
CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | www.mercerisland.gov



PLANNING COMMISSION

TO: Planning Commission

FROM: Adam Zack, Senior Planner

DATE: January 18, 2022

SUBJECT: ZTR21-005

ATTACHMENTS:

- A. Boatsman Docket Request dated November 2, 2020.
- B. MICC 8.24.020 with staff drafted alternative amendment
- C. MICC 19.02.020 with staff proposed amendment

SUMMARY

The purpose of this memo is to provide the Planning Commission with the staff recommendation for ZTR21-005. This zoning code amendment was proposed in a Docket Request dated November 2, 2020 (Attachment A). The docket request proposed amendments to Mercer Island City Code (MICC) to address noise from gas-powered landscaping equipment and light trespass from external lighting fixtures in residential zones. This staff report focuses on and provides the staff recommendation for addressing noise from landscaping equipment and directional spotlights.

At the November 17, 2021 meeting, staff provided an overview of the proposed code amendments and provided some initial guidance on potential approaches for the Commission's consideration. The Commission discussed potential approaches to the issue of noise generated by landscaping equipment, with a particular interest in considering a ban on gas-powered leaf blowers. The Commission also directed staff to further investigate approaches to exterior lighting provisions for residential areas in neighboring cities, and to further develop a draft code amendment.

Staff has drafted an optional amendment to the nuisance provisions in Chapter 8.24 MICC to further regulate the allowed hours for noise from landscaping equipment. Staff does not recommend development of a code amendment banning gas-powered landscaping equipment at this time, as it would be beyond the scope of the City Council direction on this docket request. If the Planning Commission would like to pursue a ban on gas-powered landscaping equipment, they can provide a general recommendation to the City Council.

To address lighting in residential zones, the staff recommended amendments would add new standards for exterior lighting in MICC 19.02.020 Development standards. The proposed amendments would add a new subsection to the residential development standards. The purpose of the exterior lighting regulations is to establish standards for lighting fixture shielding, direction, and brightness to minimize light spillover onto neighboring properties in residential zones.

NOISE GENERATED BY LANDSCAPING EQUIPMENT

Conditions, activities, and actions considered nuisances in Mercer Island are established in [MICC 8.24.020 Types of nuisances](#). Noises from landscaping equipment, including leaf blowers, are currently allowed between 7:00 am and 8:00 pm on weekdays and 9:00 am and 8:00 pm on weekends and holidays (MICC 8.24.020(Q)(3)). Noises resulting from permitted activities like construction are allowed between 7:00 am and 7:00 pm on weekdays, 9:00 am and 6:00 pm on Saturday, and prohibited on Sundays and holidays.

If the Planning Commission would like to recommend amending the hours that noise from landscaping is allowed, they can propose an amendment to MICC 8.24.020(Q) as follows:

“Q. Sounds.

1. Sounds regulated by this section.

- a. The intent of this section is to regulate sounds heard beyond the property line of the source;
- b. The following sounds are explicitly regulated by this section:
 - i. Sounds caused by the construction or repair of any building or structure;
 - ii. Sounds caused by construction, maintenance, repair, clearing or landscaping;
 - iii. Sounds created by the installation or repair of utility services; and
 - iv. Sounds created by construction equipment including special construction vehicles.

2. Sounds related to activity authorized by a permit from the city of Mercer Island are limited as follows:

- a. Sounds shall only be allowed between the hours of 7:00 a.m. to 7:00 p.m. on Mondays through Fridays, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturdays.
- b. Sounds shall be prohibited at any time of day on Sunday and legal holidays.

3. Sounds related to activity that does not require a permit from the eCity of Mercer Island and are not caused by landscaping as described in subsection 4, shall only be allowed between the hours of 7:00 a.m. to 8:00 p.m. on Mondays through Fridays, and between the hours of 9:00 a.m. and 8:00 p.m. on Saturdays, Sundays, and legal holidays.

4. Sounds caused by landscaping, including sounds caused by lawnmowers, leaf blowers and other landscaping equipment, shall only be allowed between the hours of 8:00 a.m. to 8:00 p.m. on Mondays through Fridays, and between the hours of 9:00 a.m. and 8:00 p.m. on Saturdays, Sundays, and legal holidays.

45. The enforcement officer may authorize a variance to this section pursuant to WAC Chapter 173-60.”

The Planning Commission can recommend the specific hours they would like to limit noise from landscaping. The option above would allow these noises between 8:00 a.m. and 8:00 p.m. on weekdays (one hour later start time) and 9:00 a.m. and 6:00 p.m. on weekends and holidays (no change in hours). Staff does not recommend prohibiting noise from landscaping on Sundays and legal holidays because these days are often when private property owners will do yard work. Attachment B provides this option with the entire text of MICC 8.24.020, the alternative begins on page 3, line 43.

