

**COUNCIL WORKSHOP**

**September 6, 2011  
5:30 p.m.**

**AGENDA**

City of



**“Where Dreams Can Soar”**

*The City of Bonney Lake’s Mission is to protect the community’s livable identity and scenic beauty through responsible growth planning and by providing accountable, accessible and efficient local government services.  
Website: [www.ci.bonney-lake.wa.us](http://www.ci.bonney-lake.wa.us)*

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*The City Council may act on items listed on this agenda, or by consensus give direction for future action.  
The Council may also add and take action on other items not listed on this agenda.*

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**Location:** Bonney Lake Justice Center, 9002 Main Street East, Bonney Lake, Washington.

**I. Call to Order:** Deputy Mayor Dan Swatman

**II. Roll Call:**

Elected Officials: Mayor Neil Johnson, Jr., Deputy Mayor Dan Swatman, Councilmember Laurie Carter, Councilmember Dan Decker, Councilmember Mark Hamilton, Councilmember Donn Lewis, Councilmember Randy McKibbin and Councilmember James Rackley.

**III. Agenda Items:**

A. **Council Open Discussion.**

Page 3 B. **Review of Council Minutes:** August 16, 2011 Council Workshop, August 23, 2011 Council Meeting, and August 30, 2011 Special Joint Council/Planning Commission Meeting.

Page 19 C. **Discussion:** Metropolitan Park Districts (Tabled from 8/16/11)

D. **Discussion:** Broadcast of City Council Meetings  
\*\*\*\*Not Advanced Materials for this Item\*\*\*\*

Page 23 E. **Discussion:** Renaming of Old Sumner Buckley Highway

Page 25 F. **Discussion:** Model Lighting Ordinance

**IV. Executive Session:** Pursuant to RCW 42.30.110(b), the City Council may hold an executive session. The topic(s) and the session duration will be announced prior to the executive session.

**V. Adjournment**

**For citizens with disabilities requesting translators or adaptive equipment for listening or other communication purposes, the City requests notification as soon as possible of the type of service or equipment needed.**

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## COUNCIL WORKSHOP

August 16, 2011  
5:30 p.m.

### DRAFT MINUTES



"Where Dreams Can Soar"

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**Location:** Bonney Lake Justice Center, 9002 Main Street East, Bonney Lake, Washington.

**I. Call to Order:** Deputy Mayor Swatman called the Workshop to order at 5:31 p.m.

**II. Roll Call:** [A1.3]

Administrative Services Director/City Clerk Harwood Edvalson called the roll. In addition to Deputy Mayor Dan Swatman, elected officials attending were Councilmember Laurie Carter, Councilmember Dan Decker, Councilmember Mark Hamilton, Councilmember Donn Lewis Councilmember Randy McKibbin and Councilmember James Rackley. Mayor Neil Johnson Jr. was absent.

Staff members in attendance were City Administrator Don Morrison, Chief Financial Officer Al Juarez, Public Works Director Dan Grigsby, Community Development Director John Vodopich, Chief of Police Mike Mitchell, City Attorney Jim Dionne, Administrative Services Director/City Clerk Harwood Edvalson, and Facilities & Special Project Manager Gary Leaf, Administrative Specialist Shawn Campbell.

**III. Agenda Items:**

**A. Presentation:** Proposed Flood Control Zone District from Pierce County.

Brian Ziegler from Pierce County thanked Council for allowing him to come and share the current County Proposed Flood Control District Plan with the City. He introduced Jeff Cox, Legal Counsel for Pierce County Council and Kjristine Lund, Executive Director for the King County Flood Control District. He gave a brief history of the Flood Control District that Pierce County established last year. He said he would like the Council to consider supporting the proposed Flood Control District. He said just because the District was disbanded did not mean the risk went away. He gave a synopsis of risks the County has identified, and the mitigation of flooding options. He gave a brief description of what a Flood Control District is, how it is funded, and outlined the benefits of creating a district to the County as a whole and to each partner. He added the district could charge every property owner in the County up to 50 cents per thousand dollars of property value, or charge in subzones according to Water Resource Inventory Area (WRIA). He gave a timeline for the District and said the collecting of funds could not start before 2013. He added the County is only considering 10 cents per thousand dollars of property value. He said the County has collaborated with the federal government to do a 6-year study of the issues in Pierce County. He added when the study is complete the recommended projects will be federally funded at 65%.

Councilmember Rackley asked if the City would be reimbursed for the construction of a floodwall to protect the Sumner/Bonney Lake Sewer Treatment Plant. Mr. Ziegler said if the wall is not completed, the district could pay for it but there would not be retroactive funds available, so if the City paid for the wall before the District, the funds that would otherwise be allocated to the floodwall project would fund other projects. Deputy Mayor Swatman noted the City of Bonney Lake is in the same WRIA zone as the City of Sumner and Orting. He said the

City of Bonney Lake does not have the same flooding concerns as the cities in the valley. Bonney Lake should not have the same contribution amount. He added it is nice to hear the County is only planning to take 10 cents per thousand but that is approximately 1/10 of the City of Bonney Lake's entire levy amount. Deputy Mayor Swatman said citizens bought property on the hill to protect themselves from flooding and he does not feel it is fair to ask the citizens of Bonney Lake to pay to protect development in the valley. He added assets should no longer be placed in the valley knowing the flooding concerns. He asked about restrictions for jurisdictions expanding their UGA into the flood zones. Mr. Jones said Washington State law restricts jurisdictions from expanding into flood plains. Councilmember Hamilton noted the advisory committee from last year was made up primarily of people in the valley. He feels more representation from the plateau is needed. He added development on the hills affects the land below and he does not see any projects planned for the plateau. Mr. Ziegler said an urban area can be 10 times more likely to flood than a forested area. City Administrator Morrison said much of the City's water is retained in the City's storm water retention ponds. He asked if Pierce County followed the King County model of putting aside 10 - 20% of the total funds for the local jurisdictions to deal with their local flood control projects, and if the percentage would be the same for the cities who benefit from the direct flood control projects. Mr. Ziegler said the district has not yet been formed so those decisions have not been made. Councilmember Carter asked why the city would want to join the Flood Control District if there are no projects planned that will benefit the City. She would like to see equitable amounts for the City.

Mayor Johnson joined the meeting by speakerphone.

**At 6:47pm, Councilmember Rackley moved to have a 10-minute recess. Councilmember Decker seconded the motion.**

**Motion approved 7 – 0.**

**The Workshop reconvened at 6:58pm.**

**B. Council Open Discussion:**

Collective Gardens: Councilmember Carter asked Council if they wanted to consider an ordinance establishing a moratorium for Collective Marijuana Gardens. City Attorney Dionne said his office could draft an ordinance for consideration at the next Council Meeting. Councilmember Lewis asked for the ordinance to be forwarded to Council as soon as possible so they could review it and possibly act on it at the next meeting.

Lighting Ordinance: Deputy Mayor Swatman asked if the Council is interested in considering a light pollution ordinance. He said he could present sample ordinances for council review. Councilmember Decker said this is an issue the Council needs to consider.

Sumner/Bonney Lake Sewer Treatment Plant: Deputy Mayor Swatman asked why the City is paying for part of the flood protection wall. He said the City owns capacity in the treatment plant, but does not own any part of the plant. Councilmember Hamilton said the two cities do not have a current agreement, and both City Councils must sign off on the agreement before it is final. Director Grigsby said the City agreed to move forward with the design of the expansion due to time constraints. The City of Sumner must expand the plant by 2014. City Administrator Morrison said when he spoke to the City of Sumner they presented three governance models: the City could buy capacity in the plant, become a wholesale customer, or

join a joint sewer district. He said regardless of which option the City chooses a completely new agreement must be written. Councilmember Decker asked about the option of partnering with the City of Buckley for sewer treatment capacity. Director Grigsby said the option was cost prohibitive. Councilmember Hamilton said a letter of understanding from County Executive Ladenburg stated the City and the County would work together to develop a sewer treatment plant on the plateau. He said the City could petition the County to work with the City to develop a sewer treatment plant together. He said it does not make sense to have two sewer treatment plants close together. City Administrator Morrison said Director Grigsby is working on a letter requesting the County work with the City on this issue. Deputy Mayor Swatman said he feels it is important to have Council input on the negotiations with Sumner. Mayor Johnson said it may work best to have two councilmembers from both cities participate in the negotiations. He said the Councilmembers could then report to the remainder of the Council.

Heritage Garden: Mayor Johnson suggested removing several of the rhododendrons from the Moriarty Property and placing them in current City parks as an alternative to the Heritage garden plan Winnona Jacobsen presented to Council at the August 9, 2011 Council meeting. He said he is concerned about creating a larger Heritage Garden on the Moriarty Property because there is currently no park development plan for the property.

**Councilmember Rackley moved to add a draft ordinance regarding amending Bonney Lake Municipal Code 12.13 as item “F” to the Workshop Agenda. Councilmember Decker seconded the motion.**

**Motion approved 7 – 0.**

- C. **Review of Council Minutes** : July 16, 2011 Special Council Meeting; July 19, 2011 Council Workshop; July 26, 2011 Council Meeting; and August 9, 2011 Council Meeting.

Councilmember Lewis asked for p.3 of the August 9, 2011 minutes to be amended to “29<sup>th</sup> & 30<sup>th</sup>, ~~giving given~~, and ~~for of~~”. The corrected minutes were forwarded to the August 23, 2011 meeting for action.

- D. **Discussion**: Pursuant to Public Hearing on 8/9/11 – AB11-83 – Resolution 2133 – 6-year Transportation Improvement Program (2012-2017).

Director Grigsby said the City is required to submit this report every year but it does not obligate the City to spend the funds allocated to each project. He outlined the changes from the report last year. He added this report allows the City to apply for some grant funds.

Councilmember Carter said she is disappointed in not seeing any trails included in the plan. She would like to see a trail that connects Angeline Road to Midtown. Director Grigsby said the trails are a part of the Non-Motorized Transportation plan, which is funded by the General Fund. City Administrator Morrison said the funds are currently allocated to Safe Routes to School and future Fennel Creek property acquisitions. Deputy Mayor Swatman asked if these are the same type of funds citizens were discussing at the Public Hearing during the August 9<sup>th</sup> Council Meeting. Director Grigsby said the Citizens were requesting a Transportation Impact Fee fund credit. Councilmember Lewis noted the Eastown property owners still have not formed a group or come to Council with a proposal for the sewers in Eastown.

- E. **Discussion**: Metropolitan Park District

**Councilmember Rackley moved to table the Metropolitan Park District discussion to the September 6, 2011 Council Workshop. Councilmember Decker seconded the motion.**

**Motion approved 6 – 1.  
Councilmember Hamilton voted no.**

**F. Discussion:** Amending BLMC 12.13.

Director Vodopich stated the idea behind this proposed ordinance is to help small businesses by eliminating the System Development Charges (SDC) on small tenant improvements that are accessory to an existing commercial business. Councilmember Rackley stated the City had already collected SDC’s from these businesses. Mayor Johnson said if a business wants to expand, the current fee structure is cost prohibitive and this ordinance will help small businesses expand in the City. Councilmember Lewis said if some of the current successful businesses are able to expand into the vacant spaces, it will be good for the City of Bonney Lake. Councilmember Hamilton asked why the City is charging SDC’s if the business is only expanding. Director Grigsby said the expansion would create more use of the City sewer. City Administrator Morrison said the Mayor has suggested passing this ordinance and then sending the issue back to the Community Development Committee to completely rework the chapter of the municipal code. Councilmember Carter asked if this would affect several businesses that have proposed tenant improvements in the area. Director Vodopich responded if their improvements fall into the parameters of the ordinance it would benefit them.

**IV. Executive Session:** None.

**V. Adjournment:**

**At 8:10 p.m. Councilmember Rackley moved to adjourn the Workshop. Councilmember Lewis seconded the motion.**

**Motion to adjourn approved 7 – 0.**

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Harwood T. Edvalson, CMC  
City Clerk

\_\_\_\_\_  
Neil Johnson, Jr.  
Mayor

*Items Submitted to the August 16, 2011 Council Workshop:*

- City of Bonney Lake –*Draft Ordinance* – Community Development Director Vodopich.
- City of Bonney Lake – Creation of a Metropolitan Park District – Gary Leaf.
- Pierce County – Potential Pierce County Flood Control Zone District – Brian Zeigler.
- Pierce County – Power Point Presentation – Brian Zeigler.

## CITY COUNCIL MEETING

August 23, 2011  
7:00 P.M.



*The City of Bonney Lake's Mission is to protect the community's livable identity and scenic beauty through responsible growth planning and by providing accountable, accessible and efficient local government services.*

### DRAFT MINUTES

*"Where Dreams Can Soar"*

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**Location:** Bonney Lake Justice Center, 9002 Main Street East, Bonney Lake, Washington.

**I. CALL TO ORDER** – Deputy Mayor Dan Swatman called the meeting to order at 7:00 p.m.

A. Flag Salute: Deputy Mayor Swatman led the audience in the Pledge of Allegiance.

B. Roll Call: Administrative Services Director/City Clerk Harwood Edvalson called the roll. In addition to Deputy Mayor Swatman, elected officials attending were Councilmember Laurie Carter, Councilmember Dan Decker, Councilmember Mark Hamilton, Councilmember Donn Lewis, Councilmember Randy McKibbin, and Councilmember Jim Rackley. Mayor Neil Johnson, Jr. attended via video-conference.

Staff members in attendance were City Administrator Don Morrison, Public Works Director Dan Grigsby, Chief Financial Officer Al Juarez, Police Chief Mike Mitchell, Administrative Services Director/City Clerk Harwood Edvalson, City Attorney Jim Dionne, and Records & Information Specialist Susan Duis.

C. Announcements, Appointments and Presentations:

1. Announcements:

a. **Proclamation**: Beautify Bonney Lake Day – September 17, 2011.

Mayor Johnson read the proclamation aloud and proclaimed Saturday, September 17, 2011 as Beautify Bonney Lake Day in Bonney Lake. He encouraged citizens and business owners to participate in the yearly event. Lillian McGinnis accepted the proclamation on behalf of Beautify Bonney Lake and thanked Mayor Johnson for his participation since the organization's beginning eight years ago.

2. Appointments:

a. **Administration of Oath of Office**: Sergeant James Keller.

Judge Heslop administered the oath of office to Sergeant James Keller. Mayor Johnson, Councilmembers, staff, and family members in attendance congratulated Sgt. Keller on his accomplishment.

3. Presentations: None.

D. Agenda Modifications: None.

**II. PUBLIC HEARINGS, CITIZEN COMMENTS & CORRESPONDENCE:**

A. Public Hearings: None.

- B. Citizen Comments: None.
- C. Correspondence: None.

