



Agenda
City of Charlevoix Planning Commission Regular Meeting
Monday, March 11, 2024 - 6:00 PM
Council Chambers, 210 State Street, Charlevoix, MI

- A. Call to Order/Pledge of Allegiance**
- B. Roll Call**
- C. Inquiry into Potential Conflicts of Interest**
- D. Approval of Agenda**
- E. Approval of the Minutes**
 - 1. Approval of February 12, 2024 minutes
- F. Public Hearing**
 - 1. Section 153.005 Definitions and 153.153 Outdoor Storage
 - 2. Section 153.209 (A) (3) Sign Ordinance Bridge Park Drive
- G. Call for Public Comment Not Related to Agenda Items**
- H. New Business**
 - 1. Lighting Ordinance
- I. Old Business**
 - 1. Commercial Mixed-Use Standards, Regulations and Overlay Map
- J. Staff Updates**
 - 1. Zoning Report
- K. Requests For Next Months Agenda or Research Items**
- L. Adjournment by 8:00 p.m. unless extended by a motion**

Persons with disabilities who need an accommodation to fully participate in these meetings should contact the City Clerk's Office at 231-547-3250 or by email clerk@charlevoixmi.gov. A 24-hour notice may be needed for certain accommodations. An attempt will be made to grant all reasonable accommodations requests.

City of Charlevoix
Planning Commission Regular Meeting Minutes
Monday, February 12, 2024 - 6:00 PM
Council Chambers, 210 State Street, Charlevoix, MI

A. Call to Order/Pledge of Allegiance

The meeting was called to order at 6:00 p.m. by Chair Muladore followed by the Pledge of Allegiance.

B. Roll Call

Chair:	Jennifer Muladore
Members Present:	Shelley Boehmer, Toni Felter, John Kurtz, Mary Millington, Maureen Radke
Members Absent:	Scott Beatty, Janet Coltman, Sherm Chamberlain
Staff Present:	Jonathan Scheel, Director of Planning and Zoning

C. Inquiry into Potential Conflicts of Interest

D. Approval of Agenda

Discussion occurred regarding the order of the items on the Commission's agendas, namely that Old Business should come before New Business.

Motion by Member Boehmer, seconded by Member Felter to approve the agenda with moving Old Business in front of New Business on the agenda for this meeting.

Motion carried by unanimous voice vote.

E. Approval of the Minutes

1. January 8, 2024

Member Boehmer stated on page 1 of the minutes, under *Election of Officers* a correction was needed to add who nominated Jennifer Muladore as Chair, which was Mary Millington.

Motion by Member Boehmer, seconded by Member Felter to approve the minutes of January 8, 2024, as corrected.

Motion carried by unanimous voice vote.

F. Call for Public Comment Not Related to Agenda Items

G. Public Hearing

1. Rezone of 13513 Division Street

Director Scheel stated the City had a recent annexation of the new County building at 13513 Division Street which brought in 8.8 acres into the City. Mr. Scheel stated all annexed land comes into the City with an R-1, Residential District classification. Mr. Scheel stated the

property should be rezoned to Public Facilities.

The public hearing opened at 6:09 p.m.

Gerald Russell, 8328 Carson Avenue, questioned why the whole parcel wasn't annexed. Director Scheel stated he cannot answer that for the County, as the County requested the annexation.

Shirley Gibson, City resident, suggested anyone that has any issues with the rezoning should call their County Representative, Annemarie Conway, and she should be able to answer any questions.

The public hearing closed at 6:13 p.m.

Discussion followed regarding possible reasons for why the County didn't ask to have the entire parcel annexed into the City.

Motion by Member Kurtz, seconded by Member Millington to recommend approval to the City Council of the rezone of 13513 Division Street from R-1, Residential District to Public Facilities.

Motion carried by unanimous voice vote.

2. Community Development Block Grant (CDBG) Housing Improving Local Livability Grant

Director Scheel explained the City was applying for a CDBG Grant through the Michigan State Housing Development Authority (MSHDA) Program in the amount of \$354,000. The funds would be used in conjunction with the City's blight enforcement program. Mr. Scheel stated when an enforcement letter is issued, a letter explaining the grant program with information on how to apply for the grant will be included. The housing rehab program is for low income homeowners (80% or less of median income) that can receive grants to help repair their homes. Mr. Scheel explained part of the grant requirement was that the Planning Commission hold a public hearing to allow potential recipients of the grant give their input on what rules and policies may need to be implemented to make the grant most effective.

The public hearing opened at 6:24 p.m.

Lyle Gennett, 217 Clinton Street, stated he thought it was a great idea, but he remembered many years ago when Mrs. Dewitt lived in the City. Mrs. Dewitt's house needed exterior paint and a number of local residents got together and assisted in fixing the house. Mr. Gennett suggested the potential of using volunteers on smaller projects.

The public hearing was closed at 6:26 p.m.

Director Scheel responded to questions from the Commission Members regarding details of the grant program. Mr. Scheel stated a motion was not needed, but the minutes of the meeting would go to MSHDA as part of the grant application process, and there will be another public hearing being held by the City Council within the next couple of weeks to receive public input.

H. Old Business

1. Outdoor Storage ordinance language

Chair Muladore stated that as previously discussed, the Commission agreed to move Old Business in front of New Business for this meeting.

Director Scheel stated the Commission has been discussing this issue for quite a few months and he briefed the Commission on the changes that were made to the old ordinance back in 2019. Mr. Scheel reviewed the draft ordinance for outdoor storage in detail. Discussion followed regarding homes that have primary and secondary driveways, 66' right-of-ways or less and the difficulty of enforcing the issue of parking recreational vehicles in a second driveway, the need to include that parking of such a vehicle cannot interfere with traffic, and issues with storing boats on residential lots. Mr. Scheel stated it is difficult to write an ordinance that considers all situations.

Shirley Gibson, City resident, stated Members Millington and Radke were correct in that boats/recreational vehicles do not belong on City parcels. Ms. Gibson stated it doesn't matter the setbacks, screening, driveways or how big the boats are, they don't belong. Ms. Gibson stated there were no property rights for this kind of thing, and she expressed concerns about her property rights. Ms. Gibson suggested going back to how the ordinance was written in 2018 where nothing was allowed.

Lyle Gennett stated if one can afford a big boat, that the owner should be able to store it someplace other than their residential yard. Mr. Gennett stated if he owned a boat or a recreational vehicle he would not put it in his driveway out of respect for the community. Mr. Gennett stated it was very unfair to the Police Department or Director Scheel that when they are sent out to a residence because of a parking situation, the City has to stick to a policy and enforce the policy.

Motion by Member Kurtz to accept the proposed Ordinance changes as written. Member Boehmer stated the paragraph referenced as (G) needed to be (D), and Director Scheel will confirm the change needs to be made.

Chair Muladore brought up a discussion about the seasonal language and Director Scheel stated the proposed dates for summer were May 15 - September 15 which clarifies the definition of seasonal. Chair Muladore referenced an email she sent to the Director regarding active use; her suggested language read, recreational vehicles may be parked during active use and then the definition of active use would be, active use is defined as a period of time where a recreational vehicle is uncovered and operational for intermittent use instead of covered or disabled as in shrink wrapped or fuel stabilized. Chair Muladore recommended removing the seasonal dates. Member Kurtz suggested leaving the dates in, but state that the dates can be extended by Director Scheel. Director Scheel questioned if they should go back to the 2018 language applicable to vehicles in the front yard.

Chair Muladore stated she recommended that (7) be changed from seasonal parking to active use to read instead of seasonal it would read, recreational vehicles in active use can be parked on a driveway.

Member Kurtz amended his motion to recommend a public hearing be scheduled for the proposed language changes for outdoor storage to include active use as previously discussed, seconded by Member Felter.

Motion carried by unanimous voice vote.

Director Scheel asked to go to New Business, Item 2 - Sign ordinance changes for Bridge Park Drive.

I. New Business

1. Design Guidelines for Commercial Mixed-Use buildings and US 31 Corridor

Member Millington indicated she could not stay late, and she was wondering if they needed a special meeting for this topic. Director Scheel stated that he did not believe he was going to receive any developer's application within the next 60 days, but with the required public hearings before the Planning Commission and City Council, it would be 3–4 months before the guidelines would be adopted. The Commission reviewed images of building projects in Boyne City and Harbor Springs.

