

3.12 Light and Glare

Adverse impacts of light and glare are, in most cases, the result of an increase in ambient light levels at various locations near the source of the light, or a visual impact created by a new light source in areas that were previously not illuminated – as seen from a distant location. For example, locations near a light source may be impacted by glare if bright lights are used at the source. Or, locations distant from a light source may experience altered views due to glare in the night sky.

AFFECTED ENVIRONMENT

The City Heights property is currently undeveloped. It lies on and above a 100-foot high slope oriented parallel to the existing incorporated area of the City of Cle Elum, and parallel to the Interstate 90 corridor and Yakima River channel further south (see Figure 3.8-1). As former managed forest land, the vegetative cover of the site consists of thinned and logged forest as well as open, maintained meadow areas beneath two power line corridors. Topography within the project area is generally rolling in nature, with some steeper slopes in stream corridors and at the location of coal slag and waste rock piles on the property. One unpaved and two paved roads pass through the site in a north-south orientation, providing access to properties further north. The headlights of vehicles using these roads are visible at times. Numerous dirt roads and trails also meander through the property (maintenance roads in the power line corridors, and former logging roads now used by all-terrain vehicles). As there is no development on the City Heights property at the present time, there are no existing sources of light or glare on, or emitting from, the site. There is the potential for maintenance vehicles to travel along the power line access roads on the site during evening or nighttime hours. This could result in light from headlights or spotlights. However, nighttime maintenance activity is not likely, and is not presently known to occur.

Land uses adjacent to the City Heights site include the Cle Elum-Roslyn School District complex, City of Cle Elum water treatment plant, Puget Sound Energy electrical substation, and future business park development within the Suncadia-Bullfrog Incorporated Area across from the west end of the site (south of SR 903); a solid waste transfer and recycling station, and City of Roslyn former sewage lagoons directly to the west (north of SR 903); Puget Sound Energy (PSE) and Bonneville Power Administration (BPA) electrical transmission line corridors along the north boundary of the site and diagonally through the eastern portion of the property; rural residential and vacant lands to the north; and suburban residential development within the City of Cle Elum adjacent to the south boundary of the site.

Sources of light visible from the City Heights property at the present time include the “sky glow” of downtown Cle Elum and South Cle Elum, the headlights of vehicles traveling on Interstate 90, and nighttime lighting associated with residential development across the valley (south of Interstate 90).

POTENTIAL IMPACTS DURING CONSTRUCTION

Regardless of which conceptual land use alternative is selected for implementation, it is likely that existing area residents would observe temporary sources of light and glare on construction sites within the City Heights property during site development. Sources of lighting may include nighttime security lighting, or illumination from the headlights of vehicles or construction equipment during early morning or late afternoon hours. Potential sources of glare may include reflections from vehicle windshields, and from plastic used to cover stockpiles and stored construction material. Nighttime lighting associated with construction activity (if any) could also temporarily affect wildlife.

Full build-out of any of the conceptual land use alternatives would include development of additional residential neighborhoods, streets, and neighborhood commercial areas. Areas illuminated during later

phases of construction on the City Heights site would potentially be seen from established neighborhoods or commercial areas within the project, as well as from off-site locations.

Under the No Action Alternative, there would be no construction on the City Heights site in the near-term, and thus no construction-related light or glare.

POTENTIAL DEVELOPED-CONDITION IMPACTS

Site planning for the City Heights Planned Mixed-Use development was in a conceptual phase at the time of this writing. Alternative land use plans schematically depict possible locations and features of various elements of the project that likely will produce light and glare, such as residential neighborhoods, commercial areas, and street corridors. No final determinations had been made at the time of this writing as to the specific layout or size of various built features, the type and size of lighting fixtures, or landscape plantings to be used for screening. Consequently, the light and glare impact analysis is qualitative and somewhat generalized.