### III. COUNCIL COMMITTEE REPORTS:

- A. Finance Committee: Deputy Mayor Swatman said the committee met at 5:30 p.m. earlier in the evening and discussed a franchise agreement with Comcast, an amendment to the cable utility tax ordinance, and a proposed public hearing related to the franchise agreement. The committee also reviewed a proposed modification to the City's legal services agreement with Dionne & Rorick. The committee forwarded Resolution 2148, an agreement for employee background investigations, and approved its meeting notes.
- B. Community Development Committee: Councilmember Rackley said the committee met on August 16, 2011 and reviewed the 2011 CIP project status report. The committee forwarded Resolution 2144 and Resolution 2145 to the current agenda.
- C. Public Safety Committee: Councilmember Hamilton said the committee has not met since the last Council meeting.
- D. Other Reports:
  - Pierce Transit: Mayor Johnson said he will be forwarding correspondence to Councilmembers related to issues between Pierce Transit agency management and the employee union. He said it is not clear how these issues might affect transit services in Bonney Lake in the future.
  - Community Events: Councilmembers Carter and Lewis attended the White River Families First coalition meeting in August. She said White River School District wants to get more information out to Bonney Lake residents about events and services, and asked that the City help provide information online and in newsletters. She added that the 4<sup>th</sup> annual Health Summit is on September 1<sup>st</sup>, and will include drug and alcohol abuse and domestic violence awareness education.
  - Women's Equality Day: Councilmember Carter said that August 26, 2011 is Women's Equality Day, and the anniversary of the passage of the 19<sup>th</sup> Amendment to the U.S. Constitution, which gave women the right to vote.

### IV. CONSENT AGENDA:

- A. **Approval of Corrected Minutes**: July 16, 2011 Special Council Meeting; July 19, 2011 Council Workshop, July 26, 2011 Council Meeting, and the August 9, 2011 Council Meeting.
- B. **Approval of Accounts Payable Checks/Vouchers**: Accounts Payable checks/vouchers #61728 thru 61764 (Including Wire Transfer #s 20010803, 20110802, 35271069) in the amount of \$209,886.08; Accounts Payable checks/vouchers #61765 thru 61797 in the amount of \$6,281.03; Accounts Payable

checks/vouchers #61798 thru 61833 (including Wire Transfer # 8122011) in the amount of \$364,051.10 for a grand total of \$580,218.21.

- C. **Approval of Payroll:** Payroll for August 1-15th 2011 for checks 29939-29967 including Direct Deposits and Electronic Transfers in the amount of \$ 432,058.72.
- D. **AB11- 84 – Resolution 2133** – A Resolution Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Adopting A Six-Year Transportation Improvement Program (2012-2017).
- E. **AB11-90 – Resolution 2139** – A Resolution Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Authorizing The Mayor To Sign A Renewal Agreement With Qwest To Provide ISDN PRI Circuit For A Term Of 36 Months With A Monthly Charge Of \$580.00.
- F. **AB11-93 – Resolution 2142** – A Resolution Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Authorizing The City To Submit An Application For The FY2013 Transportation Improvement Board Grant Programs In Connection With The State Route 410 & Sumner Buckley Highway Intersection Improvement Project.
- G. ~~**AB11-97 – Resolution 2145** – A Resolution Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Authorizing A Contract With RH2 Engineering For The On Site Sewer Abatement Master Plan.~~

Deputy Mayor Swatman requested that Item G., Resolution 2145, be moved to Community Development Issues, Item B.

**Consent Agenda approved as amended 7 – 0.**

**V. FINANCE COMMITTEE ISSUES:**

- A. **AB11-82 – Ordinance 1394 [D11-82]** – An Ordinance Of The City Of Bonney Lake, Pierce County, Washington, Modifying Bonney Lake Municipal Code Chapter 15.14 Relating To Funding Of The City’s Stormwater Utility.

**Councilmember Decker moved to approve Ordinance 1394. Councilmember Lewis seconded the motion.**

Deputy Mayor Swatman noted that the Finance Committee has reviewed this item extensively.

**Ordinance 1394 approved 7 – 0.**

- B. **AB11-92 – Resolution 2141** – A Resolution Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Authorizing The Mayor To Sign An Amendment To The Purchase And Sale Agreement With The Sumner School District To Provide Right-Of-Way For The Safe Routes To School Project.

**Councilmember Decker moved to approve Resolution 2141. Councilmember Lewis seconded the Motion.**

Deputy Mayor Swatman said staff members have worked very hard to get this contract completed. Facilities & Special Project Manager Gary Leaf said the plans still have to be approved by WSDOT but this is a big step in the process. The School Board plans to approve the agreement at their next meeting.

**Resolution 2141 approved 7 – 0.**

- C. **AB11-100 – Resolution 2147** – A Resolution Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Awarding A Contract To Wesco Cascade Controls For The Purchase And Installation Of Variable Frequency Drives.

**Councilmember Rackley moved to approve Resolution 2147. Councilmember Decker seconded the motion.**

Deputy Mayor Swatman said the Finance Committee reviewed the agreement, and although he has technical questions, he feels this is a good project. Councilmember Lewis noted the CDC also discussed the item.

**Resolution 2147 approved 7 – 0.**

**VI. COMMUNITY DEVELOPMENT COMMITTEE ISSUES:**

- A. **AB11-96 – Resolution 2144** – A Resolution Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Authorizing Awarding The Contract With Northwest Concrete Waterproofing For The Sewer Manhole Rehabilitation Services.

**Councilmember Decker moved to approve Resolution 2144. Councilmember Rackley seconded the motion.**

Director Grigsby confirmed that the City Attorney's office has reviewed the proposed agreement extensively. Deputy Mayor Swatman asked why some manholes have needed rehabilitation relatively quickly, and questioned the quality of the original equipment and the value of this project. Councilmembers Lewis and Rackley said staff keep records on each individual manhole and can identify which ones need rehabilitation. Councilmember Carter asked how the project is funded and prioritized. Director Grigsby said per the contract, staff and contractors will evaluate each manhole to determine which ones need work, and how much work each one needs, so the budgeted funds will be used as fully as possible. He added that this is a CIP project that has been in the budget for several years.

**Resolution 2144 approved 6 – 1.  
Councilmember Decker voted no.**

- B. **AB11-97 – Resolution 2145** – A Resolution Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Authorizing A Contract With RH2 Engineering For The On Site Sewer Abatement Master Plan.

**Councilmember Decker moved to approve Resolution 2145. Councilmember Rackley seconded the motion.**

Deputy Mayor Swatman asked if approval of this project implies that the City will continue funding future sewer abatement projects. Director Grigsby said the City has a recurring CIP project in the budget to reduce septic systems in the City limits. This proposed project would be the third project in the program. He said Community Development Committee members requested a master plan be created to better understand the project status and identify future project priorities. He said the City is currently working to install dry lines in the Cedarview development. He said the project is not yet complete, but the City will do a little more each year to extend sewer to the development. Councilmember Decker noted the area is zoned R-2 and he feels the residents do not want duplexes in the area, and therefore may not want sewer to be extended. Deputy Mayor Swatman said these projects increase rates for utility customers.

Councilmember Rackley said the Community Development Committee felt that having a plan would help the City save money by planning for future projects, and would provide additional background for how projects are selected. Director Grigsby confirmed that homeowners in Cedarview would have to hook up to the sewer line, once it is available, if their septic system fails or at the time they sell their house. Director Grigsby said the City provides an agreement for realtors which includes the cost for sewer hookup in the closing costs for home sales.

**Resolution 2145 approved 7 – 0.**

**VII. PUBLIC SAFETY COMMITTEE ISSUES:** *None.*

**VIII. FULL COUNCIL ISSUES:**

- A. AB11-101 – Ordinance 1395 [D11-101] – An Ordinance Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Amending Chapter 13.12 BLMC.**

**Councilmember Decker moved to approve Ordinance 1395. Councilmember Lewis seconded the motion.**

Councilmember Carter said this chapter needs additional amendments, and asked if this item could be tabled until the entire chapter has been reviewed. Mayor Johnson said the proposed amendments are time-sensitive and relate to a specific property owner who has been working with the Community Development Department to make improvements to his business, the Midtown Grill. He said the proposed ordinance helps small businesses by not requiring property owners to pay additional System Development Charges (SDC) when completing tenant improvements under a certain size limit. Mayor Johnson said Community Development Director Vodopich, who determined the calculations, was not in attendance to offer more details. Councilmember Lewis said based on committee discussions, the 50% threshold was based on other municipalities, as this level does not usually require additional sewer system upgrades. Councilmember Rackley noted that for the business in question, the City will not lose any fees because the business is expanding into another existing business space. Councilmember Hamilton expressed concern that the ordinance is too narrowly focused to a particular business owner and may not work

for others, and could present unforeseen issues in the future. Mayor Johnson said Director Vodopich drafted the ordinance with various types of businesses in mind, to allow other owners to expand into neighboring vacant spaces.

City Administrator Morrison said that the adjacent business paid a lower SDC rate than a restaurant, as it was only a video game store. He added, however, that the original Chinese restaurant in the Midtown Grill space had more seats than the later restaurants that have taken its place, so the proposed tenant improvements even out the total seating.

Deputy Mayor Swatman said he supports the ordinance as it provides flexibility for different types of businesses, and noted that different restaurants can have very different impacts even when they are in the same class. Councilmember Lewis said other businesses have made inquiries to the City about similar improvements, so there is interest in this option for more than one business owner.

Councilmember Carter said the Council discussed a similar ordinance a year or two ago but did not act on it. She said this proposed ordinance came to Council very quickly, and said she has concerns that it is too site-specific. Councilmember Decker said he supports the ordinance but feels the whole chapter should still be reviewed for amendments in the future.

**Motion approved 6 – 1.  
Councilmember Carter voted no.**

- B. AB11-102 – Ordinance 1396 [D11-102] – An Ordinance Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Adopting A Temporary Zoning Moratorium On The Establishment, Maintenance Or Continuation Of Medical Marijuana Collective Gardens.**

**Councilmember Rackley moved to approve Ordinance 1396. Councilmember Decker seconded the motion.**

City Administrator Morrison said the Council needs to select a date for a Public Hearing to complete Section 4 of the ordinance. City Attorney Dionne suggested that the Council set an open hearing at the next regular meeting.

**Councilmember Carter moved to set a Public Hearing for the next regular Council Meeting, September 13, 2011, at 7:00 p.m. Councilmember Decker seconded the motion.**

**Motion to amend Ordinance 1396 approved 7 – 0.**

**Ordinance 1396 approved as amended 7 – 0.**

- C. AB11-104 – A Motion Of The City Council Of The City Of Bonney Lake, Pierce County, Washington, Setting A Joint Special Meeting Of The City Council And Planning Commission For August 30, 2011 At 5:30 p.m.**

**Councilmember Lewis moved to approve AB11-104. Councilmember Rackley seconded the motion.**

Deputy Mayor Swatman said Planning Commissioners are eager to meet with the Council and asked if anyone would be unable to attend. All the Councilmembers said they should be able to attend the special meeting.

**Motion approved 7 – 0.**

**IX. EXECUTIVE SESSION:** None.

**X. ADJOURNMENT:**

**At 7:50 p.m., Councilmember Rackley moved to adjourn the meeting. Councilmember Lewis seconded the motion.**

**Motion to adjourn approved 7 – 0.**

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Harwood Edvalson, CMC  
City Clerk

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Neil Johnson  
Mayor

Items presented to Council at the August 23, 2011 Meeting: *None.*

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**SPECIAL JOINT  
CITY COUNCIL /  
PLANNING COMMISSION  
MEETING**

**August 30, 2011  
5:30 P.M.**



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**DRAFT MINUTES**

**Location:** Bonney Lake Justice Center, 9002 Main Street East, Bonney Lake, Washington.

- I. CALL TO ORDER** – Deputy Mayor Swatman. called the meeting to order at 5:31 p.m.
- II. Roll Call:** Administrative Specialist Shawn Campbell called the roll. In addition to Deputy Mayor Dan Swatman, elected officials attending were, Councilmember Laurie Carter, Councilmember Dan Decker, Councilmember Mark Hamilton, Councilmember Donn Lewis, Councilmember Randy McKibbin, Councilmember Jim Rackley. Appointed officials attending were, Commissioner Grant Sulham, Commissioner L. Winnona Jacobsen, Commissioner Richards Rawlings, and Commissioner Brad Doll. Commissioner Katrina Minton-Davis and Commissioner David Eck arrived at approximately 5:40 pm. Mayor Neil Johnson and Commissioner Brandon Fredrick were absent.

Staff members in attendance were City Administrator Don Morrison, Community Development Director John Vodopich, Planning Manager Heather Stinson and Administrative Specialist Shawn Campbell.

**III. Agenda Items:**

1. **Discussion:** Planning Commission Workplan.

Planning Manager Stinson provided an update on each item on the Planning Commission Workplan.

Update Title 14: Planning Manager Stinson said this item has been completed and is ready to bring forward to the Council for consideration.

Design Standards for Nightclubs and Noise Control Standards for New Construction or Redevelopment: Planning Manager Stinson said these two items have been combined in an ordinance and are currently being worked on by the Planning Commission.

Provisions for Stormwater Permits and Civil Permits: Planning Manager Stinson said these two items are still working though staff revision, and will not be ready for Council review during the 3<sup>rd</sup> quarter per the workplan schedule.

Update Comprehensive Plan Land Use Element to include CUGA subareas 1, 2, and 3 and Pre-Zone CUGA subareas 1, 2, and 3: Planning Manager Stinson said the Planning Commission is ready to bring a recommendation forward to Council that recognizes that area as the proposed Urban Growth Area. She said they are also considering adding a land use designation for the area after it is annexed. She said the Planning Commission is also working on a zoning designation for the area, but they will require more time. She said because the annexation did not go through, the Commission will continue working on the

zoning portion or postpone this portion until the annexation is closer to moving forward. Councilmember Rackley said the City needs to move forward with the zoning for the area. He said the City may need to update the zoning every year until the annexation is complete, but this would show Pierce County that the City is serious about planning for the area. He added the City could create a master plan community zone. Planning Manager Stinson said the zoning portion will need to be pushed into 2012 but the remainder of the update can move forward in 2011. Commissioner Minton-Davis said the first step is including the area in the proposed UGA, and then the Commission can work on the zoning issues. Councilmember Lewis said Council can have proposed zoning for the area and make changes as necessary. Councilmember Hamilton said the City could have a pre-annexation development agreement with a developer. Commissioner Jacobsen said the City does not have any master plan community zoning currently. She added that since the zoning does not need to be completed by the end of the year the Planning Commission could focus on this issue in the first part of the new year. City Administrator Morrison reminded Council and the Commission that Pierce County has stated the City must plan for the area. He added the administration is moving forward with this item. Commissioner Sulham said the City can start with a "broad brush" zoning. He said the City could look at the current developer agreement and create the zoning from that. Planning Manager Stinson said the Planning Commission has a draft ordinance for the zoning that has been reviewed by the legal department. She said the commission is hesitant to recommend the ordinance because they feel it still needs substantial work.