The Commission concurred to schedule a Special Planning Commission Meeting on February 22, 2024, at 6:00 p.m to discuss guidelines for commercial mixed-use buildings.

2. Sign ordinance changes for Bridge Park Drive

Director Scheel stated one of the goals of the Downtown Development Authority (DDA) and the City has been to expand downtown from Bridge Street, alleys and side streets to where the expansion is happening on Bridge Park Drive. The tenants of the DDA owned building at 103 Bridge Park Drive have struggled with visibility to the visiting public since the change of use to retail. Mr. Scheel stated that because Bridge Park is the roof of the building and the frontage of the businesses are a full story lower facing away from Bridge Street, there is currently no easy or legal way of getting signage that can be seen from Bridge Street. The recommended signage is already allowed on similar multi-tenant parcels, and it will not impact any view corridor, but is highly visible to pedestrians on Bridge Street. The proposed sign could be up to 60 sq. ft., 20 sq. ft. for each business. Director Scheel responded to questions from the Commission Members.

Motion by Member Boehmer, seconded by Member Kurtz to set this ordinance change for a public hearing at the March 11, 2024, Planning Commission Meeting.

Motion carried by unanimous voice vote.

J. Staff Updates

1. Zoning Administrator Reports December 2023 and January 2024

Director Scheel stated the City had received a \$50,000 Housing Readiness Grant in which the funds will help them work and plan with Charlevoix Township over the next year to figure out housing along City and Township mutual borders. Mr. Scheel also stated he has ten (10) different developments, all sizes, that he is working with right now, including a small one of 3–4 units with a rehab of a building on Van Pelt Alley, one on Hurlbut, 104 State Street (4 units),

1911 Bridge Street (liquor store), 1522 Bridge Street (6 units), 800 Bridge Street (religious public space), Chamber building (12-16 units), and Housing Authority property (40-53 units). All units referenced are residential units.

K. Requests For Next Months Agenda or Research Items

L. Adjournment by 8:00 p.m. unless extended by a motion

Meeting adjourned at 8:04 p.m. by Chair Muladore.

Sarah J. Dvoracek/fgm City Clerk

Jennifer Muladore Chair

Charlevoix Planning Commission

Public Hearing

Title: Section 153.005 Definitions and 153.153 Outdoor Storage

Date: March 11, 2024

Presented By: Jonathan Scheel, Zoning Administrator

Background:

With the rapid increase of recreational vehicles in front yards since an ordinance change in 2019, the Planning Commission revisited the ordinance and suggested changes that may be more appropriate for the neighborhoods within the city.

Recommendation:

Motion to send to the City Council with recommendation to approve.

Attachments:

1. Public notice 2-23-24
2. Outdoor storage 4

NOTICE OF PUBLIC HEARINGS
CITY OF CHARLEVOIX PLANNING COMMISSION
210 State Street, City Council Chambers, Second Floor, City Hall, Charlevoix, MI.
Monday March 11, 2024, 6:00 PM

The City of Charlevoix Planning Commission will hold two public hearings in the City Council Chambers at Charlevoix City Hall, 210 State Street, Charlevoix, Michigan 49720 to accept public input.

All forms of public comment are welcome and appreciated. Written comments may be emailed, faxed, or sent to the following by March 11, 1:00 PM

Jonathan Scheel Director of Planning and Zoning
210 State Street
Charlevoix, MI 49720
231-547-3265 or cell 231-550-2401
Fax: (231)547-3617
planner@charlevoixmi.gov

The first public hearing will review changes to Sections 153.005 Definitions and 153.153 Outdoor Storage of the City of Charlevoix Zoning Ordinance;

§ 153.005 DEFINITIONS.

ACTIVE USE: A period of time where a recreational vehicle is uncovered and operational for intermittent use instead of covered or disabled, as in shrink-wrapped or fuel stabilized.

RECREATIONAL EQUIPMENT OR VEHICLE: Equipment or vehicle used for travel and leisure activities including:

- a. Travel trailer: A vehicular, portable structure built on a chassis, designed to be used as a temporary dwelling for travel, recreational, and vacation uses; and which is permanently identified as a "travel trailer" by the manufacturer.
- b. Pickup camper: A structure designed primarily to be mounted on a pickup or truck chassis with sufficient equipment to render it suitable for use as a temporary dwelling for travel, recreational, and vacation uses.
- c. Motorized home: A portable dwelling designed and constructed as an integral part of a self-propelled vehicle.
- d. Folding tent trailer: A canvas or plastic folding structure, mounted on wheels, designed for travel and vacation use.
- e. Boats and boat trailers: Includes boats, floats, rafts, canoes and kayaks; plus, the normal equipment to transport them on the highway
- f. Other recreational equipment: Includes snowmobiles, personal watercraft, all terrain or special terrain vehicles, motorcycles, utility trailers, plus the normal equipment used to transport them on the highway.
- g. Utility trailer: A vehicle designed for the purpose of hauling miscellaneous goods and materials.

§ 153.153 OUTDOOR STORAGE.

(C) *Recreational equipment and vehicle storage.* The standards of this section apply to all residential districts.

(1) All recreational equipment and vehicles that are stored outside of a structure shall be maintained in good condition, shall be operable and shall have a current license and/or registration.

(2) Recreational equipment and vehicles parked or stored outside shall not be connected to electricity, water, gas or sanitary facilities for living or lodging purposes. Electricity may be used to charge batteries for no more than a 24-hour time period.

(3) The parking and/or storage of *recreational equipment and vehicles* in excess of 25 feet in length, and boats in excess of 25 feet in length, is prohibited.

(4) Outdoor storage of not more than two recreational equipment or vehicles shall be permitted on any parcel. No more than four canoes or kayaks will be stored on any parcel.

(5) Storage of recreational equipment and vehicles shall be parked completely in an enclosed structure or within the side or rear yards, except that they may not be parked closer than five feet from any lot line, unless otherwise provided by this section. Property owners that can demonstrate that the site

does not reasonably allow storage in the side or rear yards may store the recreational vehicle(s) in the front driveway with application to the Zoning Administrator. The Zoning Administrator will use criteria from Section 153.038 (F) (2) (a-e) for approval.

(6) Such recreational equipment and vehicles shall be placed or parked on a lot with a principal building, structure or use unless it is a lot which is attached to an occupied lot under the same ownership.

(7) Active Use parking of recreational equipment and vehicles may be parked on one a front yard driveway provided that public streets, sidewalks and Right of Way are not blocked to vehicular or pedestrian traffic. Driveway means vehicle access provided between a street or road and a parking area but shall not include an additional parking aisle.

(D) *Outdoor storage areas.* Where permitted, outdoor storage areas shall be completely screened by buildings, structures or a continuous buffer at least three feet wide. The buffer area shall include:

(i) A six-foot tall screen wall or fence along with any combination of the following to provide an effective screen, as approved by the Zoning Administrator:

- (a) Berms;
- (b) Canopy, evergreen and ornamental trees; and/or
- (c) Shrubs.

The second public hearing will review 153.215 CDB Zoning District of the City of Charlevoix Zoning Ordinance:

§ 153.215 CBD ZONING DISTRICT.

(C) Commercial properties on Bridge Park Dr located beneath Bridge Park.

- a) Each business may attach a sign less than or equal to two square feet in sign face area on the Bridge Park railing above the location of their business. A sign permit must be obtained, which must also be approved by the City Manager. The method of sign attachment must be included in the sign permit application. A sign permit approved under this division is valid only for the permit applicant and cannot be transferred to another entity.
- b) One multi-tenant business center sign meeting Section 153.209 (3) (a) may be placed at the northeast corner of the parcel, directly in front of the mechanical units of the building. The sign will be a maximum height of 8 feet.

Submitted by Jonathan Scheel Director of Planning and Zoning, City of Charlevoix

DRAFT Ordinance changes for Outdoor Storage

3-11-2024

§ 153.005 DEFINITIONS.

ACTIVE USE: A period of time where a recreational vehicle is uncovered and operational for intermittent use instead of covered or disabled, as in shrink-wrapped or fuel-stabilized.