Gas-Powered Leaf Blower Ban

When discussing noise from gas-powered landscaping equipment, the Planning Commission discussed a possible ban on gas-powered leaf blowers. Similar bans or limitations on the use of gas-powered leaf blowers have been adopted in more than 100 cities nationwide in recent years. In researching this growing trend, staff found that such bans are becoming more common, especially in California (due to air quality concerns). That said, these bans are still uncommon in Washington. In addition, in talking with the City's Public Works staff about the deployment of electric landscaping equipment in the City, staff learned that large capacity backpack-style leaf blowers are not yet available with electric motors, nor do the currently available electric leaf blowers have the battery capacity to operate for the long timespans required by full-time landscape maintenance crews. Thus, while electric leaf blowers are a great option for homeowners, it may not yet be practical to enforce a ban on commercial landscaping companies.

Furthermore, while banning gas-powered leaf blowers might be a wise policy choice, it is beyond the scope of the project assigned to the Planning Commission by the City Council with the 2020 docket. If the Planning Commission would like to recommend a leaf blower ban, staff recommends that the commission make a general recommendation to the City Council for further consideration and direction. Then, the City Council can decide whether the City should undertake the work of adopting a ban and give direction on the desired process for considering such a code amendment.

RESIDENTIAL LIGHTING

In their initial direction provided on November 17, 2021, the Planning Commission asked staff to draft proposed regulations to control exterior spot lighting in residential zones. To prepare a draft, staff reviewed residential lighting standards in several neighboring jurisdictions, the International Dark Sky Association, and reference materials on the American Planning Association website. In general, lighting regulations are designed to ensure that new or substantially replaced exterior lighting fixtures:

- Minimize the amount of light that spills onto neighboring properties;
- Reduce ambient light pollution; and
- Only illuminate the object or area where light is needed.

There are two aspects of lighting fixtures that are typically regulated:

- Direction and shielding to keep light limited to the area or object where light is needed, and
- Brightness of the lighting fixture, usually measured in lumens.

Examples of lighting codes from nearby cities are available at the following links:

- Sammamish Municipal Code 21.A.30.230 Outdoor lighting.
<https://www.codepublishing.com/WA/Sammamish/?Sammamish21A/Sammamish21A30.html#21A.30.230>
- Issaquah Municipal Code 18.07.107 Outdoor lighting.
<https://www.codepublishing.com/WA/Issaquah/#!/Issaquah18/Issaquah1807.html#18.07.107>
- Kirkland Zoning Code 115.85 Lighting Regulations.
<https://www.codepublishing.com/WA/Kirkland/?KirklandZ115/KirklandZ115.html#115.85>

Direction and Shielding

Establishing standards for the direction and shielding of lighting fixtures controls where the light is provided. In reviewing lighting code guidance and examples, the direction and shielding measures where the most common way to prevent light spillover onto neighboring properties. In general, the reference materials established standards for lighting fixtures to be directed downward, no more than 45 degrees above straight down. Most lighting standards also included a shielding requirement. A shielded lighting fixture has an opaque barrier around the bulb and is angled so the bulb is not visible below the barrier.

Figure 1 shows a helpful illustration of shielded lighting from the Fountain Hills Dark Sky Association provides a helpful illustration of shielded lighting on their website at:
<https://fhdarksky.com/information/what-is-shielding/>

Figure 1. Fountain Hills Dark Sky Association Illustration of Shielded Lighting.