Cultural Resources Plan: Planning Manager Stinson asked for clarification on Council's intent in regards to the Cultural Resources Plan. She said the administration informed the Commissioners that it would be a standalone plan and not part of the Comprehensive Plan. She said the plan only needs to go through the Planning Commission if the Council intends to make it a part of the Comprehensive Plan. Commissioner Jacobsen said the Historical element of the Cultural Resources Plan came before the Council in January of 2009 and at that time, Council indicated they directed the Commission to include it in the Comprehensive Plan. She said the element needs to be part of the Comprehensive Plan to ensure it is enforceable and not forgotten. City Administrator Morrison said the Cultural Resources plan does not need to be part of the Comprehensive Plan. He said if the plan is intended to be a guide, then it could be enacted as a City policy. If the Council wanted the Cultural Resources Plan to be enforceable, then it would need to be a part of the Comprehensive Plan. Council expressed their desire to have this plan be a part of the Comprehensive Plan, and expressed concern that the plan was not moving forward with the other Comprehensive Plan amendments.

Midtown Plan: Planning Manager Stinson said this item is on schedule and moving forward as planned.

Shoreline Master Plan: Planning Manager Stinson said this item is also on schedule.

Update Title 18 including the Use Matrix: Planning Manager Stinson said the Planning Commission is looking at creating a new designation called Midtown zoning. She said they are looking at which commercial uses shall be included in the zones. Councilmember Hamilton suggested a Midtown overlay. Commissioner Minton-Davis said they are looking at changing the zoning instead of changing the allowed uses. Commissioner Sulham said the single zoning is more straightforward and simple than creating different zones for each area of the City.

Update the Transportation Plan: Planning Manager Stinson said this will be pushed to 2012 due to budget constraints. City Administrator Morrison said the Transportation plan is a budgeted item and will need to be updated to allow the City to apply for grants. He said the Pierce County Regional Council has granted the City provisional certification of the Transportation Plan with the understanding the City would update the plan by the end of 2012. He said the City has not missed any grant opportunities due to the outdated plan. He added Council would need to decide if they want to spend the money to update the plan now or wait until later next year. Director Vodopich said if the City was successful in winning a grant the update would need to be completed before the City could receive any of the funds.

Parks Element of the Comprehensive Plan: Planning Manager Stinson said the Park Element is on schedule. She added there is an element for Eastown ready for Council review.

## 2. Open Discussion

Planning Commission Work Plan: Commissioner Sulham said the Planning Commission Bylaws have not been updated since 2001. He suggested the Council add updating the Bylaws to the workplan. Deputy Mayor Swatman said the Commission could choose to work on this item administratively.

Commissioner Minton-Davis asked Council to provide more direction when they send an item to the Planning Commission. She suggested a staff report be included with each item. Councilmember Carter said it may be helpful for the commissioners to read the minutes and listen to the audio from the Council meetings regarding items sent from Council.

Planning Manager Stinson said if Council intends to add a Marijuana Collective Gardens ordinance to the Planning Commission's Work Plan, it would need to be voted on by the Council. Councilmember Carter said the issue is scheduled for a Public Hearing at the September 13, 2011 Council Meeting, then it would be brought forward for a vote.

Joint Council / Planning Commission Meetings: Deputy Mayor Swatman asked if Commissioners and Councilmembers found the joint meetings effective. Commissioners and Councilmembers agreed the meetings are effective and would like to schedule them further in advance to ensure both groups are prepared for the meeting. Councilmember Carter suggested having a joint meeting in conjunction with a regular Council meeting.

Walkable Bonney Lake: Commissioner Jacobsen recommended reading an opinion piece in the Sumner Bonney Lake Patch on a walkable Bonney Lake. She said the article is well written and points out many concerns for pedestrian transportation for the area.

Planning Commission Meetings: Deputy Mayor Swatman said the Bonney Lake Planning Commission is one of the few in the State that receive a salary and commissioners need to be held accountable to the tax payers. He suggested members sign in and sign out at each meeting.

Council thanked the Planning Commission for their hard work and dedication to the City.

**At 6:52 p.m., Councilmember Rackley moved for a 10 minute recess. Councilmember McKibbin seconded the motion.**

**Motion approved 7 – 0.**

**VI. Executive Session:** Council Adjourned to Executive Session at 7:05 for 10 minutes to discuss the minimum price at which real estate will be offered for lease pursuant to RCW 42.30.110(c).

**V. Adjournment:**

**At 7:15 p.m., Councilmember Rackley moved to adjourn the meeting. Councilmember Lewis seconded the motion.**

**Motion to adjourn approved 7 – 0.**

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Harwood Edvalson, CMC  
City Clerk

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Neil Johnson  
Mayor

Items presented to Council at the August 30, 2011 Meeting: *None.*

## Metropolitan Park District Key Facts

- A metropolitan park district (MPD) is a municipal corporation created by a simple majority vote of the people. Following are upcoming deadlines for potential future votes:

<b>Date of Election</b>	<b>Resolution Cutoff</b>
August 16, 2011	May 24, 2011
November 8, 2011	August 16, 2011
February 14, 2012*	December 30, 2011
April 17, 2012*	March 2, 2012
August 7, 2012	May 11, 2012
November 6, 2012	August 7, 2012

- RCW 35.61 governs the creation of an MPD. In 2002 the state law changed to make it easier to form MPDs.
- An MPD can be created by a majority of voters in a special election following a resolution of the City Council or a petition signed by at least 15% of registered voters.
- An MPD can be dissolved by a majority of voters in a special election.
- Territory by virtue of its annexation to a city that lies entirely within a park district is deemed to be within the limits of an MPD.
- An MPD may be created to provide funds to acquire or maintain parks, trails, or recreational facilities and even recreational programming including teen or senior centers. For example, Vashon Park District operates a senior center, and Bainbridge Island Park District operates a teen center.
- If the boundaries of the MPD coincide with the city limits, the City Council may become an ex officio board for the new MPD.
- If extending beyond the city limits either a County Council Member must be appointed as a board member, or the board members must be voted into office. If the board positions are elected there shall be five commissioners.
- The boundary review board has jurisdiction only if the MPD goes into unincorporated areas.
- The voter initiative that could potentially create an MPD must define the board of commissioners or establish candidates for the board if that option is chosen.
- A capital bond of up to 0.25% of assessed value may be issued without a popular vote (approximately \$5 million assuming current Bonney Lake city limits). A non-voted bond may not have a term exceeding 20 years.
- Non-voted bond authority might be able to increase indirectly by applying MPD financing to park and recreation O&M expenses, thereby freeing up General Fund resources to pay debt service on a new Councilmanic bond (assuming bond counsel determines an MPD is allowed to do this).
- A capital bond of up to 2.5% of assessed value may be issued if a 60% vote takes place; total maximum is \$50 million for existing Bonney Lake.

- The property tax levy is set by the board of park commissioners. It is limited to \$0.75 per thousand of assessed valuation, and any levy at or below that limit does not need voter approval. Any levy exceeding that amount requires a 60% vote.
- An MPD typically uses the following funding sources:
  1. Property tax levy
  2. Non-voted bonds for capital projects
  3. Voted bonds for capital projects
  4. Grants and loans
  5. Contributions and donations
  6. User fees

Note: An MPD cannot impose an impact fee, but the City could use its impact fees to acquire/develop park land that could be transferred to the MPD. Same applies to the real estate excise tax.

- An MPD tax levy is subject to tax levy lid rules that apply to junior taxing districts. A tax lid can be invoked if a geographic area's cumulative property tax rate exceeds the maximum allowed by state law.
- Of the nine potential junior taxing districts in this state, MPD is fourth from the top. This means only three junior taxing districts have higher priority (library, hospital, and fire).
- Four junior taxing districts have a lower priority than an MPD: port, park & recreation; flood control, and cemetery.
- The City of Bonney Lake has the option of turning park assets over to an MPD that has been created. Any debt acquired to purchase such assets automatically become a debt of the MPD upon transfer of ownership.
- An MPD has the right of eminent domain.
- Historically, bond issues have the least chance of passing at a November general election and a May special election. Generally, voters who turn out at special elections are more likely to favor the proposition and be willing to pay for it. Non-school bond issues have the best chance of passing in a February or March special election. When there are multiple bond or levy proposals on the same ballot, parks and recreation measures have very little chance of passing. 67 percent of absentee ballots are completed within the first week of receipt which means campaign materials must be out at least one week before the ballots are mailed.

### Capital Cost Options

1.	YMCA	75% of 40,000 s.f. facility	\$9 million
2.	5-field sport complex (mix of grass & artificial turf)		\$6 million
3.	Fennel Creek Trail	Kelly Farm portion SR 410 to Kelly Farm	\$1,545,000 \$578,000
4.	Community building similar to Pioneer Pavilion		\$2.5 million

**CITY OF BONNEY LAKE**  
*Voted Bonds for Park Improvements*  
 FOR DISCUSSION PURPOSES (AS OF 8/16/11)  
**20-YEAR FINANCING OPTIONS**

<b>ESTIMATED TAX LEVY IMPACT FOR VOTED BONDS</b>			
	20 Years	20 Years	20 Years
<b>Bond Size:</b>	<b>\$10,000,000</b>	<b>\$20,000,000</b>	<b>\$30,000,000</b>
Estimated Total Interest (1):	\$4,966,779	\$9,930,096	\$14,897,315
Average Annual Payment:	\$748,339	\$1,496,505	\$2,244,866
Average Interest Rate:	4.00%	4.00%	4.00%
<b>Tax Levy Impact:</b> (dollars per \$1,000 of assessed valuation)	<b>\$0.32</b>	<b>\$0.65</b>	<b>\$0.97</b>
Tax impact on a homeowner of: \$300,000			
Annual Increase:	\$97.13	\$194.23	\$291.36
Monthly Increase:	\$8.09	\$16.19	\$24.28
Tax impact on a homeowner of: \$200,000			
Annual Increase:	\$64.75	\$129.49	\$194.24
Monthly Increase:	\$5.40	\$10.79	\$16.19

1. Interest cost is preliminary and subject to change.
2. Assessed valuation for 2011 Tax Collections is: **\$2,311,437,000**

Prepared by: Martin Nelson and Company - Public Finance Department - Phone 1-888-342-6864

**CITY OF BONNEY LAKE, WASHINGTON  
DEBT CAPACITY CALCULATION REPORT**

	I.	II.
	Current Scenario	Future Bonds
1 2010 Assessed Valuation	\$2,311,437	\$2,311,437
<b>GENERAL PURPOSES</b>		
2 (Non-voted) Limited Tax General Obligation Debt Capacity (1.50%)	\$34,672	\$34,672
3 Less: Equipment Leases, Land Contracts, & Lease Purchase (1)	\$0	\$0
4 Less: Future Limited Tax General Obligation Bonds (1)	\$0	\$0
5 Less: 2008 Non-Voted Bond for Property, Streets & Justice Center	(\$10,000,000)	(\$10,000,000)
6 <b>Remaining Non-Voted General Obligation Debt Capacity</b>	<b>(\$9,965,328)</b>	<b>(\$9,965,328)</b>
7 (Voted) Unlimited Tax General Obligation Debt Capacity (2.5%)	\$57,786	\$57,786
8 Less: Outstanding 1997 Unlimited Tax General Obligation Bonds	(\$357,850)	\$0
9 Less: Outstanding Limited Tax General Obligation Debt	(\$10,000,000)	(\$10,000,000)
10 <b>Total Remaining General Obligation Debt Capacity for General Purposes</b>	<b>(\$10,300,064)</b>	<b>(\$9,942,214)</b>
<b>PARKS &amp; OPEN SPACE PURPOSES</b>		
11 (Voted) Unlimited Tax General Obligation Debt Capacity (2.5%)	\$57,786	\$57,786
12 Less: Future Park Improvement Unlimited Tax G.O. Bonds	\$0	(\$30,000,000) (2)
13 <b>Total Remaining General Obligation Debt Capacity for Parks/Open Space</b>	<b>\$57,786</b>	<b>(\$29,942,214)</b>
<b>UTILITY PURPOSES</b>		
14 (Voted) Unlimited Tax General Obligation Debt Capacity (2.5%)	\$57,786	\$57,786
15 Less: Outstanding Unlimited Tax G.O. Bonds	\$0	\$0 (2)
16 <b>Total Remaining General Obligation Debt Capacity for Utility Purposes</b>	<b>\$57,786</b>	<b>\$57,786</b>
17 <b>TOTAL FOR ALL PURPOSES</b>	<b>(\$10,184,492)</b>	<b>(\$39,826,642)</b>

(1) Paid from Regular Property Tax Collections out of the General Fund.

(2) Paid from a special voter-approved "excess" levy for the life of the bond issue.

**ORDINANCE NO. #####**

**AN ORDINANCE OF THE CITY OF BONNEY LAKE, WASHINGTON, CHANGING THE NAME OF SUMNER BUCKLEY HIGHWAY TO VETERANS HIGHWAY**

WHEREAS, the City of Bonney Lake desires to honor Veterans and their dedication and loyal service to our country; and

WHEREAS, A street name will be a reminder to the public of the daily sacrifice of the men and women in military uniform and without that sacrifice we would not be free; and

WHEREAS, the present name is no longer relevant because the roadway has been mostly replaced by SR 410; and

WHEREAS, the City of Bonney Lake wishes to add to its local identity and build public support for a Veteran Memorial Park:

**NOW THEREFORE THE CITY COUNCIL OF THE CITY OF BONNEY LAKE DO ORDAIN AS FOLLOWS:**

**Section 1.** That portion of the Sumner Buckley Highway within the city limits is hereby renamed Veterans Highway.

PASSED by the City Council and approved by the Mayor the #th day of #####

\_\_\_\_\_  
Neil Johnson, Mayor

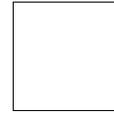
ATTEST:

\_\_\_\_\_  
Woody Edvalson, City Clerk

APPROVED

\_\_\_\_\_  
James Dionne, City Attorney

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**Illuminating**  
ENGINEERING SOCIETY



**JOINT IDA-IES**

**MODEL**

**LIGHTING**

**ORDINANCE**

**with USER GUIDE**

### **The User Notes**

The User Notes are intended to clarify the sections of the MLO for the various audiences who will use it: lighting designers, city officials, engineers, citizen groups, and others. Every effort has been made to keep the language technically accurate and clear, but since different disciplines may use the same term in different ways, or have different interpretations, some guidance may be helpful. While these Notes can not be a full tutorial on modern lighting design, it is hoped that the Notes will help facilitate the dialogue necessary to adopt the MLO.

### **Background**

The problems of light pollution first became an issue in the 1970s when astronomers identified the degradation of the night sky due to the increase in lighting associated with development and growth. As more impacts to the environment by lighting have been identified, an inter-national “dark sky” movement is advocating for the precautionary approach to outdoor lighting design.