RECREATIONAL EQUIPMENT OR VEHICLE: Equipment or vehicle used for travel and leisure activities including:

a. Travel trailer: A vehicular, portable structure built on a chassis, designed to be used as a temporary dwelling for travel, recreational, and vacation uses; and which is permanently identified as a "travel trailer" by the manufacturer.

b. Pickup camper: A structure designed primarily to be mounted on a pickup or truck chassis with sufficient equipment to render it suitable for use as a temporary dwelling for travel, recreational, and vacation uses.

c. Motorized home: A portable dwelling designed and constructed as an integral part of a self-propelled vehicle.

d. Folding tent trailer: A canvas or plastic folding structure, mounted on wheels, designed for travel and vacation use.

e. Boats and boat trailers: Includes boats, floats, rafts, canoes and kayaks; plus the normal equipment to transport them on the highway

f. Other recreational equipment: Includes snowmobiles, personal watercraft, all terrain or special terrain vehicles, motorcycles, utility trailers, plus the normal equipment used to transport them on the highway..

g. Utility trailer: A vehicle designed for the purpose of hauling miscellaneous goods and materials.

§ 153.153 OUTDOOR STORAGE.

(A) Inoperable or unlicensed motor vehicles shall not be kept, parked or stored in any residential district, except within a completely enclosed building. The purpose of this provision is to prevent the accumulation of junk motor vehicles and, therefore, it shall not apply to any motor vehicle ordinarily used, but temporarily out of running condition. If the motor vehicle is being kept for actual use, but is temporarily unlicensed, the Zoning Administrator may grant the owner a reasonable time, not to exceed two months, to procure a license.

(B) Likewise, old, rusty and unsightly machinery, machines not suited for use upon the premises or quantities of used building materials not fit to be used to improve the premises shall not be kept or stored outside a building; provided, however, that, building materials fit to be used to improve the premises may be kept on-site for one year if they are piled off the ground so as not to become a harbor for vermin.

(C) *Recreational equipment and vehicle storage.* The standards of this section apply to all residential districts.

(1) All recreational equipment and vehicles that are stored outside of a structure shall be maintained in good condition, shall be operable and shall have a current license and/or registration.

(2) Recreational equipment and vehicles parked or stored outside shall not be connected to electricity, water, gas or sanitary facilities for living or lodging purposes. ~~other than allowed for in § 153.153(C)(8)~~ Electricity may be used to charge batteries for no more than a 24-hour time period.

(3) The parking and/or storage of ~~buses recreational equipment and vehicles and converted buses~~ in excess of ~~18~~ 25 feet in length, and boats in excess of ~~30~~ 25 feet in length, is prohibited.

(4) Outdoor storage of not more than two recreational equipment or vehicles shall be permitted on any parcel ~~of property~~. ~~No more than four canoes or kayaks will be stored on any parcel.~~

(5) Off-season ~~S~~storage of recreational equipment and vehicles shall be parked completely in an enclosed structure or within the side or rear yards, except that they may not be parked ~~in required setbacks, and such recreational equipment and vehicles shall not be~~ closer than five feet from any lot line, unless otherwise provided by this section. ~~Property owners that can demonstrate that the site does not reasonably allow storage in the side or rear yards may store the recreational vehicle(s) in the front driveway with application to the Zoning Administrator. The Zoning Administrator will use criteria from Section 153.038 (F) (2) (a-e) for approval.~~

(6) Such recreational equipment and vehicles shall be placed or parked on a lot with a principal building, structure or use unless it is a lot which is attached to an occupied lot under the same ownership.

(7) ~~Active Use~~ parking of recreational equipment and vehicles may be ~~within any front yard, or front or side setback parked on one a front yard driveway~~ provided that public streets, ~~and~~ sidewalks and Right of Way are not blocked to vehicular or pedestrian traffic. ~~Driveway means vehicle access provided between a street or road and a parking area, but shall not include an additional parking aisle.~~

(8) ~~Recreational equipment and vehicles may be used for living or lodging purposes on a parcel with a principal building for no more than 14 days within any 60-day period.~~ *Outdoor storage areas.* Where permitted, outdoor storage areas shall be completely screened by buildings, structures or a continuous buffer at least three feet wide. The buffer area shall include:

(i) A six-foot tall screen wall or fence along with any combination of the following to provide an effective screen, as approved by the Zoning Administrator:

- (a) Berms;
- (b) Canopy, evergreen and ornamental trees; and/or
- (c) Shrubs.

Charlevoix Planning Commission

Public Hearing

Title: Section 153.209 (A) (3) Sign Ordinance Bridge Park Drive

Date: March 11, 2024

Presented By: Jonathan Scheel, Zoning Administrator

Background:

One of the goals of the DDA and the City has been to expand downtown from just Bridge Street to the alleys, side streets and Bridge Park Drive. The tenants of the Downtown Development Authority-owned building at 103 Bridge Park Drive have struggled with visibility to the visiting public since the change of use to retail. Because of Bridge Park being the roof of the building and the frontage of the businesses are a full story lower facing away from Bridge Street, there is currently no easy way of getting signage that is seen from Bridge Street. The recommended signage change is already allowed on any similar private multi-tenant parcel. Allowing a multi-tenant sign in the area suggested will not impact the view corridor, but is still highly visible from Bridge Street.

Recommendation:

Motion to send to City Council with a recommendation for approval

Attachments:

1. BridgeParkBusinessSignageMockup4
2. BridgeParkBusinessSignageMockup5
3. Bridge Park Sign



BRIDGE PARK DRIVE BUSINESSES

 J. Bird PROVISIONS 109 Bridge Park Dr GRAB & GO FOOD DRINKS GIFTS SNACKS & MORE  TASTING ROOM WINE & SPIRITS	 BEAVER ISLAND 103 Bridge Park Dr OFFICE DEPARTURES SHUTTLE	 COMPANY NAME 107 Bridge Park Dr Michigan Products & Apparel
--	--	---

BRIDGE PARK DRIVE BUSINESSES



PROVISIONS

109 Bridge Park Dr

**GRAB & GO FOOD
DRINKS | GIFTS |
SNACKS & MORE**



TASTING ROOM
WINE & SPIRITS



103 Bridge Park Dr

OFFICE



DEPARTURES



SHUTTLE



107 Bridge Park Dr

**Michigan
Products &
Apparel**

BRIDGE PARK DRIVE BUSINESSES



J. Bird
PROVISIONS

109 Bridge Park Dr

GRAB & GO FOOD
DRINKS | GIFTS |
SNACKS & MORE



LOST CELLARS
TASTING ROOM
WINE & SPIRITS



BEAVER ISLAND
BOAT COMPANY

103 Bridge Park Dr

OFFICE
DEPARTURES
SHUTTLE



COMPANY NAME
TAGLINE IS HERE

107 Bridge Park Dr

Michigan
Products &
Apparel

BRIDGE PARK DRIVE BUSINESSES



109 Bridge Park Dr

**GRAB & GO FOOD
DRINKS | GIFTS |
SNACKS & MORE**



103 Bridge Park Dr

OFFICE
DEPARTURES
SHUTTLE



107 Bridge Park Dr

Michigan
Products &
Apparel

10ft

6ft

§ 153.215 CBD ZONING DISTRICT.

(C) Commercial properties on Bridge Park Dr. ~~that are~~ located beneath Bridge Park.

- a) ~~Each business may are-allowed-to~~ attach a sign less than or equal to two square feet in sign face area on the Bridge Park railing above the location of their business. A sign permit must be obtained, which must also be approved by the City Manager. The method of sign attachment must be included in the sign permit application. A sign permit approved under this division is valid only for the permit applicant and cannot be transferred to another entity.
- b) ~~One Multi-tenant business center sign meeting Section 153.209 (3) (a) may be placed at the northwest corner of the parcel, directly in front of the mechanical units of the building. The sign will be a maximum height of 8 feet.~~

§ 153.209 SIGN STANDARDS FOR SPECIFIC LAND USE; SCHEDULE OF REGULATIONS.

(3) *Multi-tenant business center.*

(a) Notwithstanding the requirements of § [153.210](#) of this chapter, in the case of a shopping center or other integrated group of stores or commercial buildings, one ground sign may be erected per street frontage. The maximum area for such a sign face shall be equal to 20 square feet one of sign face area for each business, or 60 square feet, whichever is less.

