



MEMORANDUM

**TO:** Deschutes County Board of Commissioners

**FROM:** Tarik Rawlings, Associate Planner  
Will Groves, Planning Manager

**DATE:** January 23, 2023

**SUBJECT:** Deschutes County Outdoor Lighting Ordinance / Direction

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**I. DIRECTION**

Staff is seeking direction from the Board of County Commissioners (Board) on the next steps for revisiting the County's Outdoor Lighting Control Ordinance. Options that are available include:

1. Initiating amendments to Deschutes County Code (DCC) Chapter 15.10, Outdoor Lighting Control
2. Disseminating education materials (downward shielding focus)
3. Reconvening a panel to discuss amending DCC Chapter 15.10
4. Other

**II. COORDINATION EFFORTS TO DATE**

Since November 2021, both the Board and Planning Commission have expressed support for revisiting DCC Chapter 15.10 (**Attachment 1**)<sup>1</sup>. In January 2022, the Planning Commission reviewed information related to this section of code and directed staff to assemble an 8-person panel reflecting varying perspectives related to dark skies and outdoor lighting. One month later, a panel was convened and discussed the importance of dark sky best practices and the increases of light pollution in the region from approximately 2012-2020 (**Attachment 2**)<sup>2</sup>. Later in February, the Planning Commission made a motion to the Board to:

1. Update DCC Chapter 15.10; and
2. Explore an educational campaign related to dark skies best practices.

In April, the Board directed staff to pursue dark skies best practices and potential goals and policies as part of the Deschutes County 2040 Comprehensive Plan Update process. In October, during a CDD FY 2022-23 Planning Division Work Plan Update, the Board expressed support for revisiting DCC Chapter

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<sup>1</sup> The Community Development Department (CDD) FY 2021-2022 and 2022-2023 Work Plans identify updating the Deschutes County Outdoor Lighting Control Ordinance.

<sup>2</sup> <https://www.deschutes.org/bc-pc/page/planning-commission-9>

15.10 as a standalone work item, emphasizing educational outreach efforts rather than code enforcement responses.

### III. CHAPTER 15.10, OUTDOOR LIGHTING CONTROL

DCC Chapter 15.10 was adopted in 1994 and continues to receive recognition today especially as advocates build support behind dark skies best practices.<sup>3</sup> The code requires:

- All private and commercial outdoor lighting fixtures installed after August 10, 1994 or replacing a fixture installed before that date 120 or brighter watt incandescent bulb (1,800 lumens) located in the unincorporated areas must be shielded by design or modification that directs light downward, and must limit direct line-of-sight of the fixture's lamp to the property on which the fixture is installed.

It offers examples of compliant shielding and fixture designs and specifies that shielding apply to all permanent fixtures. DCC Chapter 15.10 also provides exemptions for:

- Airport and aircraft operations
- Correctional Institutions
- Holiday lighting not to exceed 45 days
- Temporary lighting for carnivals and fairs
- Public safety at historical sights
- Motion-sensitive lights which shine for not longer than 20 minutes.
- Top-mounted lighting of US flags
- Internally lit advertising signs
- Television or film productions
- Customary agricultural practices
- Construction for an allowed use

### IV. LIMITATIONS OF AMENDING DCC CHAPTER 15.10

#### Building Safety Capacity

The Building Safety Division administers and implements state building codes. Plans examiners and building inspectors do not have the capacity to review or inspect outdoor lighting fixtures through a separate application for lighting review. Their priorities focus on structural, mechanical, plumbing and electrical requirements and corresponding permits. Currently, every building permit reviewed by the Building Safety Division Plan is stamped with a notation that exterior lighting must comply with Deschutes County's lighting regulations. At final inspection, however, not everything noted or stamped on a building plan is inspected. Nonetheless, if the expectations are to create such review through the Building Safety Division, this level of review will require hiring additional plans examiners and building inspectors, raising fees, likely delaying the issuance of building permits and the final inspection process. These actions could lead to unintended consequences related to increasing housing costs, among others.