Many communities have passed anti-light-pollution laws and ordinances. However, there is little or no agreement among these laws, and they vary considerably in language, technical quality, and stringency. This is confusing for designers, engineers, and code officials. The lack of a common basis prevents the development of standards, educational programs, and other means of achieving the goal of effective lighting control.

This MLO will allow communities to drastically reduce light pollution and glare and lower excessive light levels. The recommended practices of the IES can be met using readily available, reasonably priced lighting equipment. However, many conventional lighting practices will no longer be permitted, or will require special permits.

This Model Lighting Ordinance (MLO) is the result of extensive efforts by the International Dark Sky Association (IDA) and the Illuminating

Engineering Society of North America (IES). Among its features is the use of lighting zones (LZO-4) which allow each governing body to vary the stringency of lighting restrictions according to the sensitivity of the area as well as accommodating community intent. In this way, communities can fine-tune the impact of the MLO without having to customize the MLO. The MLO also incorporates the Backlight-Uplight-Glare (BUG) rating system for luminaires, which provides more effective control of unwanted light.

# Joint IDA-IESNA Model Outdoor Lighting Ordinance (MLO)

June 15, 2011

## CONTENTS

- I. Preamble.....5
- II. Lighting Zones.....5
- III. General Requirements for All Outdoor Lighting .....8
- IV. Requirements for Non-Residential Outdoor Lighting.....11
- V. Requirements for Residential Outdoor Lighting.....19
- VI. Lighting by Special Permit Only.....20
- VII. Existing Lighting.....21
- VIII. Enforcement and Penalties (Reserved).....22
- IX. Tables.....23
- X. Definitions.....32
- XI. (Optional) Street Lighting Ordinance.....38

**GENERAL NOTES IN ADOPTING THIS ORDINANCE**

Adoption of this ordinance should follow the established development, review, and approval processes of the adopting authority. If no such processes are in place, this ordinance may be adopted as a new independent section of the Municipal Code.

The MLO is probably best adopted as an “overlay zoning” ordinance. This means that it overlays, but is different from, land-use zoning. It can be added to or integrated into existing ordinances or codes and cross-referenced to other applicable codes and ordinances such as the electrical code, the sign code, planning ordinances, etc.

The MLO may best be managed by assigning it to planning officials and using existing administrative structures.

Because of the diverse community and lighting needs across large areas, this MLO is not intended for adoption as a state, provincial or national ordinance. Regional coordination is encouraged. Light pollution knows no boundaries, and the effects of polluting light persist as far as 200 kilometers (about 120 miles) from the source. One large city could adopt the MLO and dramatically affect a region, but adoption in suburbs and small towns must be part of a regional effort to achieve significant improvements in the overall quality of the night sky.

Adopting agencies should also consider that the MLO, like all other modern codes, is designed to evolve over time. Lighting technology will change, and MLO changes will be needed every few years. On-going renewal cycles are strongly recommended as any part of an adopting ordinance.

**MLO Development and Task Force Members**

This Model Lighting Ordinance has been developed as a joint undertaking by the Illuminating Engineering Society and the International Dark-Sky Association.

The Joint Task Force responsible for developing the MLO include

IDA	IES
Co-Chair: Jim Benya	Naomi Miller
Co-Chair: Nancy Clanton	Cheryl English
Leslie Lipstein	Denis Lavoie
Leo Smith	Eric Gibson
Michael Mutmansky	

John Walter representing the electric utility industry also contributed as a member of the Joint Task Force.

## MODEL LIGHTING ORDINANCE – USER GUIDE

### I. PREAMBLE – USER GUIDE

In general, the preamble is part of the ordinance but is typically not part of the code. It establishes the reasons why the municipality is undertaking these regulations.

Local governments may add other purposes to the Preamble including established local government environmental or energy goals that support the model lighting ordinance. The environmental impacts of outdoor lighting fall into two categories: carbon footprint (energy used in the life of a lighting product) and obtrusive light.

<b>CARBON FOOTPRINT</b>	<b>OBTRUSIVE LIGHT</b>
Cost & Impact of Mining the Materials Used	Impact on Humans
Energy Used in Production	Impact on the Environment
Energy Used during Product Life	
Disposal/Recycling Costs	

### II. LIGHTING ZONES – User Guide

Lighting zones reflect the base (or ambient) light levels desired by a community. The use of lighting zones (LZ) was originally developed by the International Commission on Illumination (CIE) and appeared first in the US in IES Recommended Practice for Exterior Environmental Lighting, RP-33-99.

It is recommended that lower lighting zone(s) be given preference when establishing zoning criteria. Selection of lighting zone or zones should be based not on existing conditions but rather on the type of lighting environments the jurisdiction seeks to achieve. For instance, new development on previously rural or undeveloped land may be zoned as LZ-1. Using lighting zones allows a great deal of flexibility and customization without the burden of excessive regulation. Example: a jurisdiction may choose to establish vertical lighting zones with the lighting zone at street level at a higher zone than the residential housing on upper levels.

## MODEL LIGHTING ORDINANCE – TEXT

### I. PREAMBLE – Ordinance Text

The purpose of this Ordinance is to provide regulations for outdoor lighting that will:

- a. Permit the use of outdoor lighting that does not exceed the minimum levels specified in IES recommended practices for night-time safety, utility, security, productivity, enjoyment, and commerce.
- b. Minimize adverse offsite impacts of lighting such as light trespass, and obtrusive light.
- c. Curtail light pollution, reduce skyglow and improve the nighttime environment for astronomy.
- d. Help protect the natural environment from the adverse effects of night lighting from gas or electric sources.
- e. Conserve energy and resources to the greatest extent possible.

### II. LIGHTING ZONES – Ordinance Text

The Lighting Zone shall determine the limitations for lighting as specified in this ordinance. The Lighting Zones shall be as follows:

#### **LZO: No ambient lighting**

Areas where the natural environment will be seriously and adversely affected by lighting. Impacts include disturbing the biological cycles of flora and fauna and/or detracting from human enjoyment and appreciation of the natural environment. Human activity is subordinate in importance to nature. The vision of human residents and users is adapted to the darkness, and they expect to see little or no lighting. When not needed, lighting should be extinguished.

**II. LIGHTING ZONES – User Guide - continued**

However, if an adjacent use could be adversely impacted by allowable lighting, the adopting authority may require that a particular site meet the requirements for a lower lighting zone. For example, the authority could specify Lighting Zone 1 or 2 requirements if a commercial development were adjacent to a residence, hospital or open space, or to any land assigned to a lower zone.

Lighting zones are best implemented as an overlay to the established zoning especially in communities where a variety of zone districts exists within a defined area or along an arterial street. Where zone districts are cohesive, it may be possible to assign lighting zones to established land use zoning. It is recommended that the lighting zone includes churches, schools, parks, and other uses embedded within residential communities.

<b>ZONE</b>	<b>Recommended Uses or Areas</b>	<b>Considerations</b>
0	Lighting Zone 0 should be applied to areas in which permanent lighting is not expected and when used, is limited in the amount of lighting and the period of operation. LZ-0 typically includes undeveloped areas of open space, wilderness parks and preserves, areas near astronomical observatories, or any other area where the protection of a dark environment is critical. Special review should be required for any permanent lighting in this zone. Some rural communities may choose to adopt LZ-0	<b>Recommended default zone for wilderness areas, parks and preserves, and undeveloped rural areas.</b> Includes protected wildlife areas and corridors.
1	Lighting Zone 1 pertains to areas that desire low ambient lighting levels. These typically include single and two family residential communities, rural town centers, business parks, and other commercial or industrial/storage areas typically with limited nighttime activity. May also include the developed areas in parks and other natural settings.	<b>Recommended default zone for rural and low density residential areas.</b> Includes residential single or two family; agricultural zone districts; rural residential zone districts; business parks; open space include open space include preserves in developed areas.

**II. LIGHTING ZONES – Ordinance Text - continued**

**LZ1: Low ambient lighting**

Areas where lighting might adversely affect flora and fauna or disturb the character of the area. The vision of human residents and users is adapted to low light levels. Lighting may be used for safety and convenience but it is not necessarily uniform or continuous. After curfew, most lighting should be extinguished or reduced as activity levels decline.

**LZ2: Moderate ambient lighting**

Areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting may typically be used for safety and convenience but it is not necessarily uniform or continuous. After curfew, lighting may be extinguished or reduced as activity levels decline.

**LZ3: Moderately high ambient lighting**

Areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security and/or convenience and it is often uniform and/or continuous. After curfew, lighting may be extinguished or reduced in most areas as activity levels decline.

**LZ4: High ambient lighting**

Areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally considered necessary for safety, security and/or convenience and it is mostly uniform and/or continuous. After curfew, lighting may be extinguished or reduced in some areas as activity levels decline.

**II. LIGHTING ZONES – User Guide - continued**

ZONE	Recommended Uses or Areas	Considerations
<p><b>2</b></p>	<p>Lighting Zone 2 pertains to areas with moderate ambient lighting levels. These typically include multifamily residential uses, institutional residential uses, schools, churches, hospitals, hotels/motels, commercial and/or businesses areas with evening activities embedded in predominately residential areas, neighborhood serving recreational and playing fields and/or mixed use development with a predominance of residential uses. Can be used to accommodate a district of outdoor sales or industry in an area otherwise zoned LZ-1.</p>	<p><b>Recommended default zone for light commercial business districts and high density or mixed use residential districts.</b> Includes neighborhood business districts; churches, schools and neighborhood recreation facilities; and light industrial zoning with modest nighttime uses or lighting requirements.</p>
<p><b>3</b></p>	<p>Lighting Zone 3 pertains to areas with moderately high lighting levels. These typically include commercial corridors, high intensity suburban commercial areas, town centers, mixed use areas, industrial uses and shipping and rail yards with high night time activity, high use recreational and playing fields, regional shopping malls, car dealerships, gas stations, and other nighttime active exterior retail areas.</p>	<p><b>Recommended default zone for large cities' business district.</b>  Includes business zone districts; commercial mixed use; and heavy industrial and/or manufacturing zone districts.</p>
<p><b>4</b></p>	<p>Lighting zone 4 pertains to areas of very high ambient lighting levels. LZ-4 should only be used for special cases and is not appropriate for most cities. LZ-4 may be used for extremely unusual installations such as high density entertainment districts, and heavy industrial uses.</p>	<p><b>Not a default zone.</b>  Includes high intensity business or industrial zone districts.</p>

**III. GENERAL REQUIEMENTS – User Guide**

This Section sets out the requirements that apply to all lighting, both residential and non-residential.

Each adopting jurisdiction should incorporate their existing standards as to when compliance with new regulations is required, when repair or remodeling triggers compliance and if the new ordinance will be retroactive to existing development. The Applicability section of this model ordinance should serve as a guide if the adopting jurisdiction does not have standards or policies in place. Likewise, the adopting jurisdiction should use their existing policies and definitions of what constitutes public monuments, and temporary and/or emergency lighting. Community attitudes and precedents should be taken into account in deciding to regulate seasonal holiday lighting.

**EXEMPTIONS – User Guide**

This is standard language intended to prevent conflict of laws and to give the community the ability to set specific lighting requirements in special plans and under use permits. It can be amended to conform to similar language in other ordinances. For example, while public monuments, statuary, and flags should be lighted, the lighting also should be limited to avoid excess.

Lighting for streets, roads, and highways is usually regulated by a street lighting ordinance, and is not covered by this model ordinance. However, since street lighting can affect nearby areas, some recognition of its effect is appropriate. (See Section XI)

**SIGN LIGHTING – User Guide**

A sign lighting ordinance is strongly recommended if not already in place. It should carefully limit lighting to prevent over-lighted signs from being used to circumvent lighting ordinances.

**III. GENERAL REQUIEMENTS – Ordinance Text**

**A. Conformance with All Applicable Codes**

All outdoor lighting shall be installed in conformance with the provisions of this Ordinance, applicable Electrical and Energy Codes, and applicable sections of the Building Code.

**B. Applicability**

Except as described below, all outdoor lighting installed after the date of effect of this Ordinance shall comply with these requirements. This includes, but is not limited to, new lighting, replacement lighting, or any other lighting whether attached to structures, poles, the earth, or any other location, including lighting installed by any third party.

**Exemptions from III.(B.)** The following are not regulated by this Ordinance

- a. Lighting within public right-of-way or easement for the principal purpose of illuminating streets or roads. No exemption shall apply to any lighting within the public right of way or easement when the purpose of the luminaire is to illuminate areas outside the public right of way or easement, unless regulated with a street lighting ordinance.

**Note to adopting agency: if using the street lighting ordinance (Section XI), this exemption should read as follows:**

Lighting within the public right-of-way or easement for the principal purpose of illuminating roads and highways. No exemption shall apply to any street lighting and to any lighting within the public right of way or easement when the purpose of the luminaire is to illuminate areas outside of the public right of way or easement.

- b. Lighting for public monuments and statuary.
- c. Lighting solely for signs (lighting for signs is regulated by the Sign Ordinance).
- d. Repairs to existing luminaires not exceeding 25% of total installed luminaires.

**III. GENERAL REQUIEMENTS – Ordinance Text - Continued**

- e. Temporary lighting for theatrical, television, performance areas and construction sites;
- f. Underwater lighting in swimming pools and other water features.
- g. Temporary lighting and seasonal lighting provided that individual lamps are less than 10 watts and 70 lumens.
- h. Lighting that is only used under emergency conditions.
- i. In lighting zones 2, 3 and 4, low voltage landscape lighting controlled by an automatic device that is set to turn the lights off at one hour after the site is closed to the public or at a time established by the authority.

**Exceptions to III. (B.)** All lighting shall follow provisions in this ordinance; however, any special requirements for lighting listed in a) and b) below shall take precedence.

- a. Lighting specified or identified in a specific use permit.
- b. Lighting required by federal, state, territorial, commonwealth or provincial laws or regulations.

**C. Lighting Control Requirements**

**1. Automatic Switching Requirements**

Controls shall be provided that automatically extinguish all outdoor lighting when sufficient daylight is available using a control device or system such as a photoelectric switch, astronomic time switch or equivalent functions from a program-able lighting controller, building automation system or lighting energy management system, all with battery or similar backup power or device.

**LIGHTING CONTROLS – User Guide**

This section requires all outdoor lighting to have lighting controls that prohibit operation when sufficient daylight is available, and to include the capability, either through circuiting, dimming or alternating sources, to be able to reduce lighting without necessarily turning all lighting off.

**CURFEW REQUIREMENTS – User Guide**

The intent is to reduce or eliminate lighting after a given time. Benefits include reduced environmental impact, longer hours of improved astronomy, energy savings, and improved sleeping conditions for residents. Additionally, some police departments have indicated that post-curfew light reductions make drive-by patrolling easier because it allows them to see further into and through a site.