Charlevoix Planning Commission

New Business

Title: Lighting Ordinance

Date: March 11, 2024

Presented By: Jonathan Scheel, Zoning Administrator

Background:

As the Planning Commission has more development, lighting has the potential to have a negative impact on the city's citizens. More development comes with more lights. It is already impossible to see the stars when in the Charlevoix area. Unneeded lights use extra energy during a time when global warming is on everyone's mind. It negatively affects the animals, birds and insects. It makes driving more difficult and can be viewed as light "pollution". There is more acceptance, if not encouragement, of lighting regulation for a "dark sky". Attached are a model Dark Sky Ordinance, a draft lighting ordinance for the city based on said model Dark Sky Ordinance and additional documents explaining the complexity of this issue.

Recommendation:

Review and comment for future discussions.

Attachments:

1. 5-light
2. Lighting Ordinance
3. 16_MLO light ordinance

Five Lighting Principles for Responsible Outdoor Lighting

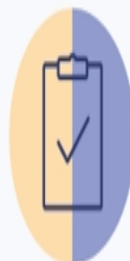


Responsible outdoor lighting is

1 Useful

Use light only if it is needed

All light should have a clear purpose. Consider how the use of light will impact the area, including wildlife and their habitats.



2 Targeted

Direct light so it falls only where it is needed

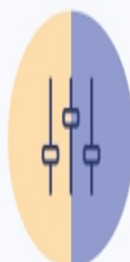
Use shielding and careful aiming to target the direction of the light beam so that it points downward and does not spill beyond where it is needed.



3 Low Level

Light should be no brighter than necessary

Use the lowest light level required. Be mindful of surface conditions, as some surfaces may reflect more light into the night sky than intended.



4 Controlled

Use light only when it is needed

Use controls such as timers or motion detectors to ensure that light is available when it is needed, dimmed when possible, and turned off when not needed.



5 Warm-colored

Use warmer color lights where possible

Limit the amount of shorter wavelength (blue-violet) light to the least amount needed.



Draft City of Charlevoix Lighting Ordinance 3-1-2024

I. INTENT

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 Illuminating Engineering Society (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

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

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.

LZ-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.	Recommended default zone for rural and low density residential areas. Includes residential single or two family; agricultural zone districts; rural residential zone districts; business parks; open space include preserves in developed areas.
-------------	---	--

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.

LZ-2	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.	Recommended default zone for light commercial business districts and high density or mixed use residential districts. Includes neighborhood business districts; churches, schools and neighborhood recreation facilities; and light industrial zoning with modest nighttime uses or lighting requirements.
-------------	--	--

LZ3: Moderately high ambient lighting

Draft City of Charlevoix Lighting Ordinance 3-1-2024

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.

LZ-3	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.	Recommended default zone for large cities' business district. Includes business zone districts; commercial mixed use; and heavy industrial and/or manufacturing zone districts.
-------------	---	--

III. GENERAL REQUIREMENTS

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 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.
- e. Temporary lighting for theatrical, television, performance areas, and temporary events.
- 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 City.
- j. Lighting specified or identified in a specific use permit.
- k. Lighting required by federal, or state, 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 programmable lighting controller, building automation system or lighting energy management system, all with battery or similar backup power or device.

2. Automatic Lighting Reduction Requirements

Between the hours of 11 PM and 6 AM 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 City, 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 between the hours of 11 PM and 6 AM.

IV. NON-RESIDENTIAL LIGHTING

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

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.

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 Planning Commission review 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.

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.

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 interreflections 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.

V. RESIDENTIAL LIGHTING

A. General Requirements

Draft City of Charlevoix Lighting Ordinance 3-1-2024

For residential properties including multiple multi-family 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 allowed 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 Multi-family Residential Landscape Lighting

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

VI. PROHIBITED LIGHTING AND BY SPECIAL PERMIT ONLY

A. High Intensity and Special Purpose Lighting

The following lighting systems are prohibited from being installed:

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. Other 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.
5. Lighting that is flashing, moving or intermittent, including those associated with signs.

B. Complex and Non-Conforming Uses

Upon special permit issued by the City, 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.

Draft City of Charlevoix Lighting Ordinance 3-1-2024

3. Lighting for industrial sites having special requirements, such as petrochemical manufacturing or storage, shipping piers, etc.

4. Parking structures.

5. Urban parks

6. Ornamental and architectural lighting of bridges, public monuments, statuary and public buildings.

7. Theme and amusement parks.

8. Correctional facilities.

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

a. Has sustained every reasonable effort to mitigate the effects of light on the environment and surrounding properties, supported by a signed statement describing the mitigation measures. Such statement shall be accompanied by the calculations required for the Performance Method.

b. Employs lighting controls to reduce lighting at a Project Specific Curfew ("Curfew") time to be established in the Permit.

c. Complies with the Performance Method after Curfew.

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

VII. EXISTING LIGHTING

A. New Uses or Structures, or Change of Use

Whenever there is a new use of a property (zoning or variance change) or the use of 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.

B. 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:

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.

Draft City of Charlevoix Lighting Ordinance 3-1-2024

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 twelve months or more, then all outdoor lighting shall be brought into compliance with this Ordinance before any further use of the property occurs.

IX. TABLES

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 lms/space	490 lms/space	630 lms/space	840 lms/space	1,050 lms/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
Base Allowance				
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

Table B - Lumen Allowances, in Addition to Base Allowance

	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Additional allowances for sales and service facilities. No more than two additional allowances per site, Use it or Lose it.					
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 LF	1,500 per LF	2,000 per LF
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 lumens per pump (based on 5 fc horiz)	8,000 lumens per pump (based on 10 fc horiz)	16,000 lumens per pump (based on 20 fc horiz)	24,000 lumens per pump (based on 20 fc horiz)

Draft City of Charlevoix Lighting Ordinance 3-1-2024

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.

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

*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.

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

TABLE C-2	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
Allowed Uplight Rating	U0	U1	U2	U3	U4
Allowed % light emission above 90° for street or Area lighting	0%	0%	0%	0%	0%

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

TABLE C-3	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
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 Performance Method Allowed Total Initial Site Lumens

May be used on any project.

Lighting Zone	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
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 plan view unless otherwise noted.

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
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".					
Building Entrances or Exits. This allowance is per door. In order to use this allowance, luminaires must be within 20 feet of the door.	400	1,000	2,000	4,000	6,000
Building Facades. This allowance is lumens per unit area of building facade that are illuminated. To use this allowance, luminaires must be aimed at the facade and capable of illuminating it without obstruction.	0	0	8/SF	16/SF	24/SF

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Sales or Non-sales Canopies. 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/SF	6/SF	12/SF	18/SF
Guard Stations. 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/SF	12/SF	24/SF	36/SF
Outdoor Dining. 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/SF	5/SF	10/SF	15/SF
Drive Up Windows. 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	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
Additional Lumens Allowances for Service Stations only. Service stations may not use any other additional allowances.					
Vehicle Service Station Hardscape. 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/SF	8/SF	16/SF	24/SF

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

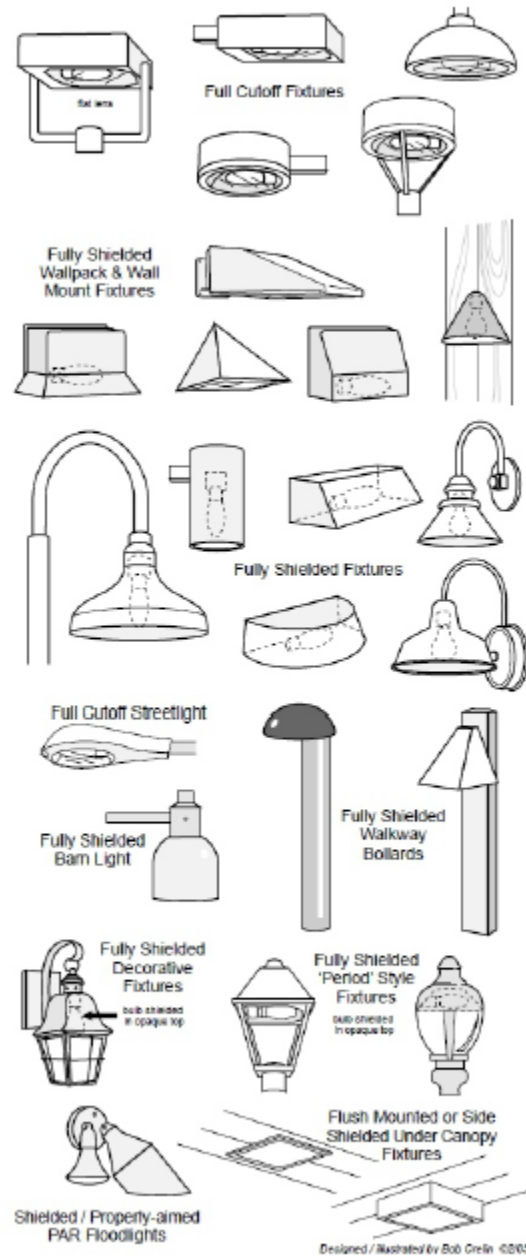
Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
0.05 FC or 0.5 LUX	0.1 FC or 1.0 LUX	0.3 FC or 3.0 LUX	0.8 FC or 8.0 LUX	1.5 FC or 15.0 LUX