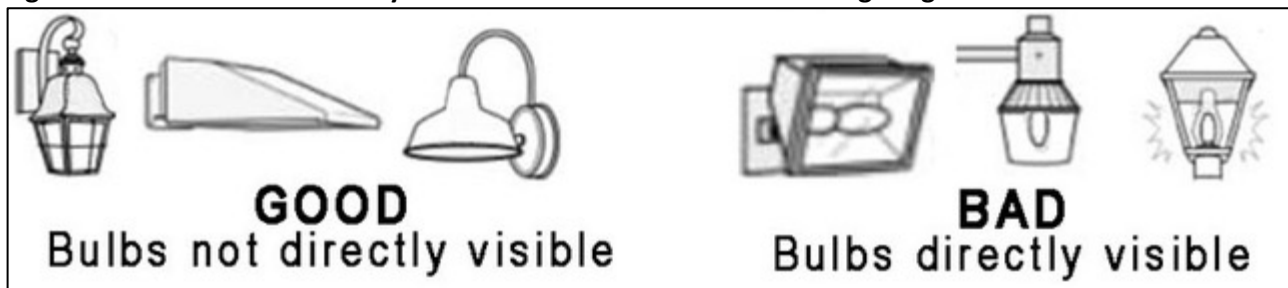
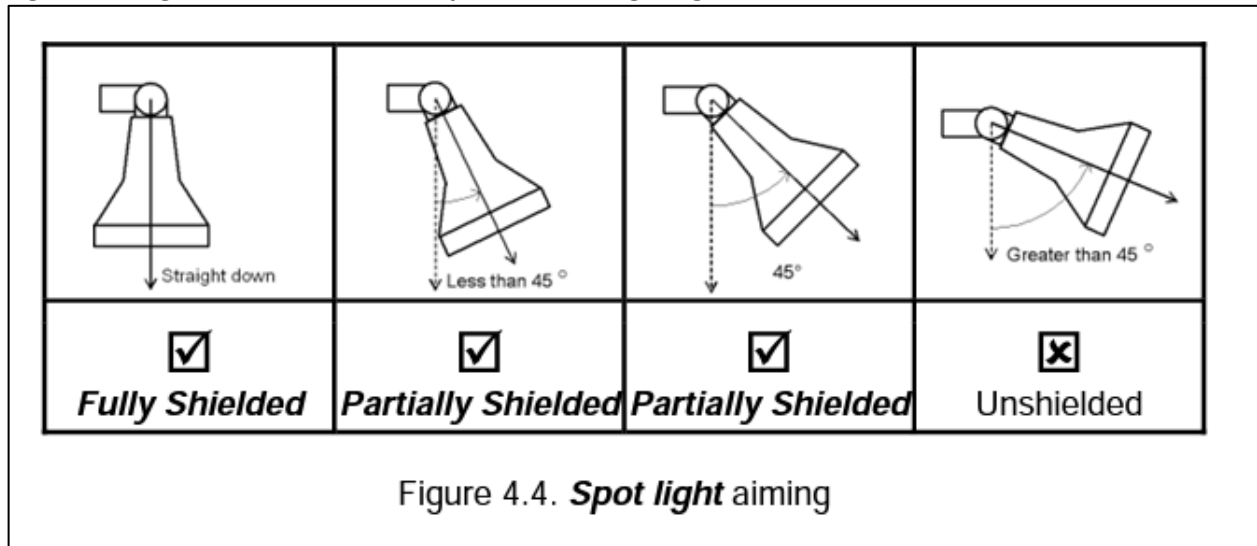


Figure 2 shows a helpful illustration of lighting fixture direction from the Flagstaff Arizona Naval Observatory lighting regulations (<http://www.flagstaffdarkskies.org/wp-content/uploads/2015/10/CBL-POLC-standard-v2.0.pdf>).

Figure 2. Flagstaff Naval Observatory Directional Lighting Illustration.



Shielding and direction are the two most effective and common lighting regulations available to limit the light spillover onto neighboring properties.

Brightness

In addition to requiring shielding and directing light downward, regulating brightness was a common feature of the regulations and guidance reviewed. Brightness of lighting fixtures is typically measured in lumens. Lumens differ from bulb wattage because they measure brightness whereas wattage is a measure of energy usage. High-efficiency lightbulbs produce more lumens with less wattage.

The more lumens a fixture produces, the brighter the light. The U.S. Department of Energy provides the following rule of thumb for comparing lumens to incandescent bulb wattage (<https://www.energy.gov/energysaver/lumens-and-lighting-facts-label>):

“The brightness, or lumen levels, of the lights in your home may vary widely, so here's a rule of thumb:

- To replace a 100 watt (W) incandescent bulb, look for a bulb that gives you about 1600 lumens. If you want something dimmer, go for fewer lumens; if you prefer brighter light, look for more lumens.
- Replace a 75W bulb with an energy-saving bulb that gives you about 1100 lumens
- Replace a 60W bulb with an energy-saving bulb that gives you about 800 lumens
- Replace a 40W bulb with an energy-saving bulb that gives you about 450 lumens.”

Most of the code examples reviewed established a limit on the lumens produced by exterior lighting fixtures. Limiting the brightness of a fixture, combined with shielding and direction, helps to prevent the amount of light spillover onto neighboring properties.

DRAFT RESIDENTIAL LIGHTING REGULATIONS

After reviewing examples of lighting regulations and other reference materials, staff prepared the following draft of lighting provisions. The lighting regulations would be added as a new subsection (K) to [MICC](#)

[19.02.020 Development standards](#). The full text of MICC 19.02.020 with the new subsection (K) is provided in Attachment C. The proposed standards are:

K. Exterior Lighting.

1. Applicability. This section applies to all exterior lighting installed after the effective date of this ordinance in the R-8.4, R-9.6, R-12, and R-15 zones. The following lighting types are exempt:

- a. Lighting within a public right-of-way or easement for the purpose of illuminating roads, trails, and pedestrian ways;
- b. Repair of lighting fixtures existing prior to the effective date of this ordinance;
- c. Emergency lighting;
- d. Temporary seasonal lighting; and
- e. lighting required by state or federal law.