The authority should determine the time of curfew and the amount of lighting reduction based on the character, norms and values of the community.

Typically, curfews go into effect one hour after the close of business. Restaurants, bars and major entertainment facilities such as sports stadiums, may require the curfew go into effect two hours after the close of business. The authority may elect to have no curfew for facilities with shift workers and 24 hour operations, or to extend the curfew time to meet specific needs. The MLO can be modified to address those concerns.

Areas without street lights or with very low ambient light levels should consider turning off all non-emergency lighting at curfew while commercial areas or urban areas may prefer a reduction in lighting levels. A reduction of at least 30% is recommended for most uses.

**III. GENERAL REQUIREMENTS – Ordinance Text - Continued**

**Exceptions to III.(C.) 1.** Automatic lighting controls are not required for the following:

- a. Lighting under canopies.
- b. Lighting for tunnels, parking garages, garage entrances, and similar conditions.

**2. Automatic Lighting Reduction Requirements**

The Authority shall establish curfew time(s) after which total outdoor lighting lumens shall be reduced by at least 30% or extinguished.

**Exceptions to III.(C.) 2.** Lighting reductions are not required for any of the following:

- a. With the exception of landscape lighting, lighting for residential properties including multiple residential properties not having common areas.
- b. When the outdoor lighting consists of only one luminaire.
- c. Code required lighting for steps, stairs, walkways, and building entrances.
- d. When in the opinion of the Authority, lighting levels must be maintained.
- e. Motion activated lighting.
- f. Lighting governed by special use permit in which times of operation are specifically identified.
- g. Businesses that operate on a 24 hour basis.

### IV. NON-RESIDENTIAL LIGHTING - User's Guide

This section addresses non-residential lighting and multiple-family residences having common spaces, such as lobbies, interior corridors or parking. Its intent is to:

- Limit the amount of light that can be used
- Minimize glare by controlling the amount of light that tends to create glare
- Minimize sky glow by controlling the amount of uplight
- Minimize the amount of off-site impacts or light trespass

This MLO provides two methods for determining compliance. The prescriptive method contains precise and easily verifiable requirements for luminaire light output and fixture design that limit glare, uplight, light trespass and the amount of light that can be used. The performance method allows greater flexibility and creativity in meeting the intent of the ordinance. Note that both the prescriptive and the performance method limit the amount of light that can be used, but do not control how the lighting is to be used.

Most outdoor lighting projects that do not involve a lighting professional will use the prescriptive method, because it is simple and does not require engineering expertise.

For the prescriptive method, the initial luminaire lumen allowances defined in Table A (Parking Space Method) or B (Hardscape Area Method) will provide basic lighting (parking lot and lighting at doors and/or sensitive security areas) that is consistent with the selected lighting zone. The prescriptive method is intended to provide a safe lighting environment while reducing sky glow and other adverse offsite impacts. The Per Parking Space Method is applicable in small rural towns and is a simple method for small retail “mom and pop” operations without drive lane access and where the parking lot is immediately adjacent to the road. A jurisdiction may

### IV. NON-RESIDENTIAL LIGHTING - User's Guide

For all non-residential properties, and for multiple residential properties of seven domiciles or more and having common outdoor areas, all outdoor lighting shall comply either with Part A or Part B of this section.

### **PRESCRIPTIVE METHOD - User's Guide**

also allow a prescriptive method for classes of sites, such as car dealerships, gas stations, or other common use areas.

Note that the values are for initial luminaire lumens, not footcandles on the target (parking lot, sidewalk, etc). Variables such as the efficiency of the luminaire, dispersion, and lamp wear can affect the actual amount of light so the lumens per square foot allowance is not equal to footcandles on the site. By specifying initial luminaire lumen values, it is easier for officials to verify that the requirement is being met. Initial luminaire lumens are available from photometric data. Each initial luminaire lumens calculation should be supplied on the submittal form.

Solid state luminaires, such as LEDs, do not have initial lamp lumens, only initial luminaire lumens (absolute photometry). Other luminaires tested with relative photometry will have initial luminaire lumens which can be calculated by multiplying initial lamp lumens by the luminaire efficiency. In this example, three types of luminaires are used to light a parking area and building entry in a light commercial area. Two of these three luminaires use metal halide lamps: 70 watt wall mounted area lights and 150 watt pole mounted area lights. For these, the Initial Luminaire Lumens is equal to the initial lamp lumens multiplied by the luminaire efficiency. These values are entered into the compliance chart. The lumen value for the building mounted LED luminaires is equal to the lumens exiting the luminaire. Therefore, the value already represents the Initial Luminaire Lumens and no luminaire efficiency is needed. The total Luminaire Lumens for the site is equal to 247,840.

The allowable lumens are based on the lighting zone and the total hardscape area. Referencing Table B, the allowed lumens are 2.5/SF for LZ2. Multiplying this by the total hardscape square footage gives a value of 250,000 lumens allowed. Because this value is greater than the value calculated for the site, the project complies. Listed below is an example on a typical compliance worksheet for the Prescriptive Method.

### **IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text**

#### **A. Prescriptive Method**

An outdoor lighting installation complies with this section if it meets the requirements of subsections 1 and 2, below.

##### **1. Total Site Lumen Limit**

The total installed initial luminaire lumens of all outdoor lighting shall not exceed the total site lumen limit. The total site lumen limit shall be determined using either the Parking Space Method (Table A) or the Hardscape Area Method (Table B). Only one method shall be used per permit application, and for sites with existing lighting, existing lighting shall be included in the calculation of total installed lumens.

The total installed initial luminaire lumens is calculated as the sum of the initial luminaire lumens for all luminaires.

**IV. NON-RESIDENTIAL LIGHTING (cont.) - User Guide**

In this example, three types of luminaires are used to light a parking area and building entry in a light commercial area. Two of these three luminaires use metal halide lamps: 70 watt wall mounted area lights and 150 watt pole mounted area lights. For these, the Initial Luminaire Lumens is equal to the initial lamp lumens multiplied by the luminaire efficiency. These values are entered into the compliance chart. The lumen value for the building mounted LED luminaires is equal to the lumens exiting the luminaire. Therefore, the value already represents the Initial Luminaire Lumens and no luminaire efficiency is needed. The total Luminaire Lumens for the site is equal to 247,840. The allowable lumens are based on the lighting zone and the total hardscape area. Referencing Table B, the allowed lumens are 2.5/SF for LZ2. Multiplying this by the total hardscape square footage gives a value of 250,000 lumens allowed. Because this value is greater than the value calculated for the site, the project complies.

**IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text**

PRESCRIPTIVE METHOD EXAMPLE - COMPLIANCE CHART			
Lamp Descriptions	Qty	Initial Luminaire Lumens	Total
70 W Metal Halide	8	3,920	31,360
150 W Metal Halide	20	9,600	192,000
18 W LED	24	1,020	24,480
TOTAL INITIAL LUMINAIRE LUMENS			247,840
SITE ALLOWED TOTAL INITIAL LUMENS*			250,000
PROJECT IS COMPLIANT?			YES

\* Below is the method of determining allowed total initial lumen for non-residential outdoor lighting using the hardscape area method. (Table B).

SITE ALLOWED TOTAL INITIAL LUMENS	
<i>SITE DESCRIPTION</i>	Light Commercial
<i>Lighting Zone</i>	LZ-2
<i>Hardscape Area (SF)</i>	100,000
<i>Allowed Lumens per SF of Hardscape (Table B)</i>	2.5
<i>Site Allowed Total Initial Lumens (lumens per SF X hardscape area)</i>	250,000

**PRESCRIPTIVE METHOD - User's Guide - continued**

**LIMITS TO OFF-SITE IMPACT**

The prescriptive method of the MLO restricts uplighting, including upward light emitted by decorative luminaires. A jurisdiction may choose to preserve some types of lighting, including lighting of monuments or historic structures. In this case, the adopting jurisdiction should exempt or otherwise regulate these types of lighting carefully so that it does not inadvertently allow glaring or offensive lighting systems.

Offsite effects of light pollution include glare, light trespass, sky glow, and impacts on the nocturnal environment . All of these are functions of the fixture or luminaire design and installation. This document replaces the previous luminaire classification terminology of full cut-off, semi cut-off, and cut-off because those classifications were not as effective in controlling offsite impacts as with the new IESNA luminaire classification system as described in TM-15-07.

A traditional method of defining light trespass is to identify a maximum light level at or near the property line. However, this method does not address offensive light that is not directed toward the ground, or the intensity of glaring light shining into adjacent windows. The requirements defined in Table C limit the amount of light in all quadrants that is directed toward or above the property line. The Backlight/Uplight/ Glare (BUG) rating will help limit both light trespass and glare. (A detailed explanation of the BUG system is provided in the section on Table C.)

The limits for light distribution established in Table C (for the BUG rating system) prevent or severely limit all direct upward light. A small amount of uplight reflected by snow, light-colored pavement or a luminaire's supporting arms is inevitable and is not limited by the prescriptive method of this ordinance.

**IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text  
PRESCRIPTIVE METHOD**

2. Limits to Off Site Impacts

All luminaires shall be rated and installed according to Table C.

3. Light Shielding for Parking Lot Illumination

All parking lot lighting shall have no light emitted above 90 degrees.

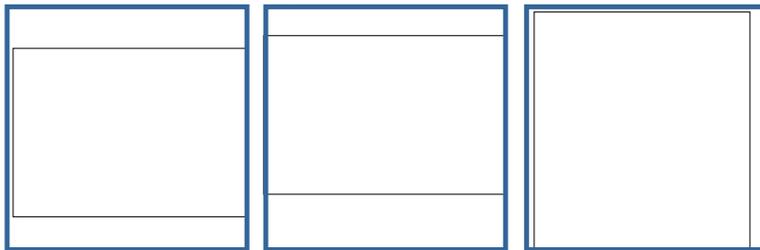
Exception:

a) Ornamental parking lighting shall be permitted by special permit only, and shall meet the requirements of Table C-1 for Backlight, Table C-2 for Uplight, and Table C-3 for Glare, without the need for external field-added modifications.

**PRESCRIPTIVE METHOD - User's Guide - continued**

**LIMITS TO OFF-SITE IMPACT**

A seemingly non-compliant fixture, such as a post-top translucent acorn luminaire, may in certain cases meet the BUG ratings, as long as it has proper interior baffling within the acorn globe. However, the BUG ratings in Table C will limit the use of the following types of luminaires in all lighting zones:



Barn Lights

Non-shielded  
Floodlights

Floodlights or lights  
not aimed  
downward

**IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text**

### PERFORMANCE METHOD - User's Guide

The performance method is best for projects with complex lighting requirements or when the applicant wants or needs more flexibility in lighting design. The performance method is also used when any lighting designer plans to aim or direct any light fixture upward (above 90 degrees). An engineer or lighting professional generally will be required to design within the performance method. An adopting jurisdiction may also wish to hire an engineer or lighting professional to review and approve projects using this method and/or incorporate review of the performance method into special review procedures.

The Performance Method is also best for projects where higher lighting levels are required compared to typical area lighting. An example might be a car sales lot where more light might be required on the new cars than would be needed for a standard parking lot. Another example is a gas station canopy requiring more light than a building entrance canopy.

The first step in the Performance Method regulates overlighting by establishing the Total Initial Site Lumens (Table D) that are allowed.

Allowances include the summation of the following (Table D):

- 1) Initial lumen allowance per site
- 2) Per area (SF) of hardscape

Table E allows additional lumens for unique site conditions.

Examples of allowances include:

- 1) Per building entrance/exit
- 2) Per length (linear feet) of Outdoor Sales Frontage Perimeter
- 3) Per area (SF) of Vehicle Service Station Canopy
- 4) Plus more ...

The Site Total Initial Site Lumens allowed are a combination of allowances from Table D and Table E.

### IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text

#### B. Performance Method

##### 1. Total Site Lumen Limit

The total installed initial luminaire lumens of all lighting systems on the site shall not exceed the allowed total initial site lumens. The allowed total initial site lumens shall be determined using Tables D and E. For sites with existing lighting, existing lighting shall be included in the calculation of total installed lumens.

The total installed initial luminaire lumens of all is calculated as the sum of the initial luminaire lumens for all luminaires.

**IV. NON-RESIDENTIAL LIGHTING - User's Guide - continued**

**LIMITS TO OFF-SITE IMPACT**

The second step in the Performance Method is to determine if the proposed luminaires are producing off site impacts such as glare, sky glow and light trespass. One may either use Option A which are the Maximum Allowable BUG Ratings in Table C, or Option B through computer lighting calculations show compliance with Maximum Vertical Illuminance

at any point in the plane of the property line in Table F. Option B will be required for all non-residential luminaires that

- A) do not have BUG ratings, or
- B) exceed the BUG ratings,
- C) are not fully shielded, or
- D) have adjustable mountings.

For the performance method, Option B (2) requires photometric calculations for the site perimeter, to a height of no less than 33 feet (10 meters) above the tallest luminaire. Vertical illuminances at eye height (5 feet above grade) will give values that can be used to verify compliance by comparing actual site conditions to the photometric plan submitted during review.

Note that the MLO specifies 'total initial luminaire lumens' as a measurement in addition to footcandles/lux. The footcandle (lux) is equal to one lumen per square meter. Lux is the metric unit and is equal to one lumen per square meter.

**IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text  
PERFORMANCE METHOD**

**2. Limits to Off Site Impacts**

All luminaires shall be rated and installed using either Option A or Option B. Only one option may be used per permit application.

Option A: All luminaires shall be rated and installed according to Table C.

Option B: The entire outdoor lighting design shall be analyzed using industry standard lighting software including inter-reflections in the following manner:

- 1) Input data shall describe the lighting system including luminaire locations, mounting heights, aiming directions, and employing photometric data tested in accordance with IES guidelines. Buildings or other physical objects on the site within three object heights of the property line must be included in the calculations.
- 2) Analysis shall utilize an enclosure comprised of calculation planes with zero reflectance values around the perimeter of the site. The top of the enclosure shall be no less than 33 feet (10 meters) above the tallest luminaire. Calculations shall include total lumens upon the inside surfaces of the box top and vertical sides and maximum vertical illuminance (footcandles and/or lux) on the sides of the enclosure.

The design complies if:

- a) The total lumens on the inside surfaces of the virtual enclosure are less than 15% of the total site lumen limit; and
- b) The maximum vertical illuminance on any vertical surface is less than the allowed maximum illuminance per Table F.

### **DESIGN COMPLIANCE – User Guide**

The application form will require information about the number of luminaires, the number of lamps in each luminaire, the initial luminaire lumens for each luminaire and the initial lumen output for each lamp (based on the wattage and type of lamp selected) as well as plans showing the site area measurements. This will allow the reviewer to verify that the lumen output of all the luminaires does not exceed the allowance.