Table G - Residential Lighting Limits

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Row 1 Maximum Allowed Luminaire Lumens* for Unshielded Luminaires at one entry only	Not allowed	420 lumens	630 lumens	630 lumens	630 lumens
Row 2 Maximum Allowed Luminaire Lumens* for each Fully Shielded Luminaire	630 lumens	1,260 lumens	1,260 lumens	1,260 lumens	1,260 lumens
Row 3 Maximum Allowed Luminaire Lumens* for each Unshielded Luminaire excluding main entry	Not allowed	315 lumens	315 lumens	315 lumens	315 lumens
Row 4 Maximum Allowed Luminaire Lumens* for each Landscape Lighting	Not allowed	Not allowed	1,050 lumens	2,100 lumens	2,100 lumens
Row 5 Maximum Allowed Luminaire Lumens* for each Shielded Directional Flood Lighting	Not allowed	Not allowed	1,260 lumens	2,100 lumens	2,100 lumens
Row 6 Maximum Allowed Luminaire Lumens* for each Low Voltage Landscape Lighting	Not allowed	Not allowed	525 lumens	525 lumens	525 lumens

* Luminaire lumens equals Initial Lamp Lumens for a lamp, multiplied by the number of lamps in the luminaire

Examples of Fully Shielded Luminaires



Designed / Illustrated by Bob Grell ©2005

X. DEFINITIONS

Absolute Photometry	Photometric measurements (usually of a solid-state luminaire) that directly measures the footprint of the luminaire. Reference Standard IES LM-79
Architectural Lighting	Lighting designed to reveal architectural beauty, shape and/or form and for which lighting for any other purpose is incidental.
Authority	The adopting municipality, agency or other governing body.
Astronomic Time Switch	An automatic lighting control device that switches outdoor lighting relative to time of solar day with time of year correction.
Backlight	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.
BUG	A luminaire classification system that classifies backlight (B), uplight (U) and glare (G).
Canopy	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.)
Common Outdoor Areas	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.
Curfew	A time defined by the authority when outdoor lighting is reduced or extinguished.
Emergency conditions	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.
Footcandle	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.
Forward Light	For an exterior luminaire, lumens emitted in the quarter sphere below horizontal and in the direction of the intended orientation of the luminaire.
Fully Shielded Luminaire	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.
Glare	Lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.
Hardscape	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.
Hardscape Area	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.
Hardscape Perimeter	The perimeter measured in linear feet is used to calculate the Total Site Lumen Limit in the Performance Method. Refer to Hardscape definition.
IDA	International Dark-Sky Association.
IESNA	Illuminating Engineering Society of North America.
Impervious Material	Sealed to severely restrict water entry and movement
Industry Standard Lighting Software	Lighting software that calculates point-by-point illuminance that includes reflected light using either ray-tracing or radiosity methods.
Lamp	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.
Landscape Lighting	Lighting of trees, shrubs, or other plant material as well as ponds and other landscape features.
LED	Light Emitting Diode.
Light Pollution	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.
Light Trespass	Light that falls beyond the property it is intended to illuminate.
Lighting	"Electric" or "man-made" or "artificial" lighting. See "lighting equipment".
Lighting Equipment	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.
Lighting Zone	An overlay zoning system establishing legal limits for lighting for particular parcels, areas, or districts in a community.
Lighting Equipment	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.
Low Voltage Landscape Lighting	Landscape lighting powered at less than 15 volts and limited to luminaires having a rated initial luminaire lumen output of 525 lumens or less.
Lumen	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).
Luminaire	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.

Draft City of Charlevoix Lighting Ordinance 3-1-2024

Luminaire Lumens	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.	Relative photometry	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.
Lux	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.	Repair(s)	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.
Mounting height	The height of the photometric center of a luminaire above grade level.	Replacement Lighting	Lighting installed specifically to replace existing lighting that is sufficiently broken to be beyond repair.
New lighting	Lighting for areas not previously illuminated; newly installed lighting of any type except for replacement lighting or lighting repairs.	Sales area	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.
Object	A permanent structure located on a site. Objects may include statues or artwork, garages or canopies, outbuildings, etc.	Seasonal lighting	Temporary lighting installed and operated in connection with holidays or traditions.
Object Height	The highest point of an entity, but shall not include antennas or similar structures.	Shielded Directional Luminaire	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.
Ornamental lighting	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.	Sign	Advertising, directional or other outdoor promotional display of art, words and/or pictures.
Ornamental Street Lighting	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.	Sky Glow	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.
Outdoor Lighting	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.	Temporary lighting	Lighting installed and operated for periods not to exceed 60 days, completely removed and not operated again for at least 30 days.
Partly shielded luminaire	A luminaire with opaque top and translucent or perforated sides, designed to emit most light downward.	Third Party	A party contracted to provide lighting, such as a utility company.
Pedestrian Hardscape	Stone, brick, concrete, asphalt or other similar finished surfaces intended primarily for walking, such as sidewalks and pathways.	Time Switch	An automatic lighting control device that switches lights according to time of day.
Photoelectric Switch	A control device employing a photocell or photodiode to detect daylight and automatically switch lights off when sufficient daylight is available.	Translucent	Allowing light to pass through, diffusing it so that objects beyond cannot be seen clearly (not transparent or clear).
Property line	The edges of the legally-defined extent of privately owned property.	Unshielded Luminaire	A luminaire capable of emitting light in any direction including downwards.
		Uplight	For an exterior luminaire, flux radiated in the hemisphere at or above the horizontal plane.
		Vertical Illuminance	Illuminance measured or calculated in a plane perpendicular to the site boundary or property line.



Illuminating
ENGINEERING SOCIETY



JOINT IDA - IES

**MODEL
LIGHTING
ORDINANCE
(MLO)**

with USER'S GUIDE

June 15, 2011

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 international “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 (LZ0-4) 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 Model 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
Co-Chair: Jim Benya
Co-Chair: Nancy Clanton
Leslie Lipstein
Leo Smith
Michael Mutmanský

IES
Naomi Miller
Cheryl English
Denis Lavoie
Eric Gibson

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

I. PREAMBLE - User's 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.

CARBON FOOTPRINT	OBTRUSIVE LIGHT
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's 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. For 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.

I. PREAMBLE - Ordinance Text

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

- 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.
- Minimize adverse offsite impacts of lighting such as light trespass, and obtrusive light.
- Curtail light pollution, reduce skyglow and improve the nighttime environment for astronomy.
- Help protect the natural environment from the adverse effects of night lighting from gas or electric sources.
- 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:

LZ0: 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 (cont.) - User's Guide

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.

Zone	Recommended Uses or Areas	Zoning Considerations
LZ-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 for residential areas.	Recommended default zone for wilderness areas, parks and preserves, and undeveloped rural areas. Includes protected wildlife areas and corridors.
LZ-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.	Recommended default zone for rural and low density residential areas. Includes residential single or two family; agricultural zone districts; rural residential zone districts; business parks; open space include preserves in developed areas.

