

EG Fire Station Lighting Concerns

**Presented to Midcoast Community Council
May 12, 2021**

Dan Haggerty
Jill Grant

El Granada resident and member of Midcoast Community Council
El Granada resident and member of Midcoast Community Council



International Dark Sky Association

American Medical Association

Illuminating Engineering Society

National Audubon Society

American Astronomical Society

Sierra Club

All have strong positions on light pollution



from:
Smart Outdoor Lighting Alliance

What is Obtrusive Light?



Glare

Glare occurs when a poorly designed or installed lighting fixture directs a large percentage of the total light into your eyes instead of the intended target, like the road or sidewalk. There is no excuse for glare, period. It is clear evidence of poor lighting design and often a by-product of “lighting by the numbers” or “lighting on the cheap.” When a lighting installation is only concerned with meeting a lighting standard that specifies the quantity and uniformity ratio of lighting, the “designer” may choose to save costs by increasing the distance between fixtures. This in turn reduces the number of poles needed, substantially reducing overall costs.

However to do this the “designer” may use fixtures that direct light at much higher angles. Instead of improving visibility, this glare vastly degrades our ability to see and, in some cases, can cause accidents by blinding a driver or pedestrian.

<https://volt.org/obtrusive-light/>



International Dark Sky Association Policy Update

January 28, 2021

- The correlated color temperature of lighting used in most outdoor applications should not exceed 2200K.
- Where light with a larger fractional emission of short wavelengths is desired, it should be carefully controlled through stringent application of the other Lighting Principles, such as...
 - Lower intensity
 - Careful targeting
 - Reduced operation time

<https://www.darksky.org/values-centered-lighting-resolution/>

Statement on CCT & Short Wavelength (Blue light)

With the advent of the LED, International Dark Sky Association (IDA) is concerned about the potential negative effects of blue-rich white light, even from fixtures with proper shielding. In 2010, IDA published a white paper outlining the potential hazards of blue-rich white light sources. Since then, the scientific evidence has solidified around its conclusions.

The case against blue light is well founded with regard to discomfort, glare, circadian rhythm disruption, light scattering, skyglow, and biological system disruption in wildlife. Outdoor lighting with high blue light content is more likely to contribute to light pollution because it has a significantly larger geographic reach than lighting with less blue light. In natural settings, blue light at night has been shown to adversely affect wildlife behavior and reproduction. This is true even in cities, which are often stopover points for migratory species.

<https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/>

**Illuminating Engineering Society
and International Dark-Sky Association
Unanimously Join Forces
to Protect the Night Sky**

**They Developed
Five Principles for
Responsible Outdoor Lighting**

<https://www.darksky.org/joining-forces-to-protect-the-night-from-light-pollution/>

LIGHT TO PROTECT THE NIGHT

Five Principles for Responsible Outdoor Lighting



Illuminating
ENGINEERING SOCIETY



USEFUL



ALL LIGHT SHOULD HAVE A CLEAR PURPOSE

Before installing or replacing a light, determine if light is needed. Consider how the use of light will impact the area, including wildlife and the environment. Consider using reflective paints or self-luminous markers for signs, curbs, and steps to reduce the need for permanently installed outdoor lighting.

TARGETED



LIGHT SHOULD BE DIRECTED ONLY TO WHERE NEEDED

Use shielding and careful aiming to target the direction of the light beam so that it points downward and does not spill beyond where it is needed.

LOW LIGHT LEVELS



LIGHT SHOULD BE NO BRIGHTER THAN NECESSARY

Use the lowest light level required. Be mindful of surface conditions as some surfaces may reflect more light into the night sky than intended.

CONTROLLED



LIGHT SHOULD BE USED ONLY WHEN IT IS USEFUL

Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.

COLOR



USE WARMER COLOR LIGHTS WHERE POSSIBLE

Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.

Safety

How much light is needed to be safe?

Color Rendition Index

(the measurement of how colors look under a light source when compared with sunlight)

Warmer Color Fixtures are now available with a very high CRI rating of 70 and above.

The justification Cal Fire gave for not using a warmer color is to distinguish fluid colors on their trucks. Again, there are now warm color fixtures with very high CRI values. They can also, use spot flashlights, drive into the garage, or wait until the next day. There is no reason the lights need to be on all night long.

So What happened?