Field verification can be achieved by asking the applicant and/or owner to verify that the luminaire type, lamp type and wattages specified have been used. Also ask the applicant for photometric data for each luminaire, since the initial luminaire lumens and B-U-G ratings are stated on the photometric report.

However, if a jurisdiction requires additional on-site verification, it may also request a point-by-point photometric plan. While this will not be a true measure of compliance with the criteria of this Ordinance, comparing the actual measured levels on site to the photometric plan can be an indication whether or not the installed lighting varies from the approved design.

**V. RESIDENTIAL LIGHTING – User Guide**

This section applies to single family home, duplexes, row houses, and low rise multi-family buildings of 6 dwelling units or less.

**RESIDENTIAL LIGHTING EXCEPTIONS**

The exceptions allow for typical lighting that might exceed the specified limits.

Landscape Lighting - While not common in residential areas, it can cause light pollution and light trespass if it is not controlled.

Lighting controlled by Vacancy (Motion) Sensor - Reduces light pollution and light trespass and should be encouraged.

**RESIDENTIAL LIGHTING EXAMPLE**

In this example on the following page, five different luminaires are used on a residential property. Each luminaire must comply to meet the requirements. The site plan following shows luminaire types followed by a tabulation of each luminaire, whether or not it is fully shielded, lamp type, and initial luminaire lumens. If the luminaire lumens are not known, multiply the initial lamp lumens by the luminaire efficiency. If the efficiency is not known, multiply the initial lamp lumens by 0.7 as a reasonable assumption. The maximum allowable lumen values come from Table G, based on the shielding classification and location on the site. In this case, each luminaire complies with the requirements of Table G.

Comparison of efficacy by power (120 Volt Incandescent lamps)			
OUTPUT (Lumens)	POWER (WATT)		
	Incandescent	CFL	LED
500	40	8-10	9
850	60	13-18	12-15
1,200	75	18-22	15
1,700	100	23-28	18

**V. RESIDENTIAL LIGHTING – User Guide**

**A. General Requirements**

For residential properties including multiple residential properties not having common areas, all outdoor luminaires shall be fully shielded and shall not exceed the allowed lumen output in Table G, row 2.

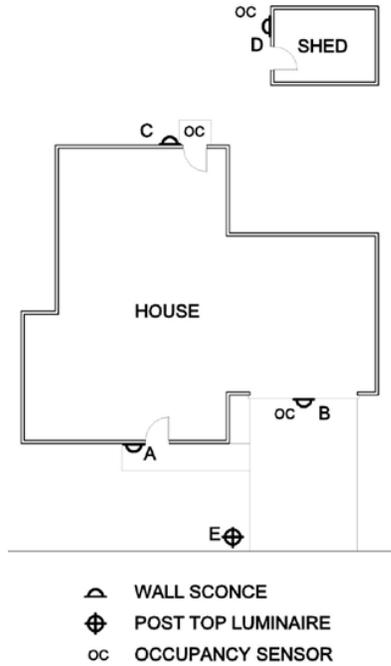
Exceptions

1. One partly shielded or unshielded luminaire at the main entry, not exceeding the lumen output in Table G - row 1.
2. Any other partly shielded or unshielded luminaires not exceeding the allowed lumen output in Table G - row 3.
3. Low voltage landscape lighting aimed away from adjacent properties and not exceeding the allowed lumen output in Table G- row 4.
4. Shielded directional flood lighting aimed so that direct glare is not visible from adjacent properties and not exceeding the allowed lumen output in Table G row 5.
5. Open flame gas lamps.
6. Lighting installed with a vacancy sensor, where the sensor extinguishes the lights no more than 15 minutes after the area is vacated.
7. Lighting exempt per Section III (B.).

**B. Requirements for Residential Landscape Lighting**

1. Shall comply with Table G.
2. Shall not be aimed onto adjacent properties.

V. RESIDENTIAL LIGHTING – User Guide



PROPERTY TYPE: RESIDENTIAL - LIGHTING ZONE 1								
Luminaire Type	Where	description	Lamp Type	Fully Shielded	Initial Luminaires Lumens*	Max Allow (Table G)	Controls	Compliant?
A	Front Entry	Decorative Wall Sconce	9W CFL	No	420	420	None	Yes
B	Garage Door	Fully Shielded Wall Pack	23W CFL	Yes	1050	1260	Occupancy Sensor	Yes
C	Back Entry	Decorative Wall Sconce	7W CFL	No	280	315	Occupancy Sensor	Yes
D								
E								

### VI. LIGHTING BY SPECIAL PERMIT ONLY - User's Guide

This section addresses types of lighting that are intrusive or complex in their impacts and need a higher level of scrutiny and/or site sensitivity.

It should be noted that safety could be compromised if lighting conforming to this ordinance is located adjacent to excessively bright and/or glaring lighting.

It is important that the authority set clear and reasonable guidelines for applying for a special lighting use permit, and establish rules and procedures for granting or refusing them. They may differ from existing special use policies, in which case one or the other may be changed to achieve the overall goal of effective lighting without glare, sky glow, or light trespass.

#### SPORTS FIELD LIGHTING

For athletic and sports fields, the appropriate level of lighting will depend on the Class of Play and Facilities. Class of Play is divided into 4 categories, depending on the number of fixed spectator seats. (Competition play intended for nighttime TV broadcast may require higher lighting levels).

**CLASS I:** Competition play at facilities with 5,000 or more fixed spectator seats. (Professional, Colleges & Universities, some Semi-Professional & Large Sports Clubs)

**CLASS II:** Games at facilities with over 1,500 fixed spectator seats. (Smaller Universities and Colleges, some Semi-pro, large amateur leagues and high schools with large spectator facilities)

**CLASS III:** Games at facilities with over 500 fixed spectator seats. (Sports Clubs and amateur leagues, some high schools and large training professional training facilities with spectator sections)

**CLASS IV:** Competition or recreational play at facilities with 500 fixed spectator seats or less. Class IV Class of Play applies to games at which family and close friends of the players and staff are usually the majority of spectators. (Smaller amateur leagues, park and recreation department facilities, most Little Leagues smaller high schools, elementary and middle schools, and social events)

### VI. LIGHTING BY SPECIAL PERMIT ONLY - ORDINANCE TEXT

#### A. High Intensity and Special Purpose Lighting

The following lighting systems are prohibited from being installed or used except by special use permit:

1. Temporary lighting in which any single luminaire exceeds 20,000 initial luminaire lumens or the total lighting load exceeds 160,000 lumens.
2. Aerial Lasers.
3. Searchlights.
4. BOther very intense lighting defined as having a light source exceeding 200,000 initial luminaire lumens or an intensity in any direction of more than 2,000,000 candelas.

#### 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.

### **SPORTS FIELD LIGHTING - continued**

When Class of Play is above Class IV, a dual control should be installed to limit illumination to Class IV levels during practices where spectators are fewer than 500.

(See IES Recommended Practice for Sports and Recreational Area Lighting RP-6)

### **VII. EXISTING LIGHTING - User's Guide**

Adoption of this section on existing lighting is strongly encouraged.

If the adopting jurisdiction has criteria in place that require a property to come into compliance with the current zoning ordinance, it is recommended that the criteria also be applied to bringing existing lighting into compliance. If there are no established criteria, this section of the MLO is recommended.

Amortization allows existing lighting to gradually and gracefully come into compliance. Substantial changes or additions to existing properties are considered the same as new construction, and must comply.

Most outdoor lighting can be fully depreciated once it is fully amortized, usually no longer than 10 years, if not sooner, from the date of initial installation. Some jurisdictions may prefer to require phase-out in a substantially shorter period. The Authority may also wish to require compliance much sooner for “easy fixes” such as re-aiming or lowering lumen output of lamps. Where lighting is judged to be a safety hazard, immediate compliance can be required.

### **VI. LIGHTING BY SPECIAL PERMIT ONLY - ORDINANCE TEXT**

- 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.

### **VII. EXISTING LIGHTING - ORDINANCE TEXT**

Lighting installed prior to the effective date of this ordinance shall comply with the following.

#### **A. Amortization**

On or before [amortization date], all outdoor lighting shall comply with this Code.

#### **B. New Uses or Structures, or Change of Use**

Whenever there is a new use of a property (zoning or variance change) or the use on the property is changed, all outdoor lighting on the property shall be brought into compliance with this Ordinance before the new or changed use commences.

#### **C. Additions or Alterations**

##### **1. Major Additions.**

If a major addition occurs on a property, lighting for the entire property shall comply with the requirements of this Code. For purposes of this section, the following are considered to be major additions:

**VII. EXISTING LIGHTING - ORDINANCE TEXT**

Additions of 25 percent or more in terms of additional dwelling units, gross floor area, seating capacity, or parking spaces, either with a single addition or with cumulative additions after the effective date of this Ordinance.

Single or cumulative additions, modification or replacement of 25 percent or more of installed outdoor lighting luminaires existing as of the effective date of this Ordinance.

- 2. Minor Modifications, Additions, or New Lighting Fixtures for Non-residential and Multiple Dwellings  
For non-residential and multiple dwellings, all additions, modifications, or replacement of more than 25 percent of outdoor lighting fixtures existing as of the effective date of this Ordinance shall require the submission of a complete inventory and site plan detailing all existing and any proposed new outdoor lighting.

Any new lighting shall meet the requirements of this Ordinance.

- 3. Resumption of Use after Abandonment  
If a property with non-conforming lighting is abandoned for a period of six months or more, then all outdoor lighting shall be brought into compliance with this Ordinance before any further use of the property occurs.

**VIII. ENFORCEMENT AND PENALTIES - User's Guide**

Enforcement and penalties will vary by jurisdiction. There are, however, certain practices that will promote compliance with lighting regulations. Education is a key tool in promoting compliance. Proactive enforcement procedures can include providing a copy of the lighting regulations to every contractor at the time they visit to obtain a building permit. Another effective tool is a requirement that the builder or developer acknowledge in writing that the he or she is familiar with the lighting requirements and will submit a lighting plan for approval.

**VIII. ENFORCEMENT AND PENALTIES - Ordinance Text**

**(RESERVED)**

**VIII. ENFORCEMENT AND PENALTIES (cont.) - User’s Guide**

Submission of the Lighting Plan should be required as a precondition to any approvals. The Lighting Plan should include the location and BUG rating for each luminaire, specify whether compliance is by the performance or prescriptive method, and a worksheet to show that the luminaires and their BUG ratings are compliant.

**IX. TABLES - User’s Guide**

The tables are to be reviewed periodically by a joint committee of the IES and IDA, and adjusted as standards and technology permit. If more research on the impacts of outdoor lighting shows the effects of light pollution to be a significant concern, then the values in the tables may be modified. Such changes will have no significant impact to the balance of the language of the Ordinance or Code.

**VIII. ENFORCEMENT AND PENALTIES (cont.) - User’s Guide**

**IX. TABLES - Ordinance Text**

**Table A - Allowed Total Initial Luminaire Lumens per Site for Non-residential Outdoor Lighting, Per Parking Space Method.** May only be applied to properties up to 10 parking spaces (including handicapped accessible spaces).

LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
350 Lumens Per space	490 Lumens Per space	630 Lumens Per space	840 Lumens Per space	1,050 Lumens Per space

**Table B - Allowed Total Initial Lumens per Site for Non-residential Outdoor Lighting, Hardscape Area Method**

May be used for any project. When lighting intersections of site drives and public streets or road, a total of 600 square feet for each intersection may be added to the actual site hardscape area to provide for intersection lighting.

LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
0.5 lumens per SF of hardscape	1.25 lumens per SF of hardscape	2.5 lumens per SF of hardscape	5.0 lumens per SF of hardscape	7.5 lumens per SF of hardscape

IX. TABLES - Ordinance Text

TABLE B – Allowed Lumens Per Square Foot

	LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
Base Allowance of lumens per SF of Hardscape	0.5	1.25	2.5	5.0	7.5
<b>Additional allowances for sales and service facilities. No more than two additional allowances per site, Use it or Lose it.</b>					
Outdoor Sales Lots. This allowance is lumens per square foot of uncovered sales lots used exclusively for the display of vehicles or other merchandise for sale, and may not include driveways, parking or other non sales areas. To use this allowance, luminaires must be within 2 mounting heights of sales lot area.	0	4 lumens per square foot	8 lumens per square foot	16 lumens per square foot	16 lumens per square foot
Outdoor Sales Frontage. This allowance is for lineal feet of sales frontage immediately adjacent to the principal viewing location(s) and unobstructed for its viewing length. A corner sales lot may include two adjacent sides provided that a different principal viewing location exists for each side. In order to use this allowance, luminaires must be located between the principal viewing location and the frontage outdoor sales area	0	0	1,000 Per Linear foot	1,500 Per Linear foot	2,000 Per Linear foot
Drive Up Windows. In order to use this allowance, luminaires must be within 20 feet horizontal distance of the center of the window.	0	2,000 lumens per drive-up window	4,000 lumens per drive-up window	8,000 lumens per drive-up window	8,000 lumens per drive-up window
Vehicle Service Station. This allowance is lumens per installed fuel pump.	0	4,000 L Per pump	8,000 L Per pump	16,000 L Per pump	24,000 L Per pump

**IX. TABLES - TABLE C BUG RATING - User’s Guide**

Work on the BUG system started in 2005 when the IES upgraded the roadway cutoff classification system. The original system, which included the ratings full cutoff, cutoff, semi-cutoff and non cutoff, had been designed as a rating system focused on brightness and glare control. However, with increasing demand for control of uplight and light trespass in addition to glare, IES realized that a more comprehensive system was needed. IES developed TM-15 Luminaire Classification System for Outdoor Luminaires.

As this is a relatively new rating system, and many people may not be familiar with it, more explanation of how the rating system works is provided here. For example, some people are familiar with terms such as “full cutoff” and they may expect the MLO to include those terms. It will be very important that all groups recognize that older terms and concepts are inadequate for the complex tasks of controlling light pollution. It is recommended that the new rating system adopted in TM-15, as followed herein by the MLO, be used intact and exclusively.

BUG requires downlight only with low glare (better than full cut off) in lighting zones 0, 1 and 2, but allows a minor amount of uplight in lighting zones 3 and 4. In lighting zones 3 and 4, the amount of allowed uplight is enough to permit the use of very well shielded luminaires that have a decorative drop lens or chimney so that dark sky friendly lighting can be installed in places that traditional-appearing luminaires are required. BUG typically cannot be used for residential luminaires unless they have been photometrically tested. For non-photometrically tested residential luminaires, shielding description is used instead.

The lumen limits established for each lighting zone apply to all types of lighting within that zone. This includes, but is not limited to, specialty lighting, façade lighting, security lighting and the front row lighting for auto dealerships. BUG rating limits are defined for each luminaire and

**IX. TABLES - Ordinance Text**

**Table C - Maximum Allowable Backlight, Uplight and Glare (BUG) Ratings**

May be used for any project. A luminaire may be used if it is rated for the lighting zone of the site or lower in number for all ratings B, U and G. Luminaires equipped with adjustable mounting devices permitting alteration of luminaire aiming in the field shall not be permitted.