II. LIGHTING ZONES (cont.) - Ordinance Text

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 (cont.) - User's Guide

Zone	Recommended Uses or Areas	Zoning Considerations
LZ-2	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.	Recommended default zone for light commercial business districts and high density or mixed use residential districts. Includes neighborhood business districts; churches, schools and neighborhood recreation facilities; and light industrial zoning with modest nighttime uses or lighting requirements.
LZ-3	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.	Recommended default zone for large cities' business district. Includes business zone districts; commercial mixed use; and heavy industrial and/or manufacturing zone districts.
LZ-4	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.	Not a default zone. Includes high intensity business or industrial zone districts.

III. GENERAL REQUIREMENTS - User's 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's 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's 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 REQUIREMENTS - 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 streetlighting 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 REQUIREMENTS (cont.) - Ordinance Text

- 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 programmable lighting controller, building automation system or lighting energy management system, all with battery or similar backup power or device.

LIGHTING CONTROLS - User's 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's 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 (cont.) - Ordinance Text

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 - Ordinance Text

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's 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.

PRESCRIPTIVE METHOD EXAMPLE - COMPLIANCE CHART			
<i>Lamp Descriptions</i>	<i>QTY</i>	<i>Initial Luminaire Lumens</i>	<i>Total</i>
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

* Listed below is the method of determining the allowed total initial lumen for non-residential outdoor lighting using the hardscape areamethod. (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

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

PRESCRIPTIVE METHOD (cont.) - User's Guide**LIMITS TO OFFSITE IMPACTS**

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

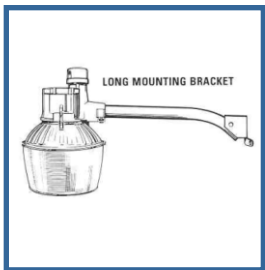
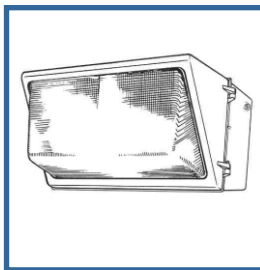
All parking lot lighting shall have no light emitted above 90 degrees.

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 (cont.) - User's Guide**LIMITS TO OFFSITE IMPACTS**

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
Wall Packs****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 (cont.) - User's Guide**LIMITS TO OFFSITE IMPACTS (cont.)**

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's 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's 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)		
	Incan	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 - Ordinance Text

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.

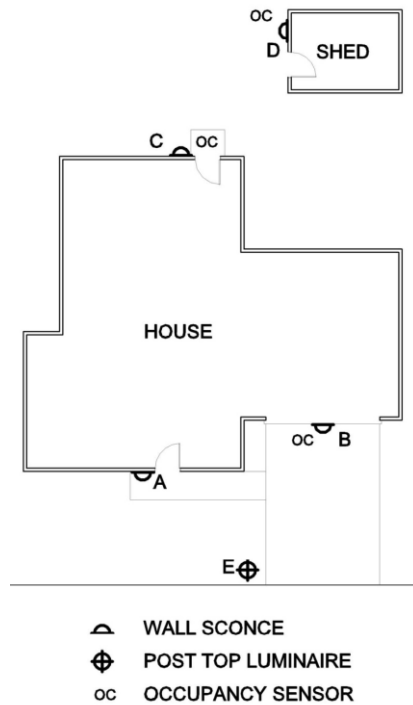
Exceptions

1. One partly shielded or unshielded luminaire at the main entry, not exceeding the allowed 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's Guide



Property Type: Residential Lighting Zone 1								
Luminaire Type	Location	Luminaire Description	Fully Shielded	Lamp Type	Initial Luminaire Lumens*	Maximum Allowed Initial Luminaire Lumens (Table G)	Controls	Compliant
A	Front Entry	Decorative wall sconce	No	9W CFL	420	420	None	Yes
B	Garage Door	Fully shielded wall pack	Yes	23W CFL	1050	1260	Occupancy Sensor	Yes
C	Back Entry	Decorative wall sconce	No	7W CFL	280	315	Occupancy Sensor	Yes
D	Shed Entry	Fully shielded wall pack	Yes	40W INC	343	1260	Occupancy Sensor	Yes
E	Driveway	Fully shielded post top	Yes	13W CFL	1260	1260	None	Yes

*Initial Luminaire Lumens are calculated by multiplying the total initial lamp lumens by the luminaire efficiency.
If the luminaire efficiency is not known, assume an efficiency of 70% and multiply the lamp lumens value by 0.7.

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 Cubs)

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. Other 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

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 (cont.) - 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 (cont.) - 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 & PENALTIES - Ordinance Text

(Reserved)

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 (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 & PENALTIES - Ordinance Text**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 lms/space	490 lms/space	630 lms/space	840 lms/space	1,050 lms/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
Base Allowance				
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 - Lumen Allowances, in Addition to Base Allowance

	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Additional allowances for sales and service facilities. No more than two additional allowances per site, Use it or Lose it.					
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 LF	1,500 per LF	2,000 per LF
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 lumens per pump (based on 5 fc horiz)	8,000 lumens per pump (based on 10 fc horiz)	16,000 lumens per pump (based on 20 fc horiz)	24,000 lumens per pump (based on 20 fc horiz)

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 (cont.) - 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.

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

*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 (cont.) - User's Guide

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).

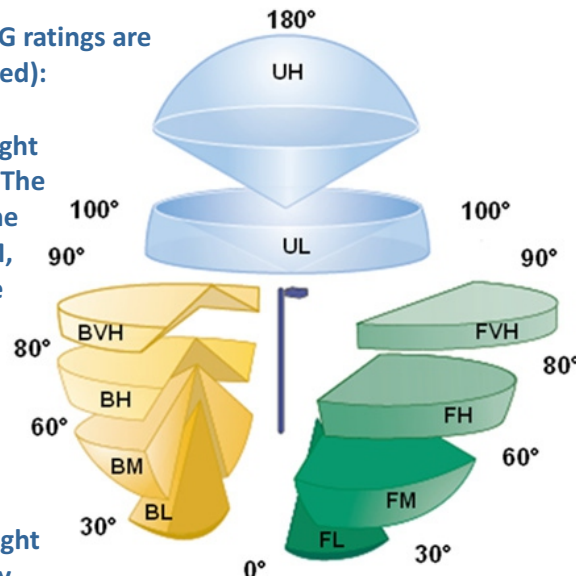
The three components of BUG ratings are based on IES TM-15-07 (revised):

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 (cont.) - Ordinance Text

IX. TABLES - TABLE C BUG RATING (cont.) - User's Guide

(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 (cont.) - Ordinance Text

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

TABLE C-2	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
Allowed Uplight Rating	U0	U1	U2	U3	U4
Allowed % light emission above 90° for street or Area lighting	0%	0%	0%	0%	0%

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

TABLE C-3	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
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 (cont.) - Ordinance Text**Table D Performance Method Allowed Total Initial Site Lumens**

May be used on any project.

Lighting Zone	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
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 plan view unless otherwise noted.

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
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”.					
Building Entrances or Exits. This allowance is per door. In order to use this allowance, luminaires must be within 20 feet of the 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/SF	16/SF	24/SF

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.

TABLE E EXAMPLE - PERFORMANCE METHOD - User's Guide**IX. TABLES (cont.) - Ordinance Text****Table E - Performance Method Additional Initial Lumen Allowances (cont.)**

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Sales or Non-sales Canopies. 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/SF	6/SF	12/SF	18/SF
Guard Stations. 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/SF	12/SF	24/SF	36/SF
Outdoor Dining. 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/SF	5/SF	10/SF	15/SF
Drive Up Windows. 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	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
Additional Lumens Allowances for Service Stations only. Service stations may not use any other additional allowances.					
Vehicle Service Station Hardscape. 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/SF	8/SF	16/SF	24/SF

IX. TABLES (cont.) - Ordinance Text

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

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Vehicle Service Station Canopies. 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.	0	8/SF	16/SF	32/SF	32/SF
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.					
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 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.	0	4/SF	8/SF	12/SF	18/SF
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/LF	1,500/LF	2,000/LF

IX. TABLES (cont.) - Ordinance Text

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

Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
0.05 FC or 0.5 LUX	0.1 FC or 1.0 LUX	0.3 FC or 3.0 LUX	0.8 FC or 8.0 LUX	1.5 FC or 15.0 LUX

IX. TABLES (cont.) - Ordinance Text

Table G - Residential Lighting Limits

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Row 1 Maximum Allowed Luminaire Lumens* for Unshielded Luminaires at one entry only	Not allowed	420 lumens	630 lumens	630 lumens	630 lumens
Row 2 Maximum Allowed Luminaire Lumens* for each Fully Shielded Luminaire	630 lumens	1,260 lumens	1,260 lumens	1,260 lumens	1,260 lumens
Row 3 Maximum Allowed Luminaire Lumens* for each Unshielded Luminaire excluding main entry	Not allowed	315 lumens	315 lumens	315 lumens	315 lumens
Row 4 Maximum Allowed Luminaire Lumens* for each Landscape Lighting	Not allowed	Not allowed	1,050 lumens	2,100 lumens	2,100 lumens
Row 5 Maximum Allowed Luminaire Lumens* for each Shielded Directional Flood Lighting	Not allowed	Not allowed	1,260 lumens	2,100 lumens	2,100 lumens
Row 6 Maximum Allowed Luminaire Lumens* for each Low Voltage Landscape Lighting	Not allowed	Not allowed	525 lumens	525 lumens	525 lumens

* Luminaire lumens equals Initial Lamp Lumens for a lamp, multiplied by the number of lamps in the luminaire

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.

