Appendix G

Lighting Standards

Red Ridge Village PUD

Objective

The lighting framework for Red Ridge Village is intended to maintain nighttime darkness consistent with recognized dark-sky principles. The goal is to provide only the illumination necessary for safety, wayfinding, and essential nighttime use while minimizing skyglow, light trespass, and ecological disturbance. All phases of development will use lighting that is targeted, shielded, warm-spectrum, and limited in duration, with particular attention paid to nearby wildlife habitat and sensitive environmental areas.

General Requirements

Red Ridge Village will incorporate dark-sky–compliant lighting in all public areas and require compliant fixtures on all buildings and sites. Outdoor lighting will:

- be limited to the minimum illumination required for safety and functionality,
- utilize fully shielded fixtures with no uplight (BUG rating U0 or equivalent),
- be directed only to intended areas and not beyond property boundaries, and
- use warmer color temperatures whenever feasible.

Lighting will only be permitted for:

- building and garage entrances,
- pathways and walkways,
- parking areas and access lanes,
- gathering, recreation, and common-use areas, and
- signage illumination required for visibility or identification.

A limited administrative modification process may authorize deviations when necessary for safety or functional requirements. Any modification must demonstrate that there is no feasible alternative that meets both safety and dark-sky intent while still being overall consistent with the overall objective of preserving nighttime darkness.

Submittal Requirements

Each phase will include a lighting plan that provides:

- A site diagram showing fixture locations, types, and mounting heights.
- Manufacturer documents confirming full shielding and BUG U0 (or equivalent).

- A description of intended light distribution and measures to avoid spill or glare.
- A qualitative wildlife lighting assessment identifying sensitive areas and planned mitigation.

Numeric photometrics may be requested by Valley County only if necessary to verify compliance.

Fixture Performance Standards

Performance standards are based on national standards in order to comply with Valley County standards and help to achieve Valley County's goal to become a Dark Skies Preserve. These requirements include:

- Preventing upward lighting
- Light escape beyond property lines
- Glare prevention for enhanced visibility
- Wildlife safe light spectrum and fixture placement

Shielding and Distribution

All outdoor fixtures shall be fully shielded and mounted to prevent any light above the horizontal plane. Accent and landscape lighting shall be directed downward or at shallow downward angles; uplighting is discouraged and may only be approved when impacts are fully mitigated.

Figure 1. Accent lighting examples. From International Dark Sky Assn

Correlated Color Temperature (CCT)

The following CCT standards will be adhered:

- Maximum **3000K** in village center or higher-activity nonresidential areas.
- Maximum **2700K** in residential areas.
- Maximum **2200K** in environmentally sensitive or wildlife-oriented areas.