2. Standards.

- a. All exterior lighting shall be designed to minimize light trespass onto neighboring properties.
- b. All exterior lighting must be either fully or partially shielded except that one unshielded lighting fixture not exceeding 450 lumens is allowed at the main entry of each residence.
 - i. Fully shielded means the lighting fixture has a solid opaque barrier at the top of the fixture in which the bulb is located and the fixture is angled so the bulb is not visible below the barrier.
 - ii. Partially shielded means the fixture is shielded by a solid opaque barrier or angled no more than 45 degrees above straight down, which is half-way between perpendicular and parallel to the adjacent grade.
- c. Each exterior lighting fixture shall not exceed 1,600 lumens.
- d. Exterior lighting fixtures shall be designed so that they do not project their output:
 - i. Onto neighboring properties;
 - ii. Past the object being illuminated;
 - ii. Skyward;
 - iii. Onto a public roadway; or
 - iv. Onto a trail or pedestrian way.

- e. Exterior lighting fixtures with a motion sensor must not be activated by off-site movement.

The proposed MICC 19.02.020(K) would regulate exterior lighting to prevent light trespass onto neighboring properties. The combination of shielding, direction, and brightness requirements would address the problem of lights shining beyond the extent of the property. Furthermore, the proposed MICC 19.02.020(K)(2)(d)(iii) would prevent motion activated spotlights from being triggered by offsite movement. The proposed regulations would establish clear standards for property owners and planners alike. In most instances, nonconformity with the standards will be simple to resolve because lighting fixtures can be easily repositioned to avoid light spilling beyond the property boundary.

STAFF RECOMMENDATION

Establish new residential lighting standards in MICC 19.02.020. The proposed MICC 19.02.020(K) will address the concern raised in the docket proposal and establish clear standards for residential lighting. The proposed amendment is shown in Attachment C beginning on page 10, line 18.

Criteria for Approval of Development Code Amendments

The criteria for approval of amendments to Title 19 MICC are established in [MICC 19.15.250\(D\) Code amendment](#), which states:

D. *Criteria.* The city may approve or approve with modifications a proposal to amend this Code only if:

1. The amendment is consistent with the comprehensive plan; and
2. The amendment bears a substantial relation to the public health, safety, or welfare; and
3. The amendment is in the best interest of the community as a whole.

The Comprehensive Plan Land Use Element does not include policies for lighting in residential zones. The general intent of the policies for residential zones outside of Town Center is for these areas to remain low density residential areas and to maintain the character of existing residential neighborhoods established in the Comprehensive Plan. The proposed amendment will not affect residential density. The proposed exterior lighting standards could enhance the character of existing neighborhoods by preventing single-family neighborhoods from having more intense types of exterior lighting found in denser urban environments. The proposal is consistent with the Comprehensive Plan. The amendment satisfies the criterion of approval established in MICC 19.02.020(D)(1).

The proposed amendment benefits public safety by establishing standards for lighting that allow property owners to place exterior lighting for security of personal property. By creating exemptions to the standards for lighting of public rights of way and pedestrian paths, the proposed amendment further serves public safety. These exemptions ensure that the lighting regulations will not create an undue burden for lighting in public areas for the purpose of safety. The amendment benefits public welfare by reducing light spillover between properties in residential zones resulting from unshielded or excessively bright external lighting fixtures. Because the proposed amendments relate to public safety and welfare, the amendment meets the criterion of approval established in MICC 19.02.020(D)(2).

The proposed amendment is in the best interest of the community as a whole because the lighting regulations strike a balance between the public safety needs for security lighting and the public welfare needs of limiting light trespass between properties. This balance, between safety and welfare needs, ensures the proposed amendments will not transgress the public interest of the overall community. Property owners that want to place exterior lighting fixtures on their property are allowed to do so under the proposed regulations. Owners of adjoining properties that do not want their property illuminated by their neighbors' exterior lighting are protected by light trespass under the proposed regulations. The proposed amendment satisfies the criterion of approval established in MICC 19.02.020(D)(3) because it will serve the community interest as a whole.

Do not amend noise regulations in MICC 8.24.020. The existing noise regulations limit noise from landscaping equipment similar to what is allowed for construction and other permitted development. The City does not require a permit for regular landscaping work, meaning enforcement of the limited hours of operation would fall to code enforcement. Amending the noise code to regulate landscaping equipment differently from other similar noises would be unnecessarily complicated. Furthermore, there is not a substantive difference between the noise generated by landscaping and other noises regulated by MICC 8.24.020 to necessitate regulating these noises differently.

If the Planning Commission would like to recommend a ban on gas-powered leaf blowers as discussed at the meeting on November 17, 2021, they provide a general recommendation on the matter to the City Council. A gas-powered leaf blower ban is beyond the scope of the docket proposal. As such, the City Council must decide whether the City should undertake the work of adopting a ban.