37
Available Sunlight (Hours)	1.17	2.49	4.34	5.4	5.45	5.73	5.8	6.0	5.18	3.26	1.33	0.82	3.92
Shading Factor	0.9												



Annual Shading Factor improves to 0.9 for a location score of “Very Good”. About 10% of available energy would be lost mostly due to mountains to the SW.

Winter performance Nov – Jan is somewhat improved.