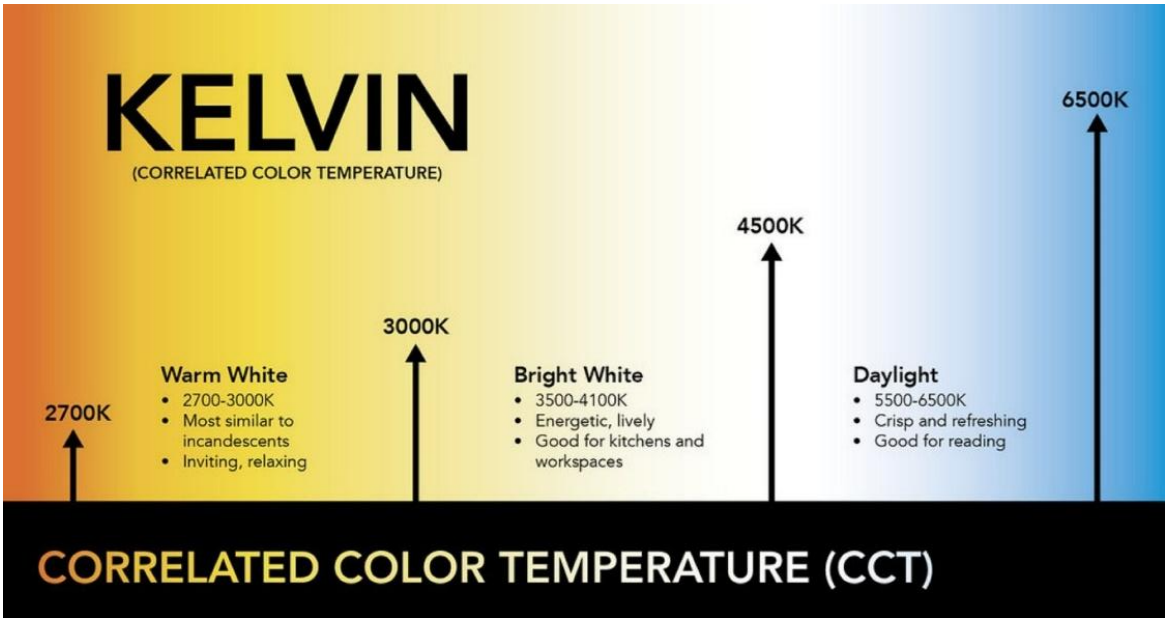

Figure 2. Kelvin scale (CCT) examples. From International Dark Sky Assn

Mounting Heights

Mounting heights shall be minimized relative to the surrounding use: In residential areas, the typical height will be 12-14 feet. For non-residential and village center areas, this will be raised to 14-18 feet. Heights may be adjusted where necessary for safety or site functionality.

Lumen Management

Lighting designs will use the lowest practical output. Task-based illumination will be favored over broad or uniform lighting and footcandle and lumen limits may be refined at later phases as needed.

Time-Based Controls

Security Lighting

Security lighting will:

- be motion-activated,
- be shut off within or before 15 minutes of activation,
- be shielded and aimed to avoid illumination beyond the property boundary,
- and be calibrated to avoid repetitive activation by wildlife or wind.

Operational Curfews

The following standards will be applied:

- nonresidential establishments shall turn off all outdoor lighting except essential safety lighting (entrances, circulation, required parking illumination) within one hour after closing;
- recreational amenity areas shall turn off lighting one hour after dusk or after the final event, whichever is later, until 6:00 a.m; and
- multi-family and single-family residential lighting shall be limited to essential safety and gathering-related lighting between one hour after dusk and 6:00 a.m.

Adaptive Controls

Dimmers, timers, or motion controls will be used where appropriate and decorative / accent lighting will not remain on overnight.

Accent and Feature Lighting

Accent lighting, when used, will comply with the following:

- mounted only on building facades visible from rights-of-way or common area,
- fully shielded such that the light source is not visible beyond the property boundary,
- directed only at the surface being illuminated and not into the night sky, and
- landscape lighting, when permitted, shall be aimed below the horizontal plane and limited in output and duration.

If signage illumination is used, it will be lit with downward-directed fixtures and follow, as practical, the same curfew timing as other nonessential lighting.

Property Line and Off-site Impact Controls

Lighting will be designed to prevent glare onto adjacent parcels, roads, or open lands. This will be accomplished primarily through shielding and placement. Given wide buffer areas

(100’ minimum) to roads and adjacent properties, no measurable off-site light trespass is anticipated; if conditions warrant, lower thresholds may be applied for specific areas and phases to minimize disturbance.

Property Line and Off-site Impact Controls

All lighting within Red Ridge Village will be wildlife-compliant and designed to protect the site’s ecological function. Excessive nighttime lighting disrupts habitat for native and migratory species year-round.

Each phase-level lighting plan will:

Identify Sensitive Areas

This includes, but is not limited to migratory pathways, bedding or foraging habitat, bat roost locations near site entries, and validated animal movement corridors or connectivity zones.

Apply Mitigation Practices

These practices may include, but are not limited to prohibiting or restricting lighting within known wildlife pathways, limiting lighting near bat habitat and reducing blue-rich wavelengths, minimizing lighting in foraging areas and maintain very warm CCT, and reducing nighttime light levels seasonally during migration or breeding windows.

Avoid Attraction and Disorientation

Best practices include strictly limiting upward light leakage to reduce attraction of migratory birds, and use shielding and warm spectrum lighting in areas near roosting habitat.

Construction Lighting

Temporary construction lighting will be used only when necessary for safety or active nighttime operations, be fully shielded when feasible, and not remain illuminated overnight except for essential security or safety lighting.