<b>TABLE C-1 Allowed Backlight Rating*</b>	<b>LZ-0</b>	<b>LZ-1</b>	<b>LZ-2</b>	<b>LZ-3</b>	<b>LZ-4</b>
Greater than 2 mounting heights from property line	<b>B1</b>	<b>B3</b>	<b>B4</b>	<b>B5</b>	<b>B5</b>
1 to less than 2 mounting heights from property line and ideally oriented**	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B4</b>	<b>B4</b>
0.5 to 1 mounting heights from property line and ideally oriented**	<b>B0</b>	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B3</b>
Less than 0.5 mounting height to property line and properly oriented*	<b>B0</b>	<b>B0</b>	<b>B0</b>	<b>B1</b>	<b>B2</b>

\*For property lines that abut public walkways, bikeways, plazas, and parking lots, the property line may be considered to be 5 feet beyond the actual property line for purpose of determining compliance with this section. For property lines that abut public roadways and public transit corridors, the property line may be considered to be the center-line of the public roadway or public transit corridor for the purpose of determining compliance with this section. NOTE: This adjustment is relative to Table C-1 and C-3 only and shall not be used to increase the lighting area of the site.

\*\* To be considered 'ideally oriented', the luminaire must be mounted with the backlight portion of the light output oriented perpendicular and towards the property line of concern.

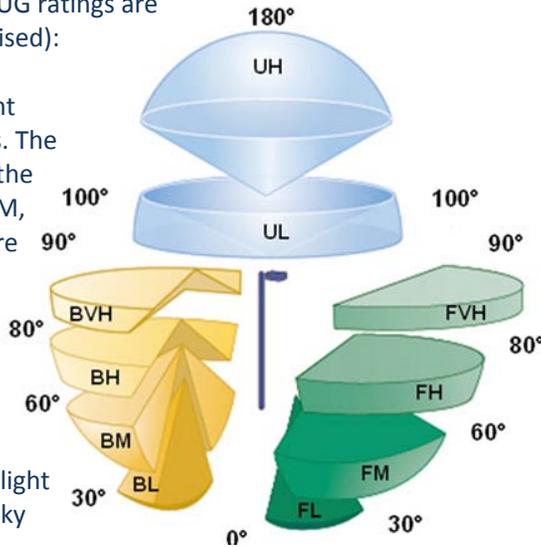
**IX. TABLES - TABLE C BUG RATING - User's Guide – cont.**

**IX. TABLES - Ordinance Text**

are based on the internal and external design of the luminaire, its aiming, and the initial luminaire lumens of the specified luminaires. The BUG rating limits also take into consideration the distance the luminaire is installed from the property line in multiples of the mounting height (See Table C).

The three components of BUG ratings are based on IES TM-15-07 (revised):

Backlight, which creates light trespass onto adjacent sites. The B rating takes into account the amount of light in the BL, BM, BH and BVH zones, which are in the direction of the luminaire OPPOSITE from the area intended to be lighted.



Uplight, which causes artificial sky glow. Lower uplight (zone UL) causes the most sky glow and negatively affects professional and academic astronomy. Upper uplight (UH) not reflected off a surface is mostly energy waste. The U rating defines the amount of light into the upper hemisphere with greater concern for the light at or near the horizontal angles (UL).

Glare, which can be annoying or visually disabling. The G rating takes into account the amount of frontlight in the FH and FVH zones as well as BH and BVH zones.

BUG ratings apply to the Lighting Zone of the property under consideration.

IX. TABLES - TABLE C BUG RATING - User’s Guide – cont.

(Key: **UH**=Uplight High, **UL**=Uplight Low, **BVH**=Backlight Very High, **BH**=Backlight High, **BM**=Backlight Medium, **BL**=Backlight Low, **FVH**=Forward Light Very High, **FH**=Forward Light High, **FM**=Forward Light Medium, **FL**=Forward Light Low.)

In general, a higher BUG rating means more light is allowed in solid angles, and the rating increases with the lighting zone. However, a higher B (backlight) rating simply indicates that the luminaire directs a significant portion of light behind the pole, so B ratings are designated based on the location of the luminaire with respect to the property line. A high B rating luminaire maximizes the spread of light, and is effective and efficient when used far from the property line. When luminaires are located near the property line, a lower B rating will prevent unwanted light from interfering with neighboring properties.

At the 90-180 degree ranges:

- Zone 0 allows no light above 90 degrees.
- Zone 1 allows only 10 lumens in the UH and UL zones, 20 lumens total in the complete upper hemisphere. (This is roughly equivalent to a 5 W incandescent lamp).
- Zone 2 allows only 50 lumens in the UH and UL zones, 100 lumens total (less than a 25W incandescent lamp).
- Zone 3 allows only 500 lumens in the UH and UL zones, 1000 lumens total (about the output of a 75W incandescent bulb).
- Zone 4 allows only 1,000 lumens in the UH and UL zones, 2000 lumens total (about the output of a 100W incandescent bulb).

IX. TABLES - Ordinance Text

TABLE C-2 - Maximum Allowable Uplight (BUG) Ratings - Continued

TABLE C-2	LZ0	LZ1	LZ2	LZ3	LZ4
Allowed Uplight Rating	U0	U1	U2	U3	U4
<b>Allowed Uplight Rating for Street or Area Lighting</b>	<b>U0</b>	<b>U0</b>	<b>U0</b>	<b>U0</b>	<b>U0</b>

Table C - 3 Maximum Allowable Glare (BUG) Ratings - Continued

TABLE C-3	LZ0	LZ1	LZ2	LZ3	LZ4
Allowed Glare Rating	G0	G1	G2	G3	G4
Any luminaire not ideally oriented*** with 1 to less than 2 mounting heights to any property line of concern	G0	G0	G1	G1	G2
Any luminaire not ideally oriented*** with 0.5 to 1 mounting heights to any property line of concern	G0	G0	G0	G1	G1
Any luminaire not ideally oriented*** with less than 0.5 mounting heights to any property line of concern	G0	G0	G0	G0	G1

\*\*\* Any luminaire that cannot be mounted with its backlight perpendicular to any property line within 2X the mounting heights of the luminaire location shall meet the reduced Allowed Glare Rating in Table C-3.

TABLE D EXAMPLE - PERFORMANCE METHOD - User’s Guide

The first step in the Performance Method is to establish the Site Total Initial Site Lumens which regulates overlighting. The performance method allows layers of light depending on the complexity of the site.

Table D establishes the basic total initial site lumens allowed. These lumen allowances are added together for a total initial site lumen allowance. Allowances include:

- 1) Initial lumen allowance per site
- 2) Per area (SF) of hardscape

IX. TABLES - Ordinance Text

**Table D Performance Method Allowed Total Initial Site Lumens**

May be used on any project.

	LZ0	LZ1	LZ2	LZ3	LZ4
Allowed Lumens Per SF	0.5	1.25	2.5	5.0	7.5
Allowed Base Lumens Per Site	0	3,500	7,000	14,000	21,000

**Table E Performance Method Additional Initial Luminaire Lumen**

**Allowances.** All of the following are “use it or lose it” allowances.

All area and distance measurements in plain view unless otherwise noted.

	LZ0	LZ1	LZ2	LZ3	LZ4
Additional Lumens Allowances for All Buildings except service stations and outdoor sales facilities. A MAXIMUM OF THREE (3) ALLOWANCES ARE PERMITTED. THESE ALLOWANCES ARE “USE IT OR LOSE IT”.					
<b>Building Entrances or Exits.</b> This allowance is per door. In order to use this allowance, luminaires must be within 20 feet of door.	400	1,000	2,000	4,000	6,000
Building Facades. This allowance is lumens per unit area of building façade that are illuminated. To use this allowance, luminaires must be aimed at the façade and capable of illuminating it without obstruction.	0	0	8 lumens per square foot	16 lumens per square foot	24 lumens per square foot

**TABLE E PERFORMANCE METHOD - User’s Guide**

The allowable light levels for these uses defined in Table E may be used to set a prescriptive lighting allowance for these uses in each lighting zone. It should be noted that the lighting allowance defined in Table E is only applicable for the area defined for that use and cannot be transferred to another area of the site. For some uses, such as outdoor sales, the jurisdiction is encouraged to define a percentage of the total hardscape area that is eligible for the additional lighting allowance. For example, a set percentage of a car dealership's lot may be considered a display area and receive the additional lighting allowance where the remainder of the lot would be considered storage, visitor parking, etc. and cannot exceed the base light levels defined in Table A.

**IX. TABLES - Ordinance Text**

**Table E - Performance Method Additional Initial Lumen Allowances (cont.)**

Lighting Application	LZ0	LZ1	LZ2	LZ3	LZ4
(Lumens Allowed Per Square Foot)					
<b>Sales or Non-sales Canopies.</b> This allowance is lumens per unit area for the total area within the drip line of the canopy. In order to qualify for this allowance, luminaires must be located under the canopy.	0	3	6	12	18
<b>Guard Stations.</b> This allowance is lumens per unit area of guardhouse plus 2000 sf per vehicle lane. In order to use this allowance, luminaires must be within 2 mounting heights of a vehicle lane or the guardhouse.	0	6	12	24	36
<b>Outdoor Dining.</b> This allowance is lumens per unit area for the total illuminated hardscape of outdoor dining. In order to use this allowance, luminaires must be within 2 mounting heights of the hardscape area of outdoor dining	0	1	5	10	15
<b>Drive Up Windows.</b> This allowance is lumens per window. In order to use this allowance, luminaires must be within 20 feet of the center of the window.	0	2000 Per drive up wind ow	4000 Per drive up wind ow	8000 Per drive up wind ow	8000 Per drive up wind ow
<b>Additional Lumens Allowances for Service Stations only. Service stations may not use any other additional allowances.</b>					
<b>Vehicle Service Station Hardscape.</b> This allowance is lumens per unit area for the total illuminated hardscape area less area of buildings, area under canopies, area off property, or areas obstructed by signs or structures. In order to use this allowance, luminaires must be illuminating the hardscape area and must not be within a building, below a canopy, beyond property lines, or obstructed by a sign or other structure.	0	4	8	16	24

IX. TABLES - Ordinance Text

Table E - Performance Method Additional Initial Lumen Allowances (cont.)

Lighting Application	LZ0	LZ1	LZ2	LZ3	LZ4
	(Lumens Allowed Per Square Foot)				
<p><b>Vehicle Service Station Canopies.</b> This allowance is lumens per unit area for the total area within the drip line of the canopy. In order to use this allowance, luminaires must be located under the canopy.</p>	0	8	16	32	32
<p>Additional Lumens Allowances for Outdoor Sales facilities only. Outdoor Sales facilities may not use any other additional allowances. NOTICE: lighting permitted by these allowances shall employ controls extinguishing this lighting after a curfew time to be determined by the Authority.</p>					
<p><b>Outdoor Sales Lots.</b> This allowance is lumens per square foot of uncovered sales lots used exclusively for the display of vehicles or other merchandise for sale, and may not include driveways, parking or other non sales areas and shall not exceed 25% of the total hardscape area. To use this allowance, Luminaires must be within 2 mounting heights of the sales lot area.</p>	0	4	8	12	16
<p><b>Outdoor Sales Frontage.</b> This allowance is for lineal feet of sales frontage immediately adjacent to the principal viewing location(s) and unobstructed for its viewing length. A corner sales lot may include two adjacent sides provided that a different principal viewing location exists for each side. In order to use this allowance, luminaires must be located between the principal viewing location and the frontage outdoor sales area.</p>	0	0	1000 Per lin- Ear foot	1500 Per lin- Ear foot	2000 Per lin- Ear foot

**IX. TABLES - Ordinance Text**

**Table F Maximum Vertical Illuminance at any point in the plane of the property line**

<b>LZ0</b>	<b>LZ1</b>	<b>LZ2</b>	<b>LZ3</b>	<b>LZ4</b>
<b>0.05 FC or 0.5 LUX</b>	<b>0.1 FC or 1.0 LUX</b>	<b>0.3 FC or 3.0 LUX</b>	<b>0.8 FC or 8.0 LUX</b>	<b>1.5 FC or 15 LUX</b>

**TABLE G RESIDENTIAL LIGHTING - User’s Guide**

**Residential Light Levels**

Most residential lighting has traditionally used incandescent lamps which are identified by their wattage. However, since new technologies provide more light for fewer watts, it is no longer possible to regulate residential lighting solely by providing a maximum wattage. Table G, therefore, lists maximum initial luminaire lumens only.

**IX. TABLES - Ordinance Text**

**Table G - Residential Lighting Limits – in Lumens**

	<b>LZ0</b>	<b>LZ1</b>	<b>LZ2</b>	<b>LZ3</b>	<b>LZ4</b>
<b>Row 1</b> Maximum Allowed Luminaire Lumens* for Unshielded Luminaires at one entry only	Not Allowed	420	630	630	630
<b>Row 2</b> Maximum Allowed Luminaire Lumens* for each Fully Shielded Luminaire	630	1,260	1,260	1,260	1,260
<b>Row 3</b> Maximum Allowed Luminaire Lumens* for each Unshielded Luminaire excluding main entry	Not Allowed	315	315	315	315
<b>Row 4</b> Maximum Allowed Luminaire Lumens* for each Landscape Lighting	Not Allowed	Not Allowed	1,050	2,100	2,100
<b>Row 5</b> Maximum Allowed Luminaire Lumens* for each Shielded Directional Flood Lighting	Not Allowed	Not Allowed	1,260	2,100	2,100
<b>Row 6</b> Maximum Allowed Luminaire Lumens* for each Low Voltage Landscape Lighting	Not Allowed	Not Allowed	525	525	525

**X. DEFINITIONS - User’s Guide**

Definitions are typically generally added to any code when new code sections are added. The definitions are legally required and play a significant role in the interpretation of the ordinance and code.

Most city attorneys will not accept references to outside sources regardless of credibility, such as the IES Handbook. Thus as a general rule, a definition for an unfamiliar term (e.g. lumens) must be added by the adopting ordinance.

When adopting or integrating the MLO definitions, be sure to retire conflicting technical terminology. In particular, the latest IES Luminaire Classification System as defined in IES TM-15-07 is likely to need attention.