#### Code Compliance Capacity

The Board has established the following priorities for code violations:

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<sup>3</sup> Ordinance 94-024. [https://s3-us-west-2.amazonaws.com/municipalcodeonline.com-new/deschutescounty/ordinances/documents/1620317553\\_1994-34738-Ordinance%20No.%2094-024%20Recorded%209\\_1\\_1994.pdf](https://s3-us-west-2.amazonaws.com/municipalcodeonline.com-new/deschutescounty/ordinances/documents/1620317553_1994-34738-Ordinance%20No.%2094-024%20Recorded%209_1_1994.pdf)

1. Violations that present an imminent threat to public life, health and safety;
2. Violations which impact rivers, streams, floodplains, and wetlands;
3. Solid waste, onsite wastewater, and building code violations consisting of non-permitted construction or failure to obtain permits; and
4. Land use violations.<sup>4</sup>

As detailed above, outdoor lighting-related code enforcement violations are not a top priority. Currently, outdoor lighting-related complaints constitute approximately 2% of the total received annually. Code compliance specialists typically send educational materials to violators to encourage them to change and/or shield their lighting fixtures. Similar to Building Safety, if expectations are to establish a robust compliance program for outdoor lighting violators, CDD will need to reprioritize complaints and/or look to additional resources to hire more Code Compliance staff.

## **V. EDUCATIONAL MATERIALS AND INFORMATION**

The Board previously expressed interest in pursuing an educational campaign around dark skies best practices. Based on this direction, staff reviewed a series of dark skies educational campaign materials produced by the International Dark-Sky Association (IDA). These materials are currently available through the IDA website and emphasize the importance of mitigating light pollution and promoting compliant fixtures among other related topics.<sup>5</sup>

In July 2022, CDD began to include IDA educational materials and information in the automated lobby displays (**Attachment 3**). These displays are designed to provide customers and other members of the public with helpful information. In addition to the informational displays, staff has engaged representatives from Travel Oregon and their regional office, Visit Central Oregon. As of January of 2023, staff notes that IDA has expressed an interest in producing educational brochures outlining compliant fixture design, light trespass prohibitions, and dark skies benefits to residents and neighbors through a Future Fund grant application with Visit Central Oregon.

Staff continues to explore additional methods with which to distribute dark skies information as an educational campaign. One such method would potentially involve informational releases through the County's website and social media platforms, ideally managed by the County's Digital Communications Coordinator. These releases could coincide with IDA's International Dark Sky Week, a promotional event held each year around April-May to encourage dark skies best practices.<sup>6</sup>

## **VI. RECONVENING OUTDOOR LIGHTING PANEL**

Another option for obtaining community feedback related to DCC Chapter 15.10 is for the Board to reconvene a Dark Skies Panel to gauge community concerns, feedback, and recommendations for amending DCC Chapter 15.10. Panelists could include representatives from partner agencies, CDD

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<sup>4</sup> [https://www.deschutes.org/sites/default/files/fileattachments/community\\_development/page/11842/code\\_compliance\\_policy\\_and\\_procedures\\_manual.pdf](https://www.deschutes.org/sites/default/files/fileattachments/community_development/page/11842/code_compliance_policy_and_procedures_manual.pdf).  
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<sup>5</sup> <https://www.darksky.org/our-work/grassroots-advocacy/resources/public-outreach-materials/>

<sup>6</sup> <https://idsw.darksky.org/>

divisions, dark skies experts from nonprofit or similar groups, as well as members of the agricultural community and construction industry. A tentative list of suggested panelists is included below.

1. International Dark Sky Association (IDA)
2. Astronomer
3. Wildlife Expert (ODFW / USFWS / Other)
4. Central Oregon Builders Association (COBA) representative
5. CDD Code Compliance
6. Farmer / Rancher
7. Construction Industry representative
8. COAR – local realtor representative

CDD could facilitate a panel discussion for approximately 3-5 meetings spanning a 2-4 month period. The following is a series of questions that could be addressed by the panelists:

1. Have you personally experienced light pollution/light trespass in a way that affected the residential use of your property?
2. What specific language changes would you recommend to DCC Chapter 15.10?
3. What exemptions, if any, should DCC Chapter 15.10 contain?
4. How do you envision the resolution process for bringing non-compliant lighting fixtures back into compliance?

