City Council 2nd Reading and Public Hearing
May 4, 2015

Outdoor Lighting Standards

Statement of need

- The negative effects of "light pollution" have been well-documented since the 1970s. These effects include
  - unwanted, spillage of light imposed on adjacent properties;
  - visual irritation and impairment experienced by pedestrians and motorists;
  - sky-glow and impairment of enjoyment of the natural night sky;
  - degradation of local community character;
  - inefficient, wasteful, and unnecessary consumption of energy, the depletion of nonrewable natural resources used to produce energy, and the resulting atmospheric pollution by gaseous emissions (most notably carbon dioxide, carbon monoxide, sulfur dioxide, and nitrous oxide)

Statement of need

- Outdoor lighting can create visual distractions and cause momentary blindness

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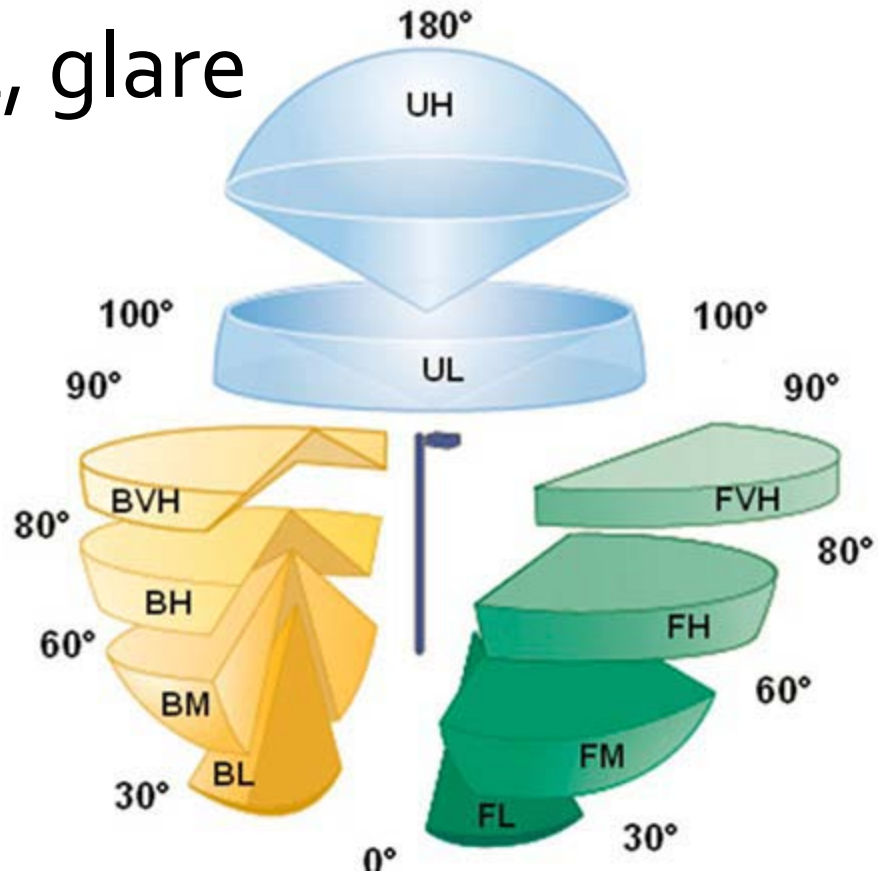
- Outdoor lighting can spillover onto adjacent properties

Statement of need

- Outdoor lighting can degrade views of night sky and community character, and harm nocturnal animals