**X. DEFINITIONS - Ordinance Text**

<b><i>Absolute Photometry</i></b>	Photometric measurements (usually of a solid-state luminaire) that directly measures the footprint of the luminaire. Reference Standard IES LM-79
<b><i>Architectural Lighting</i></b>	Lighting designed to reveal architectural beauty, shape and/or form and for which lighting for any other purpose is incidental.
<b><i>Authority</i></b>	The adopting municipality, agency or other governing body.
<b><i>Astronomic Time Switch</i></b>	An automatic lighting control device that switches outdoor lighting relative to time of solar day with time of year correction.
<b><i>Backlight</i></b>	For an exterior luminaire, lumens emitted in the quarter sphere below horizontal and in the opposite direction of the intended orientation of the luminaire. For luminaires with symmetric distribution, backlight will be the same as front light.
<b><i>BUG</i></b>	A luminaire classification system that classifies backlight (B), uplight (U) and glare (G).
<b><i>Canopy</i></b>	A covered, unconditioned structure with at least one side open for pedestrian and/or vehicular access. (An unconditioned structure is one that may be open to the elements and has no heat or air conditioning.)
<b><i>Common Outdoor Areas</i></b>	One or more of the following: a parking lot; a parking structure or covered vehicular entrance; a common entrance or public space shared by all occupants of the domiciles.
<b><i>Curfew</i></b>	A time defined by the authority when outdoor lighting is reduced or extinguished.



**X. DEFINITIONS - Ordinance Text**

<b><i>Emergency conditions</i></b>	Generally, lighting that is only energized during an emergency; lighting fed from a backup power source; or lighting for illuminating the path of egress solely during a fire or other emergency situation; or, lighting for security purposes used solely during an alarm.
<b><i>Footcandle</i></b>	The unit of measure expressing the quantity of light received on a surface. One footcandle is the illuminance produced by a candle on a surface one foot square from a distance of one foot.
<b><i>Forward Light</i></b>	For an exterior luminaire, lumens emitted in the quarter sphere below horizontal and in the direction of the intended orientation of the luminaire.
<b><i>Fully Shielded Luminaire</i></b>	A luminaire constructed and installed in such a manner that all light emitted by the luminaire, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal plane through the luminaire's lowest light-emitting part.
<b><i>Glare</i></b>	Lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.
<b><i>Hardscape</i></b>	Permanent hardscape improvements to the site including parking lots, drives, entrances, curbs, ramps, stairs, steps, medians, walkways and non-vegetated landscaping that is 10 feet or less in width. Materials may include concrete, asphalt, stone, gravel, etc.
<b><i>Hardscape Area</i></b>	The area measured in square feet of all hardscape. It is used to calculate the Total Site Lumen Limit in both the Prescriptive Method and Performance Methods. Refer to Hardscape definition.

X. DEFINITIONS - Ordinance Text

<b><i>Hardscape Perimeter</i></b>	The perimeter measured in linear feet is used to calculate the Total Site Lumen Limit in the Performance Method. Refer to Hardscape definition.
<b><i>IDA</i></b>	International Dark-Sky Association.
<b><i>IESNA</i></b>	Illuminating Engineering Society of North America.
<b><i>Impervious Material</i></b>	Sealed to severely restrict water entry and Movement.
<b><i>Industry Standard Lighting Software</i></b>	Lighting software that calculates point-by-point illuminance that includes reflected light using either ray-tracing or radiosity methods.
<b><i>Lamp</i></b>	A generic term for a source of optical radiation (i.e. “light”), often called a “bulb” or “tube”. Examples include incandescent, fluorescent, high-intensity discharge (HID) lamps, and low pressure sodium (LPS) lamps, as well as light-emitting diode (LED) modules and arrays.
<b><i>Landscape Lighting</i></b>	Lighting of trees, shrubs, or other plant material as well as ponds and other landscape features.
<b><i>LED</i></b>	Light Emitting Diode.
<b><i>Light Pollution</i></b>	Any adverse effect of artificial light including, but not limited to, glare, light trespass, sky-glow, energy waste, compromised safety and security, and impacts on the nocturnal environment.

X. DEFINITIONS - Ordinance Text

<b><i>Light Trespass</i></b>	Light that falls beyond the property it is intended to illuminate.
<b><i>Lighting</i></b>	“Electric” or “man-made” or “artificial” lighting. See “lighting equipment”.
<b><i>Lighting Equipment</i></b>	Equipment specifically intended to provide gas or electric illumination, including but not limited to, lamp(s), luminaire(s), ballast(s), poles, posts, lens(s), and related structures, electrical wiring, and other necessary or auxiliary components.
<b><i>Lighting Zone</i></b>	An overlay zoning system establishing legal limits for lighting for particular parcels, areas, or districts in a community.
<b><i>Low Voltage Landscape Lighting</i></b>	Landscape lighting powered at less than 15 volts and limited to luminaires having a rated initial luminaire lumen output of 525 lumens or less.
<b><i>Lumen</i></b>	The unit of measure used to quantify the amount of light produced by a lamp or emitted from a luminaire (as distinct from “watt,” a measure of power consumption).
<b><i>Luminaire</i></b>	The complete lighting unit (fixture), consisting of a lamp, or lamps and ballast(s) (when applicable), together with the parts designed to distribute the light (reflector, lens, diffuser), to position and protect the lamps, and to connect the lamps to the power supply.

X. DEFINITIONS - Ordinance Text

Mounting Height: The horizontal spacing of poles is often measured in units of “mounting height”. Example: “The luminaires can be spaced up to 4 mounting heights apart.”

<b>Luminaire Lumens</b>	For luminaires with relative photometry per IES, it is calculated as the sum of the initial lamp lumens for all lamps within an individual luminaire, multiplied by the luminaire efficiency. If the efficiency is not known for a residential luminaire, assume 70%. For luminaires with absolute photometry per IES LM-79, it is the total luminaire lumens. The lumen rating of a luminaire assumes the lamp or luminaire is new and has not depreciated in light output.
<b>Lux</b>	The SI unit of illuminance. One lux is one lumen per square meter. 1 Lux is a unit of incident illuminance approximately equal to 1/10 footcandle.
<b>Mounting height</b>	The height of the photometric center of a luminaire above grade level.
<b>New lighting</b>	Lighting for areas not previously illuminated; newly installed lighting of any type except for replacement lighting or lighting repairs.
<b>Object</b>	A permanent structure located on a site. Objects may include statues or artwork, garages or canopies, outbuildings, etc.
<b>Object Height</b>	The highest point of an entity, but shall not include antennas or similar structures.
<b>Ornamental lighting</b>	Lighting that does not impact the function and safety of an area but is purely decorative, or used to illuminate architecture and/or landscaping, and installed for aesthetic effect.

X. DEFINITIONS - Ordinance Text

<p><b><i>Ornamental Street Lighting</i></b></p>	<p>A luminaire intended for illuminating streets that serves a decorative function in addition to providing optics that effectively deliver street lighting. It has a historical period appearance or decorative appearance, and has the following design characteristics:</p> <ul style="list-style-type: none"> <li>· designed to mount on a pole using an arm, pendant, or vertical tenon;</li> <li>· opaque or translucent top and/or sides;</li> <li>· an optical aperture that is either open or enclosed with a flat, sag or drop lens;</li> <li>· mounted in a fixed position; and</li> <li>· with its photometric output measured using Type C photometry per IESNA LM-75-01.</li> </ul>
<p><b><i>Outdoor Lighting</i></b></p>	<p>Lighting equipment installed within the property line and outside the building envelopes, whether attached to poles, building structures, the earth, or any other location; and any associated lighting control equipment.</p>
<p><b><i>Partly shielded luminaire</i></b></p>	<p>A luminaire with opaque top and translucent or perforated sides, designed to emit most light downward.</p>
<p><b><i>Pedestrian Hardscape</i></b></p>	<p>Stone, brick, concrete, asphalt or other similar finished surfaces intended primarily for walking, such as sidewalks and pathways.</p>
<p><b><i>Photoelectric Switch</i></b></p>	<p>A control device employing a photocell or photodiode to detect daylight and automatically switch lights off when sufficient daylight is available.</p>
<p><b><i>Property line</i></b></p>	<p>The edges of the legally-defined extent of privately owned property.</p>

X. DEFINITIONS - Ordinance Text

<b><i>Relative photometry</i></b>	Photometric measurements made of the lamp plus luminaire, and adjusted to allow for light loss due to reflection or absorption within the luminaire. Reference standard: IES LM-63.
<b><i>Repair(s)</i></b>	The reconstruction or renewal of any part of an existing luminaire for the purpose of its ongoing operation, other than relamping or replacement of components including capacitor, ballast or photocell. Note that retrofitting a luminaire with new lamp and/or ballast technology is not considered a repair and for the purposes of this ordinance the luminaire shall be treated as if new. “Repair” does not include normal relamping or replacement of components including capacitor, ballast or photocell.
<b><i>Replacement Lighting</i></b>	Lighting installed specifically to replace existing lighting that is sufficiently broken to be beyond repair.
<b><i>Sales area</i></b>	Uncovered area used for sales of retail goods and materials, including but not limited to automobiles, boats, tractors and other farm equipment, building supplies, and gardening and nursery products.
<b><i>Seasonal lighting</i></b>	Temporary lighting installed and operated in connection with holidays or traditions.
<b><i>Shielded Directional Luminaire</i></b>	A luminaire that includes an adjustable mounting device allowing aiming in any direction and contains a shield, louver, or baffle to reduce direct view of the lamp.
<b><i>Sign</i></b>	Advertising, directional or other outdoor promotional display of art, words and/or pictures.

**X. DEFINITIONS - Ordinance Text**

<b><i>Sky Glow</i></b>	The brightening of the nighttime sky that results from scattering and reflection of artificial light by moisture and dust particles in the atmosphere. Skyglow is caused by light directed or reflected upwards or sideways and reduces one's ability to view the night sky.
<b><i>Temporary lighting</i></b>	Lighting installed and operated for periods not to exceed 60 days, completely removed and not operated again for at least 30 days.
<b><i>Third Party</i></b>	A party contracted to provide lighting, such as a utility company.
<b><i>Time Switch</i></b>	An automatic lighting control device that switches lights according to time of day.
<b><i>Translucent</i></b>	Allowing light to pass through, diffusing it so that objects beyond cannot be seen clearly (not transparent or clear).
<b><i>Unshielded Luminaire</i></b>	A luminaire capable of emitting light in any direction including downwards.
<b><i>Uplight</i></b>	For an exterior luminaire, flux radiated in the hemisphere at or above the horizontal plane.
<b><i>Vertical Illuminance</i></b>	Illuminance measured or calculated in a plane perpendicular to the site boundary or property line.

**XI. OPTIONAL STREETLIGHT ORDINANCE - User’s Guide**

This section was added since the first public review. It is designed to work closely with the proposed revision to ANSI/IES RP-8 Standard Practice for Roadway and Street Lighting.

Street and roadway lighting is one of the world's largest causes of artificial skyglow. Many adopting agencies will recognize that the MLO will make privately owned lighting more efficient and environmentally responsible than their street lighting systems. But because the process of designing street lighting often requires more precise lighting calculations, applying the MLO directly to street lighting is not advised. Using existing standards of street lighting is recommended, particularly IES RP-8 and AASHTO standards.

Until a new recommended practice for street lighting can be developed, this section can serve to prevent most of the uplift of street lighting systems without setting specific requirements for the amount of light, uniformity of light, or other performance factors. Adopting agencies should include these basic improvements to street lighting along with regulations to private lighting.

Lighting streets with “period” ornamental luminaires that evoke the look of a time when the light source was a gas flame can cause glare if high-lumen lamps are used. Such ornamental street lights should not exceed a BUG rating of G1. If additional illuminance and/or uniformity is desired, the ornamental fixtures should be supplemented by higher mounted fully shielded luminaires, as illustrated in RP-33-99.

Few street lighting warranting processes exist. The adopting agency needs to gauge whether a complex warranting systems is required, or if a simple one using posted speeds, presence of pedestrians, or other practical considerations is sufficient. Examples of a current street lighting warranting system are included in the Transportation Association of Canada's Guide for the Design of Roadway Lighting 2006.

**XI. OPTIONAL STREETLIGHT ORDINANCE – Ordinance Text**

Note to the adopting authority: the intent of this section is that it only applies to streets and not to roadways or highways.

**A. Preamble**

The purpose of this Ordinance is to control the light pollution of street lighting, including all collectors, local streets, alleys, sidewalks and bike-ways, as defined by ANSI/IES RP-8 Standard Practice for Roadway and Street Lighting and in a manner consistent with the Model Lighting Ordinance.

**B. Definitions**

Roadway or Highway lighting is defined as lighting provided for freeways, expressways, limited access roadways, and roads on which pedestrians, cyclists, and parked vehicles are generally not present. The primary purpose of roadway or highway lighting is to help the motorist remain on the roadway and help with the detection of obstacles within and beyond the range of the vehicle's headlights.

Street lighting is defined as lighting provided for major, collector, and local roads where pedestrians and cyclists are generally present. The primary purpose of street lighting is to help the motorist identify obstacles, provide adequate visibility of pedestrians and cyclists, and assist in visual search tasks, both on and adjacent to the roadway.

Ornamental Street Lighting is defined as a luminaire intended for illuminating streets that serves a decorative function in addition to providing optics that effectively deliver street lighting. It has a historical period appearance or decorative appearance, and has the following design characteristics:

- designed to mount on a pole using an arm, pendant, or vertical tenon;
- opaque or translucent top and/or sides;
- an optical aperture that is either open or enclosed with a flat, sag or drop lens;
- mounted in a fixed position; and
- with its photometric output measured using Type C photometry per IESNA LM-75-01.

**XI. OPTIONAL STREETLIGHT ORDINANCE – Ordinance Text****C. Scope**

All street lighting not governed by regulations of federal, state or other superceding jurisdiction.

EXCEPTION: lighting systems mounted less than 10.5 feet above street level and having less than 1000 initial lumens each.

**D. Master Lighting Plan**

The Authority shall develop a Master Lighting Plan based on the American Association of State Highway and Transportation Officials (AASHTO) Roadway Lighting Design Guide GL-6, October 2005, Chapter 2. Such plan shall include, but not be limited to, the Adoption of Lighting Zones and:

1. Goals of street lighting in the jurisdiction by Lighting Zone
2. Assessment of the safety and security issues in the jurisdiction by Lighting Zone
3. Environmentally judicious use of resources by Lighting Zone
4. Energy use and efficiency by Lighting Zone
5. Curfews to reduce or extinguish lighting when no longer needed by Lighting Zone

**E. Warranting**

The Authority shall establish a warranting process to determine whether lighting is required. Such warranting process shall not assume the need for any lighting nor for continuous lighting unless conditions warrant the need. Lighting shall only be installed where warranted.

**XI. OPTIONAL STREETLIGHT ORDINANCE – Ordinance Text**

**F. Light Shielding and Distribution**

All street lighting shall have no light emitted above 90 degrees.

Exception: Ornamental street lighting for specific districts or projects shall be permitted by special permit only, and shall meet the requirements of Table H below without the need for external field-added modifications.

**Table H - Uplight Control Requirements for Ornamental Street Lights - by Special Permit Only**

Lighting Zone	Maximum Uplight Rating
LZ0	U-0
LZ1	U-1
LZ2	U-2
LZ3	U-3
LZ4	U-4