#### Attachments

1. Benefits of Dark Skies Ordinances
2. Public Input
3. Best Management Practices

## Attachment 1

### Benefits of Dark Skies Ordinances

Many local governments in the United States have enacted dark sky ordinances. Support for dark sky legislation has been expressed by policymakers, designers, public safety professionals, wildlife biologists, and land use planning entities across the country. The IDA currently lists over 50 US jurisdictions that have been designated as Dark Sky communities, parks, or reserves as of 2020.<sup>7</sup> Most dark skies-related principles require that outdoor lighting be directed towards the ground in an effort to reduce lighting pollution and avoid light trespassing onto surrounding properties. Light pollution can have detrimental effects on astronomical observations, tourism, enjoyment of the night sky, and public safety. Light pollution can also be disrupting to wildlife habitat and natural circadian cycles common to both human and wildlife populations.<sup>8</sup>

Central Oregon is characterized by some of the most notable dark skies within the contiguous 48 states and is commonly referred to as the “Oregon Outback” by dark sky proponents and Astro-tourists. These unique dark sky resources are located primarily within Deschutes, Klamath, Lake, Harney, and Malheur Counties<sup>9</sup>. Below is an example of how Central Oregon’s night sky quality (and specifically Deschutes County) is viewed as a valuable resource to stargazers and other visitors to the region:

*Several elements combine to make Central Oregon attractive for stargazers. East of the Cascade Mountains the lack of any large metropolitan cities makes for a darker night sky. Even with nearby Bend, Oregon’s rapid growth, outdoor lighting standards are helping to keep light pollution and associated sky glow minimized. Deschutes County adopted an outdoor lighting ordinance which limits the types of lighting that can be used in order to help keep the rural skies sparkling with stars and the Milky Way. Locals know that they’re lucky to live in an area with community support that will help to keep these dark night skies unspoiled. Even from their own backyards they are able to view thousands of stars.<sup>10</sup>*

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<sup>7</sup> <https://www.darksky.org/our-work/conservation/idsp/communities/>

<sup>8</sup> DesignLights Consortium *Whitepaper: Non-white Light Sources for Nighttime Environments*. May 2022  
<https://www.designlights.org/resources/reports/whitepaper-non-white-light-sources-for-outdoor-environments/>

<sup>9</sup> <https://www.southernoregon.org/industry/oregon-outback-dark-sky-network/#>

<sup>10</sup> <https://www.darkskydefenders.org/blog/sunriver-designated-first-international-dark-sky-place-in-oregon>.

## Attachment 2

### Public Input

Throughout 2022, County staff received public comments related to dark skies and outdoor lighting. These comments can be generally categorized into concerns related to residential use, wildlife, recreational activities, and local industry related to dark skies.

#### Residential Use

Most public comments focused on the importance of prohibiting light trespass onto neighboring residential properties and mitigating such trespass through corrective shielding being added to potentially non-compliant light fixtures. Some comments suggest that the exemptions for motion-sensor lights on a timer are too broad and allow for unshielded lighting to persist for prolonged periods of time. Many of the comments emphasized sleep interruptions, and disruption of residential uses as some of the impacts from light trespass and timed motion light exemptions. The public comments related to residential use typically focused on a single property or small group of properties.

#### Wildlife

Public comments related to wildlife focused primarily on impacts to bird species, and large-scale effects on other migratory wildlife species. Wildlife-related comments emphasized the importance of implementing dark skies best practices to better preserve wildlife populations and their established feeding areas and migration patterns. Wildlife-related comments tended to focus on county-wide regional scale in terms of wildlife impacts and migration corridors.

#### Recreational Activities

Several public comments focused on the importance of preserving dark skies for the purpose of promoting recreational activities related to the night sky such as astronomy, photography, wildlife viewing, and amateur stargazing. These comments promote dark skies best practices as economic development opportunities capable of promoting the tourism economy within Deschutes County and the Central Oregon region. Tourism activities related to the night sky are often called "Astro-Tourism".

#### Local Industry

The County has also heard from several property owners who are currently engaged in large-scale agricultural uses and hobby farms. These commenters expressed concern with their ability to use outdoor lighting for agricultural operations (i.e. night harvests, animal births, pest control, etc.) and recommended that any outdoor lighting Ordinance allow an exemption for these types of agricultural activities.

