

Liberty Quarry Issue Paper
Sky Glow – Temecula and Fallbrook
June 4, 2009

Sky Glow is the term used to refer to the glow in the night sky caused by urban lighting and other outdoor illumination including natural atmospheric and celestial factors. Light pollution is a popular name for sky glow caused by badly directed and/or poorly shielded light sources.

Like most urban areas, the night sky above the cities of Temecula and Fallbrook exhibits sky glow caused by street lighting, flood lights, landscape lighting, display and advertising lights, and other sources. The amount of sky glow generated by these two communities is far larger than the potential for impact from the proposed Liberty Quarry project. In fact, the proposed project would represent a fraction of the combined total sky glow generated by Temecula and Fallbrook.

Together, the cities of Temecula and Fallbrook will generate 90,775,500 lumens in 2020¹, the year the proposed Liberty Quarry project is projected to reach full operations. The Liberty Quarry project estimate is far below the amount of sky glow of the urban area on either side.

Environmental consultants CH2M Hill calculated an estimated number of lumens that the proposed Liberty Quarry would contribute to the night sky². The maximum number of lumens comes to about 2.3% of the combined total of the lumens contributed by Temecula and Fallbrook in the year 2020 when Liberty Quarry is fully operational.

Liberty Quarry will have no mining between 10 p.m. and 7 a.m. and there will be no operation of the aggregate plant between midnight and 4 a.m. So, in stark contrast to the already existing urban sky glow that lasts throughout the night time hours, the potential for light impacts from Liberty Quarry will occur only for a small portion of the evening.

In addition, the Liberty Quarry Draft Environmental Impact Report concluded that the project will not create any significant adverse lighting impacts. However, the project will incorporate several light reduction measures that will even further reduce the potential for lighting impacts and further insure that the project will create no significant lighting impacts.

According to Walker's Law estimating that urban Sky Glow rates sky are in the range of 500 to 1000 lumens per capita, the assumptions above are on the conservative side of the spectrum. The Sky Glow from Temecula and Fallbrook and the percentage of the total lumens contributed by Liberty Quarry could be even less than 2%.

The Palomar Observatory, California Institute of Technology review of the proposed project concluded that the outdoor lighting proposed does confirm with the requirements of the light and night sky ordinances of both San Diego and Riverside Counties. This helps to preserve dark skies, allowing the observatory to continue its astronomical research, according to the September 2007 comment letter submitted by Palomar University.

¹ 2020 lumens calculated using projected population data from CA Dept of Finance 1/1/2009 and SANDAG 1/1/2008

² Walker's Law estimates urban areas contribute light to the sky at a rate of 500 to 1000 lumens per capita