

Memorandum

To: Mayor Ben Kessler – City of Bexley
Jason Sudy – Side Street Planning

March 26, 2014

From: KLH Engineers

Re: Capital University Lighting and Sound Criteria

Sports Lighting System Spill & Glare Criteria:

- 3g. Sports lighting luminaires shall be equipped with shielding to effectively reduce direct view of the source lamp arc-tube or excessive brightness from the luminaires optical system by observers from the casements of adjacent residential dwellings.
- 3h. Sports lighting system initial spill lighting onto adjacent residential properties shall be limited to a maximum of 5 foot-candles horizontal at the property line bordering adjacent right-of-ways and a maximum of 2 foot-candles vertical at 25' above finished grade on adjacent residential dwelling units.
- 3i. Sports lighting system initial spill lighting to be based solely on direct contribution of the sports lighting system on adjacent properties and dwelling units. Initial foot-candle levels to be measured and recorded by an independent contractor hired by the City of Bexley. Any public street lighting or privately owned lighting contribution shall not be included in the measurements. It is recommended that lighting levels be recorded before and after sports lighting system is energized.
- 3j. Sports lighting system pole heights shall be restricted to 110' maximum height on home field side and 100' maximum height on the Visitors side of the field.
- 3k. Specific illumination standards of the sports lighting on the field to meet the recommended lighting conditions as set forth by the Illuminating Engineering Society of North America for the projected sporting events to be played on the field are the sole responsibility of the project lighting design team.

Model Lighting Ordinance. *The MLO is a document that was written through extensive efforts between the International Dark Sky Association (IDA) and the Illuminating Engineering Society (IES) to create a valuable guide for environmentally responsible outdoor lighting in North America. This partnership took 7 years to develop this template to help municipalities establish lighting standards that effectively help to reduce glare, light trespass and skyglow.*

Sports lighting is generally exempt from the Model Lighting Ordinance and used only with permit from the local authority recognizing that step have been taken to minimize glare and light trespass and to utilize sensible curfews with seems to have been addressed in the previous parts of the Conceptual draft of the "planning approval conditions" document

The following information is taken from the 2011 Final version of the Model Lighting Ordinance in respect to sports lighting...

B. Complex and Non-Conforming Uses

Upon special permit issued by the Authority, lighting not complying with the technical requirements of this ordinance but consistent with its intent may be installed for complex sites or uses or special uses including, but not limited to, the following applications:

1. Sports facilities, including but not limited to unconditioned rinks, open courts, fields, and stadiums.



2. Construction lighting.
3. Lighting for industrial sites having special requirements, such as petrochemical manufacturing or storage, shipping piers, etc.
4. Parking structures.
5. Urban parks
6. Ornamental and architectural lighting of bridges, public monuments, statuary and public buildings.
7. Theme and amusement parks.
8. Correctional facilities.

To obtain such a permit, applicants shall demonstrate that the proposed lighting installation:

- a. Has sustained every reasonable effort to mitigate the effects of light on the environment and surrounding properties, supported by a signed statement describing the mitigation measures. Such statement shall be accompanied by the calculations required for the Performance Method.
- b. Employs lighting controls to reduce lighting at a Project Specific Curfew ("Curfew") time to be established in the Permit.
- c. Complies with the Performance Method after Curfew.

The Authority shall review each such application. A permit may be granted if, upon review, the Authority believes that the proposed lighting will not create unwarranted glare, sky glow, or light trespass.

Sound Management Criteria:

- 4d. Measurements of offending sound shall be based on audio material produced by the speaker system. It is required to record, the material that is being presented as offensive. The recorded material shall include day, date and time stamping embedded in the recording which provides sufficient support of the material originating from the stadium sound system.
- 4e. It shall not be acceptable that typical street, urban pedestrian sound sources, be they considered "noise" or not to be included in the calculation as to whether the speaker system is producing offensive sound. Example Given: Trucks with engine brakes, first responder sirens, vehicles sitting at idle.
- 4f. Sound levels at eastern property line shall not exceed, 10 decibels, above the Community Noise Equivalent Level (CNEL). CNEL is the average A-weighted noise level during a 24 hour day, obtained after addition of 5dB in the evening from 7:00 PM to 10:00 PM and after addition of 10 dB to sound levels in the night between 10:00 PM and 7:00 AM. The CNEL shall be calculated based upon measurements recorded in the area immediately adjacent the Capital University property. Consideration shall be made for potential peaks of sound or noise such as crowd reaction to plays that are spontaneous and uncontrollable.
- 4g. Offending levels shall be calculated utilizing ISO standards and shall reflect L01, L10, L50, L90. The L# numbers are representative of the percent of time noise levels exceed the prescribed level during the measurement period. Offending sounds must be presented with proof of the duration of time the sound occurred. Short duration spikes of sound that happen during the acceptable prescribed time periods are expected and are tolerable.
- 4h. No speaker system will be activated prior to 8:00am or remain active after 11:00pm.
- 4i. The speaker system may only be used at events except briefly for sound testing purposes.
- 4j. The speaker system shall be designed in such a manner as to control the coverage to the area occupied by attendees, audience and participants on the field of play to the extent practical.
- 4k. The speaker system may not be expanded or enlarged so as to increase the decibel level or area of coverage beyond that which exists as of the date of project completion.
- 4k. Cannon sounds or progressive metal music are prohibited.