Similarly, the County has heard from representatives of the local building and construction industries. These representatives expressed concern with the potential increase in construction costs that may result from design review processes, lighting inspections, and the cost of enhanced fixture designs.

## February 2022 Panel Discussion

In addition to the public comments outlined above, the Planning Commission convened a panel of outdoor lighting-related community members and experts on February 10, 2022 to gather feedback related to dark skies best practices and DCC Chapter 15.10. Participants emphasized the importance of dark skies best practices to:

- Preserve circadian rhythms and natural processes for both humans and wildlife
- Increase public safety
- Enhance experiences and outdoor recreational activities related to dark skies including astronomy and other astro-tourism activities.

Several panelists recommended incorporating IDA's "Five Principles for Responsible Outdoor Lighting" into any revisions to DCC Chapter 15.10 and establishing a proactive code enforcement process. The panel also unanimously recommended that any revision also include a description of LED lighting as a potential source of light pollution.

## Attachment 3

### Best Management Practices

IDA outlines in **Figure 1**, below, the following mitigation measures as being the most responsive and effective against the negative impacts of light pollution<sup>11</sup>:

**Figure 1 – Outdoor Lighting Mitigation Measures**

**LIGHT TO PROTECT THE NIGHT**  
Five Principles for Responsible Outdoor Lighting

**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.

Currently, Deschutes County does not require an application for outdoor lighting review nor any requirement for applicants to submit separate outdoor lighting plans in association with development proposals and application materials.

### Examples from Other Jurisdictions

There are several jurisdictions within Oregon, and more throughout the country, that currently support dark sky programs. **Table 1**, below, provides a summary. In addition to design-specific shielding requirements and brightness limitations, most outdoor lighting utilize outreach to promote dark sky-supportive outdoor lighting fixtures, tips for working independently with neighbors to resolve outdoor lighting issues, and a summary of dark sky benefits as related to local resources.

<sup>11</sup> <https://www.darksky.org/wp-content/uploads/2022/07/5-Lighting-Principles-6x8.5-HQP-07-2022.pdf>



**Table 1 - Other Dark Sky Ordinances**

<b>Jurisdiction</b>	<b>Program Emphasis</b>	<b>Resources</b>
<b>Multnomah County</b>	Downward Shielding/Separate Application Review	Applies only to new and replacement lighting fixtures or bulbs
<b>Sisters</b>	Downward Shielding	Educational materials include quick-reference guide for acceptable lighting fixtures
<b>Troutdale</b>	Downward Shielding/Separate Application Review/Light Level Ratings/Fixture Dimensions	Existing ordinance assigns shielding requirements based on lamp type and wattage
<b>Redmond, WA</b>	Separate Application Review/Light Trespass Prohibition/Vegetation Standards/Motion Sensors, Timers, Dimmers	Regulations generally focus on prescribing specific design and trespass standards based on conflicting zoning districts and surrounding uses
<b>Bainbridge Island, WA</b>	Downward Shielding/Light Trespass Prohibition/No Illumination of Public Water Bodies/Vegetation Standards	Existing ordinance includes reference guide for acceptable fixtures and light trespass compliance related to topographic variations, vegetation, and other terrain characteristics
<b>Black Diamond, WA</b>	Downward Shielding/Separate Application Review/Light Trespass Prohibition/IESNA Standards/Curfew/Light Level Ratings/Vegetation Standards	Applies only to new and replacement lighting fixtures or bulbs
<b>Flagstaff, AZ</b>	Downward Shielding/Wattage Restrictions	World's first "Dark-Sky Community" (2001). Educational information is available through the local Flagstaff Dark Skies Coalition non-profit group in collaboration with the City
<b>Malibu, CA</b>	Downward Shielding/Light Trespass Prohibition/Curfew/Motion Sensors, Timers, Dimmers/Color Temperature/Fixture Dimensions	Recently approved, the City Council has directed staff to include a robust educational campaign to emphasize the importance of outdoor lighting best practices and aid with compliance.
<b>Ketchum, ID</b>	Downward Shielding/Light Trespass Prohibition/Color Temperature/IESNA Standards/Fixture Dimensions	Educational materials include quick-reference guide for acceptable lighting fixtures