Development of any of the conceptual land use alternatives would introduce a substantial number of new sources of light and possible sources of glare that would be generated from several different sources. Lighting from new residences (interior and exterior lights); neighborhood commercial areas; street lights; windows and vehicle windshields; the lights of vehicles traveling on collector roads and residential access roads; and pedestrian-oriented lighting along sidewalks and in public amenity areas may contribute to a combination of light and glare throughout the City Heights development. These effects would likely be most visible from across the valley (south of the Yakima River). The proposal to retain an existing natural buffer (20 to 80 feet in width) along much of the south boundary of the site, with development set back from the top of the slope in many areas, should minimize light and glare effects in existing residential neighborhoods down-slope from the City Heights development. Areas with higher residential densities and nodes of neighborhood commercial development are proposed to be centrally-located on the upper plateau, furthest from existing single-family home neighborhoods (see Figures 2.6-1 through 2.6-3 in Draft EIS Chapter 2). New or extended roads for access to the site would result in increased light from vehicles traveling at night on these roads.

Over the 6- to 12-year build-out of the City Heights development, there would be an increase in nighttime sky glow associated with increasing urbanization of the site and within the City of Cle Elum as a whole.

There would be no new sources of light or glare on the site under the No Action Alternative if no development were to occur on the property at this time. Existing sources include lights and potential reflection from all-terrain vehicles that use the site for recreation, and from electrical transmission line maintenance vehicles.

MITIGATION MEASURES

Mitigation Measures Included in the Development Proposal. The City Heights conceptual land use plans do not yet describe a lighting proposal. These would be evaluated during review of site-specific development proposals. The applicant proposes to minimize the amount of glare, light trespass and sky glow generated by lighting from residential neighborhoods, commercial areas, vehicular and pedestrian corridors through a combination of measures. Representative measures may include:

- State-of-the-art lighting system components and controls used for maximum efficiency and effect.
- Light fixture shielding systems to emit light down to areas intended to be illuminated, and not into surrounding areas of the community.

- Use of lighting design principles that focus on appropriate selection of fixtures, levels of lighting, and mounting heights to limit “light spillage” off-site.
- Appropriate selection of painted or treated surfaces for standards and fixtures to minimize the amount of reflected light glare generated.
- Preserving a perimeter buffer of existing vegetation to the extent practicable, and restoring cleared areas with landscape plantings to provide visual screening where needed.

Applicable Regulations. The Cle Elum Municipal Code and the Development Agreement to be negotiated between the City and the project proponent will address lighting requirements with the intent to ensure efficient, aesthetically-pleasing, and non-intrusive lighting throughout the City Heights development. Submittal requirements for Planned Mixed-Use development approval include a lighting plan that provides sufficient illumination without significantly diminishing the ambient darkness of the rural setting (CEMC Chapter 17.45):

- Outdoor lighting shall be designed so as not to direct light and/or glare on public roadways and/or neighboring properties.
- All outdoor lighting shall be full cut-off with the light fully shielded to reduce unnecessary light and glare.
- No lighting shall exceed a level of 30 (thirty) footcandles.

Other Recommended Mitigation Measures. The following list provides additional guidelines that could be followed for the design and implementation of lighting standards that would minimize impacts of light and glare on residents of the City Heights development and other area residents.

- Street lighting provided for vehicular and pedestrian circulation should meet standards equal to or greater than those typically required by the City of Cle Elum.
- Lighting for building exteriors, parking lots, and all vehicular and pedestrian circulation should be designed with sensitivity to surrounding and/or adjacent neighborhoods.
- Street lighting standards should not exceed a maximum height, to minimize light spillage and light trespass (e.g., light standards in residential areas should not exceed 35 feet in height).
- Street light bulbs should be selected for longevity to minimize maintenance requirements and replacement expense. Current technology examples include light-emitting diode (LED) or compact fluorescent (CFL).
- Walkway and trail lighting should have a maximum height of 15 feet; use of bollard or ground lighting could be an alternative to lighting on poles.
- No up-lighting of environmental features or building facades should be allowed.
- Landscape features such as street trees could be incorporated in neighborhood streetscapes to diffuse light and glare.

If construction is limited to daytime hours, this would also have the secondary effect of limiting nighttime illumination on the site during project development.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Development of the City Heights Planned Mixed-Use development under any of the conceptual land use alternatives would substantially increase the amount of light and potential sources of glare on the

property. The impact of this change likely would be interpreted differently by different observers, with some objecting to the increase in light and glare where there was little or none before. Others may be accepting of this effect associated with growth and increased vitality in the community, provided it is implemented with as much sensitivity to the surrounding environment as practicable. The City Heights property is within the City of Cle Elum Urban Growth Area and thus is anticipated to develop as an urban neighborhood, whether at this time or in the foreseeable future.