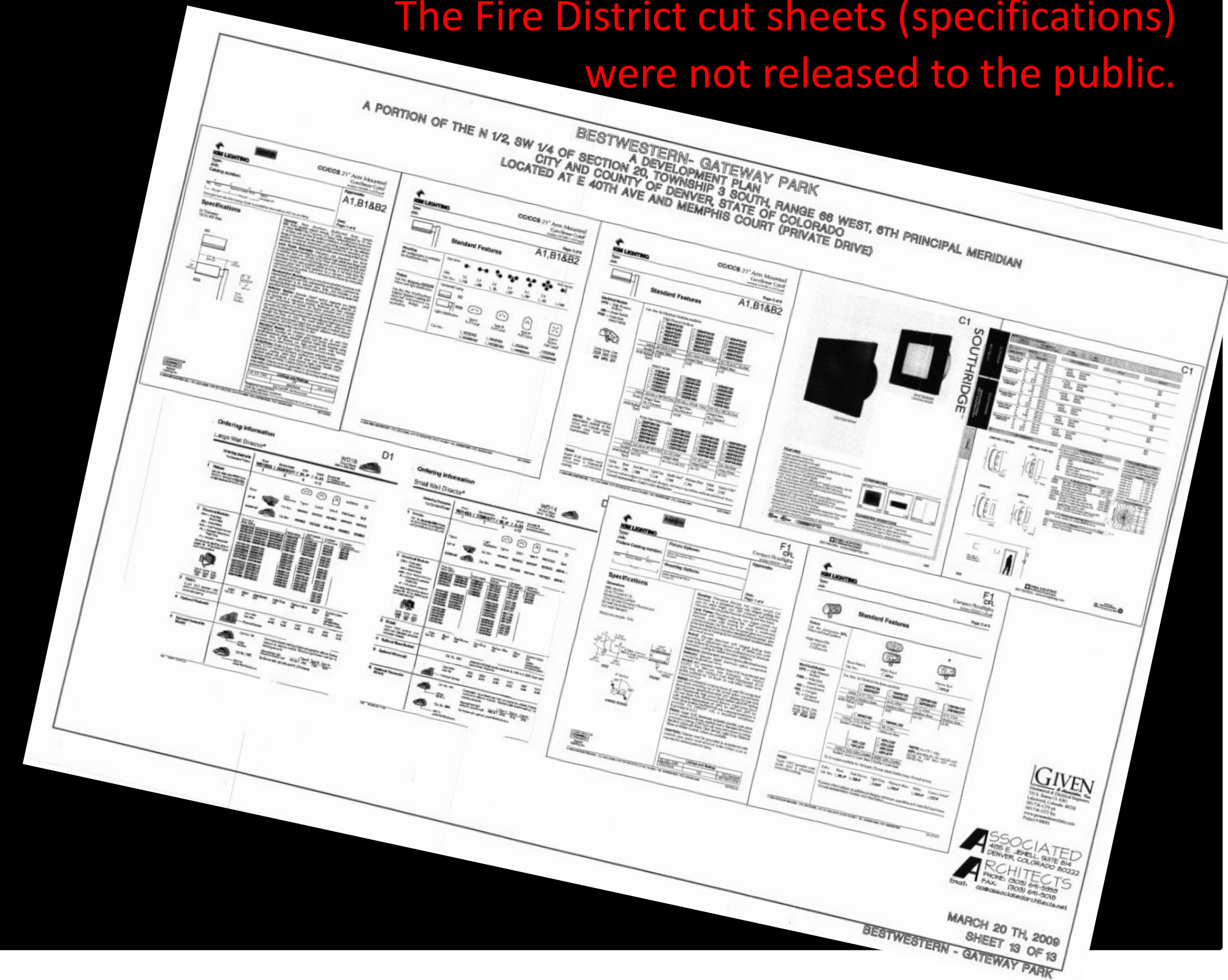
Our Local Coastal Program has policies to ensure that lighting does not detract from the natural, open space or visual qualities of the area and be limited to the minimum necessary for safety.

During CEQA comments from residents prior to construction found that neighbors were concerned lighting would be a significant change, with one resident writing that “backyard stargazing would no longer be an option” as the view facing the west/southwest, once previously “nice and dark,” would be significantly impacted by the lighting of this project.

The Final Environmental Impact Report (FEIR) agreed with these comments from residents but stated that these impacts would be lessened because the project would undergo design review by the San Mateo County Planning Commission for conformance with all policies of the San Mateo County LCP.

The County’s post-installation design review was not in conformance with their own conditions or with policies in the LCP

The Fire District cut sheets (specifications) were not released to the public.



Is this the new standard?

Will other Coastside Fire Stations adopt this bright lighting?

Moss Beach Fire Station #44
(501 Stetson St.)

Minimal Lighting
No lights in the view corridor



Half Moon Bay Fire Station #40
(1191 Main Street)

Minimal Lighting
No lights in the view corridor



Why not model lights after HMB?

Bigger station but less lights

- Headquarters with training facility
- More than twice the acreage of E.G. Station #41
- Less than $\frac{1}{2}$ the pole lights spaced ~100 feet apart.
- Decorative 4-foot amber lit bollards along walkway - spaced 10 feet apart
- Larger engine bay with NO exterior lighting



KIMLIGHTING®

UR20

ARCHITECTURAL AREA/SITE

FEATURES

- 20" size in post top, pole and wall mount
- High performance optics up to 17,000 delivered lumens
- Elegant form factor
- Diffusion lens option
- SiteSync™ wireless control options
- UL/cUL listed for wet locations, IP66 and 4G/1.5G vibration rated



3000K and warmer CCTs only



See Certification Specifications

DATE:

LOCATION:

TYPE:

PROJECT:

CATALOG #:

Ouro™



Ouro Post Top

Any Questions?