X. DEFINITIONS - User's Guide

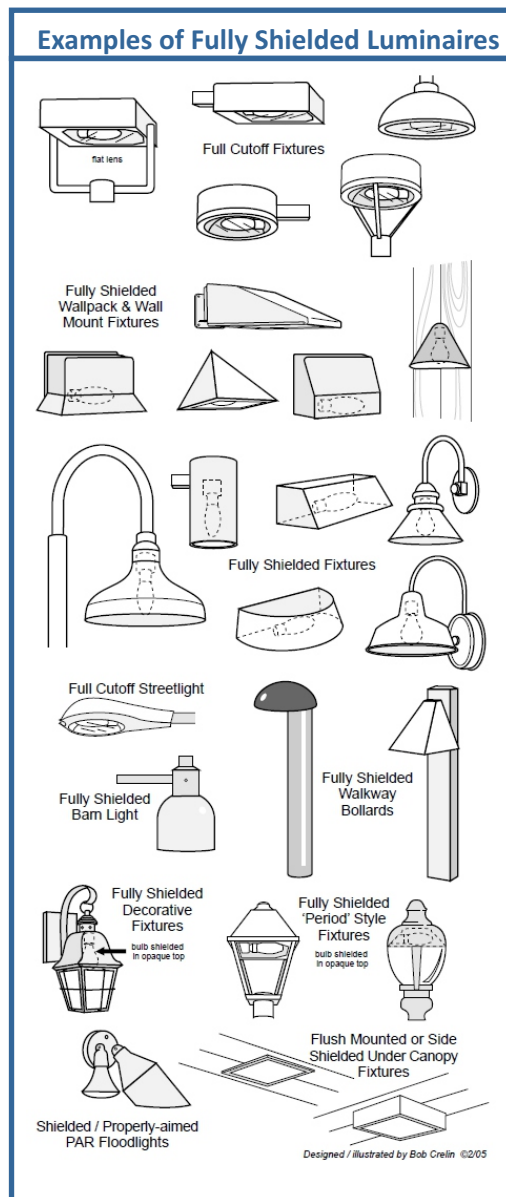
Definitions are typically generally added to any code when new code sections are added. The definitions are legally required and play a significant role in the interpretation of the ordinance and code.

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

<i>Absolute Photometry</i>	Photometric measurements (usually of a solid-state luminaire) that directly measures the footprint of the luminaire. Reference Standard IES LM-79
<i>Architectural Lighting</i>	Lighting designed to reveal architectural beauty, shape and/or form and for which lighting for any other purpose is incidental.
<i>Authority</i>	The adopting municipality, agency or other governing body.
<i>Astronomic Time Switch</i>	An automatic lighting control device that switches outdoor lighting relative to time of solar day with time of year correction.
<i>Backlight</i>	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.
<i>BUG</i>	A luminaire classification system that classifies backlight (B), uplight (U) and glare (G).
<i>Canopy</i>	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.)
<i>Common Outdoor Areas</i>	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.
<i>Curfew</i>	A time defined by the authority when outdoor lighting is reduced or extinguished.

**X. DEFINITIONS - Ordinance Text**

<i>Emergency conditions</i>	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.
<i>Footcandle</i>	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.
<i>Forward Light</i>	For an exterior luminaire, lumens emitted in the quarter sphere below horizontal and in the direction of the intended orientation of the luminaire.
<i>Fully Shielded Luminaire</i>	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.
<i>Glare</i>	Lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.
<i>Hardscape</i>	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.
<i>Hardscape Area</i>	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

<i>Hardscape Perimeter</i>	The perimeter measured in linear feet is used to calculate the Total Site Lumen Limit in the Performance Method. Refer to Hardscape definition.
<i>IDA</i>	International Dark-Sky Association.
<i>IESNA</i>	Illuminating Engineering Society of North America.
<i>Impervious Material</i>	Sealed to severely restrict water entry and movement
<i>Industry Standard Lighting Software</i>	Lighting software that calculates point-by-point illuminance that includes reflected light using either ray-tracing or radiosity methods.
<i>Lamp</i>	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.
<i>Landscape Lighting</i>	Lighting of trees, shrubs, or other plant material as well as ponds and other landscape features.
<i>LED</i>	Light Emitting Diode.
<i>Light Pollution</i>	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

<i>Light Trespass</i>	Light that falls beyond the property it is intended to illuminate.
<i>Lighting</i>	“Electric” or “man-made” or “artificial” lighting. See “lighting equipment”.
<i>Lighting Equipment</i>	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.
<i>Lighting Zone</i>	An overlay zoning system establishing legal limits for lighting for particular parcels, areas, or districts in a community.
<i>Lighting Equipment</i>	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.
<i>Low Voltage Landscape Lighting</i>	Landscape lighting powered at less than 15 volts and limited to luminaires having a rated initial luminaire lumen output of 525 lumens or less.
<i>Lumen</i>	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).
<i>Luminaire</i>	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.

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.”

X. DEFINITIONS - Ordinance Text

<i>Luminaire Lumens</i>	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.
<i>Lux</i>	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.
<i>Mounting height</i>	The height of the photometric center of a luminaire above grade level.
<i>New lighting</i>	Lighting for areas not previously illuminated; newly installed lighting of any type except for replacement lighting or lighting repairs.
<i>Object</i>	A permanent structure located on a site. Objects may include statues or artwork, garages or canopies, outbuildings, etc.
<i>Object Height</i>	The highest point of an entity, but shall not include antennas or similar structures.
<i>Ornamental lighting</i>	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

<i>Ornamental Street Lighting</i>	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.
<i>Outdoor Lighting</i>	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.
<i>Partly shielded luminaire</i>	A luminaire with opaque top and translucent or perforated sides, designed to emit most light downward.
<i>Pedestrian Hardscape</i>	Stone, brick, concrete, asphalt or other similar finished surfaces intended primarily for walking, such as sidewalks and pathways.
<i>Photoelectric Switch</i>	A control device employing a photocell or photodiode to detect daylight and automatically switch lights off when sufficient daylight is available.
<i>Property line</i>	The edges of the legally-defined extent of privately owned property.

X. DEFINITIONS - Ordinance Text

<i>Relative photometry</i>	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.
<i>Repair(s)</i>	The reconstruction or renewal of any part of an existing luminaire for the purpose of its on-going 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.
<i>Replacement Lighting</i>	Lighting installed specifically to replace existing lighting that is sufficiently broken to be beyond repair.
<i>Sales area</i>	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.
<i>Seasonal lighting</i>	Temporary lighting installed and operated in connection with holidays or traditions.
<i>Shielded Directional Luminaire</i>	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.
<i>Sign</i>	Advertising, directional or other outdoor promotional display of art, words and/or pictures.