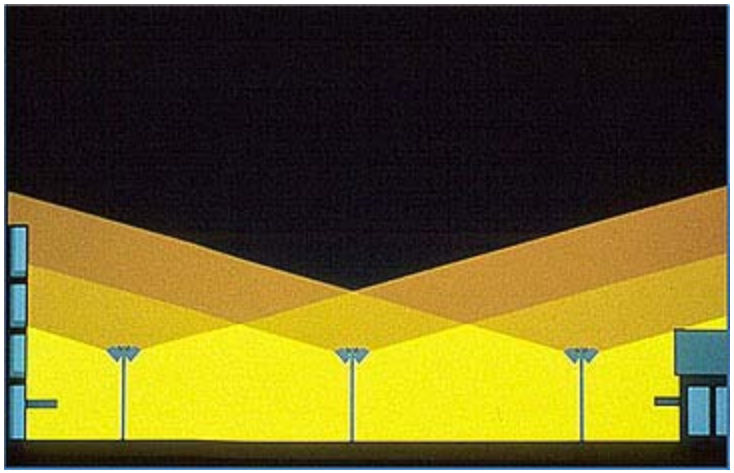
Things to consider

- Backlight, uplight, glare



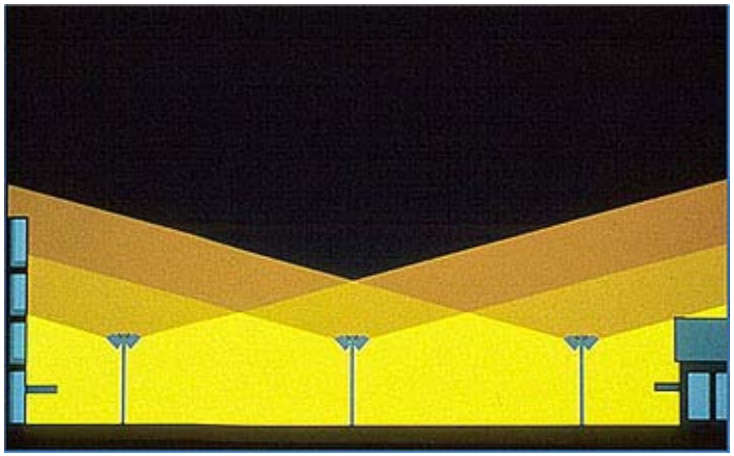
Things to consider

NO

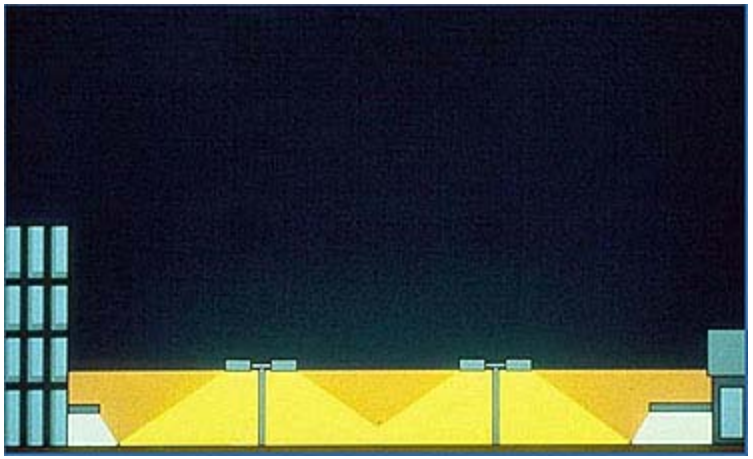


Things to consider

NO



YES



Current standards

- 2.4.4 C-H zone, architectural guidelines and standards:
  B. Lighting. *Project lighting shall be provided for security reasons. Fixture types shall be down mounted or shielded when located adjacent to residential development.*

  F. Parking lot lighting. *Parking lot lighting shall be provided for parking lots containing more than 10 spaces. The light fixtures shall be designed to light the parking area using down-mounted, low profile light fixtures. Parking lots with more than 10 vehicle parking spaces shall also include low profile lighting of pedestrian walkways and bicycle parking areas.*

Current standards

- 2.4.5 C-H zone, special standards:

  F. Parking lot lighting. *Parking lot lighting shall be provided for parking lots containing more than 10 spaces. The light fixtures shall be designed to light the parking area using down-mounted, low profile light fixtures. Parking lots with more than 10 vehicle parking spaces shall also include low profile lighting of pedestrian walkways and bicycle parking areas.*

Current standards

- 2.5.9 Industrial design standards:
  E. Outdoor Lighting. *Building-mounted lighting and aerial-mounted floodlighting shall be shielded from above in such a manner that the bottom edge of the shield shall be below the light source. Ground-mounted floodlighting or light projection above the horizontal plane is prohibited between midnight and sunrise. All lighting shall be shielded so that the direct illumination shall be confined to the property boundaries of the light source.*

Current standards

- 3.2.3 Design standards, access & circulation:

  A.4. Pathways shall have adequate lighting for safety purposes. The City may require lighting as a condition of development review.

- 3.6.3 Definitions and calculation standards

  C.2. Glare reduction. No sign may be illuminated or use lighting where such lighting is directed at any portion of a traveled street or will otherwise cause glare or impair the vision of the driver of a motor vehicle or otherwise interfere with the operation thereof.

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Current standards

- No design standard or specification for …
  - Maximum illuminance
  - "Unusual" or complex lighting applications like athletic facilities
  - Size and scale of luminaires, poles, amertures, etc.

Proposed standards

- Based on model regulations developed by IES and IDO, allows flexibility, based on scientific research
- 3 methods to achieve compliance
  - Prescriptive—simplest, doesn't need engineer
  - Performance—most flexible, for more complex designs, requires an engineer
  - Performance #2—maybe easiest for larger, commercial projects, requires an engineer

Example #1 Non-residential

- 3,500 square foot commercial building with 10 parking spaces
- Prescriptive method (3.11.6.A)
  - Number of parking spaces * Lumens/space

    *10 * 840 = 8,400 total lmns*
  - Must comply with BUG ratings, 100% cutoff lighting

Example #2 Non-residential

- 10,000 square foot commercial building on 1 acre
- Performance Method I (3.11.6.B)
  - Total hardscape area * Lumens/square foot

    *24,848 * 5 = 124,240 lmns*
  - Must comply with BUG ratings, 100% cutoff lighting

Example #3 Residential

- Maximum 1,260 lms/luminaire
- Additional maximum luminaire allowances for landscaping, entrance, directional flood lighting, etc.
- Must comply with other restrictions
  - No glare, light spillage limits

Review process

- Type IV process
- Reviewed by Planning Commission during work sessions and Public Hearing, recommended adoption by City Council after deliberation at Public Hearing on December 8, 2014

Minor/typographical corrections

- 3.11 changed to 3.12
- Add "*Luminaire lumens equals Initial Lamp Lumens for a lamp, multiplied by the number of lamps in a luminaire" after Table G
- Delete "for," after "Table B-2 – Lumen Allowances"