X. DEFINITIONS - Ordinance Text

<i>Sky Glow</i>	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.
<i>Temporary lighting</i>	Lighting installed and operated for periods not to exceed 60 days, completely removed and not operated again for at least 30 days.
<i>Third Party</i>	A party contracted to provide lighting, such as a utility company.
<i>Time Switch</i>	An automatic lighting control device that switches lights according to time of day.
<i>Translucent</i>	Allowing light to pass through, diffusing it so that objects beyond cannot be seen clearly (not transparent or clear).
<i>Unshielded Luminaire</i>	A luminaire capable of emitting light in any direction including downwards.
<i>Uplight</i>	For an exterior luminaire, flux radiated in the hemisphere at or above the horizontal plane.
<i>Vertical Illuminance</i>	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 uplight 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
LZ-0	U-0
LZ-1	U-1
LZ-2	U-2
LZ-3	U-3
LZ-4	U-4

Charlevoix Planning Commission

Old Business

Title: Commercial Mixed-Use Standards, Regulations and Overlay Map

Date: March 11, 2024

Presented By: Jonathan Scheel, Zoning Administrator

Background:

At the February 12 , 2024, meeting, the Planning Commission preliminary approved the Commercial Mixed-Use Standards with changes. Regulations supporting the standards are now being presented to the Planning Commission. Also, a draft Commercial Mixed-Use Overlay Map is included that aligns the new regulations with the areas denoted in the Master Plan as Mixed Use.

Recommendation:

Review, comment, and make changes

Attachments:

1. Commercial mixed-use standards
2. CMU ordinance 2-24
3. draft overlay map

Architectural Design Standards Commercial Mixed-Use

Commercial mixed-use should respect adjacent development and provide a pleasing pedestrian street orientation and comfortable living environments.

This subsection for commercial mixed-use includes design goals and guidelines organized into six categories:

- 1. Site Planning
- 2. Ground Floor Land Use
- 3. Architectural Design
- 4. Lighting
- 5. Materials and Color
- 6. Streetscape



Above: **UNDESIRABLE**
These apartment buildings have ground level parking and a tall blank wall along the street. The design is out of scale with the adjacent buildings. The architecture is spare and unattractive.

1. Site Planning

Mixed-use residential projects should be designed to create new and enhance existing pedestrian friendly streets that are effective social and economic centers for neighborhoods and the community.

Vertical Mixed-use:

- Mixed-use residential projects in existing storefront districts should be designed to fit into the block reflecting the scale and rhythms found along the street edge. The majority of new structures should be a minimum of two stories. When possible, view corridors to protect established views from a given observer against building development of Lake Charlevoix or other specific point of interest should be left within a development.
- New areas should establish a pattern and design that provides multi-modal transit-oriented businesses and life styles.
- Storefront edges should be set back from the curb to accommodate outdoor eating or other anticipated activities and amenities.
- Mixed-use residential projects should be oriented to take advantage of foot traffic and visibility from the street.
- Storefront edges should be transparent with a short kickplate, a full height storefront, and transom windows.
- Parking lots or structures for residents and ground floor commercial tenants should not separate the project from the street edge. Place parking to the side, rear or within a mixed-use project so as to not interrupt the pedestrian orientation.
- Project surface parking areas should be shaded and visually screened from the sidewalk with landscaping.
- Underground parking structures where possible are encouraged.
- Access drives to parking should be located to minimize their impact on pedestrians.
- Projects should be set back to traditional front yard depth on residential streets.

Horizontal Mixed-use:

- Adjacent commercial and multi-family residential uses should be designed to create and share public spaces and streets.
- Pedestrian connections between commercial and residential developments should be active and friendly.
- Commercial storefront uses should face public spaces and street edges.
- Large blank walls should not face streets or walkways.
- Residential entries and lobbies should face streets and common open spaces.
- Landscape concepts should enhance the linkages between residential and commercial uses.
- Signage, lighting, and landscaping should provide a thematic identity for mixed-use sites.
- Service areas for commercial uses should be located at the edge of the site and screened to reduce impacts on residents.
- Unnecessary tall concert block sound walls should not separate commercial uses from residential uses.

- 1
- 2
- 3
- 4
- 5



- 6
- 7
- 8
- 9
- 10

- 1. Mechanical Cover
- 2. Countertop
- 3. Rooftop Deck
- 4. Second Floor
- 5. First Floor
- 6. Roof Canopy
- 7. Canopy Columns
- 8. Planter
- 9. Glass Railing
- 10. Commercial or Residential Picture Window

2. Ground Floor Activities

Ground floor uses in residential mixed-use projects should generally take advantage of visual and physical pedestrian access and support economic objectives for the neighborhood or district.

- Mixed-use projects in the Downtown and neighborhood commercial areas need to satisfy economic and social objectives for storefront shopping and commercial services.
- When ground floor commercial uses are not possible, projects should include common amenities for projects, such as health clubs and meeting space.
- For lower foot traffic areas, ground floor uses can include live-work spaces that take advantage of walk-in access for clients.
- Portions of a project's edges facing residential streets should include front stoops, yards, and entry porches.
- Projects shall not have blank walls or parking garages along public streets and sidewalks



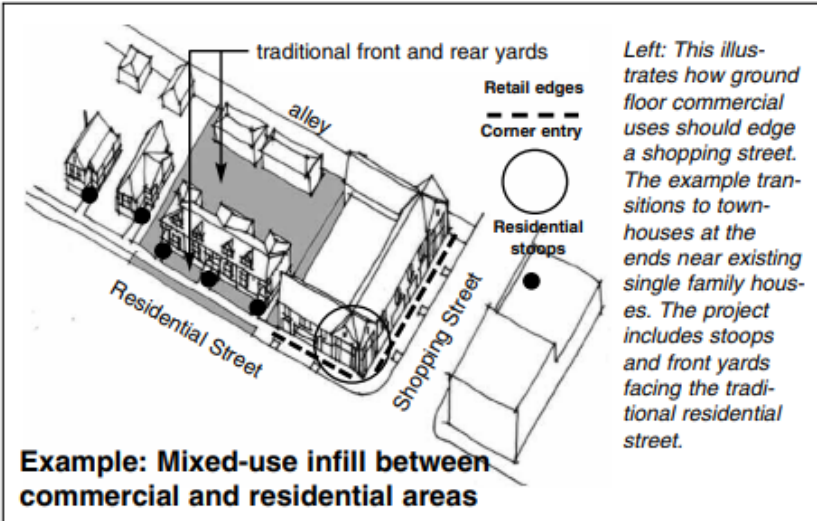
3. Architectural Design

The architectural design of mixed-use projects should reflect the historic or traditional context utilizing design elements and forms that fit the neighborhood or district.

- A mixed-use building's form and design should have a deliberate street and street corner orientation.
- Upper levels should have expressive design features, such as balconies and bay windows, that give the building a rhythm and residential scale.
- Roof forms should reflect the project's architectural context. In a commercial context, the roof may be flat or have a strong horizontal cornice element. In a residential neighborhood edge or village context, roof forms should include hip or gable elements.
- The massing concepts of multi-story mixed-use development should transition in scale between commercial streets and smaller single family residential streets. *Design concepts may include:*
 - Stepping down the scale and mass and increasing side or rear yard setbacks of taller mixed-use projects where they adjacent to existing single-family areas;
 - Use residential roof forms on residential streets;
 - Orienting units towards public streets and commons rather than neighboring backyards;
 - Enclosing parking to reduce the impact on adjacent houses; and/or
 - Interfacing single and mixed-use development with streets or open spaces in new developments

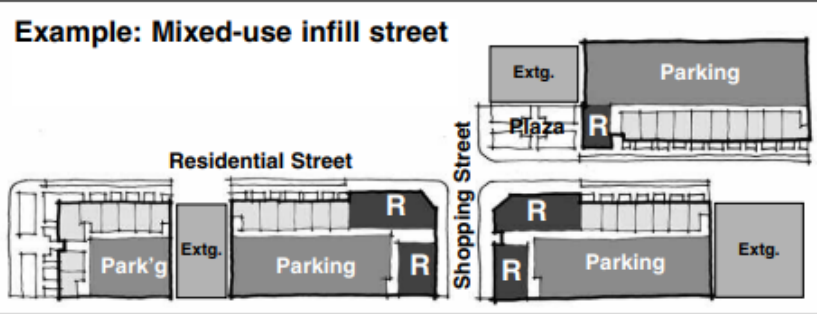


Above: **DESIRABLE**
 (1) This mixed-use project provides streetscaping and outdoor seating areas on a wide sidewalk.
 (2) This storefront includes a signage and graphic concept that supports ground floor retailing.



Right: **DESIRABLE**
 Mixed-use streets should have transparent storefronts aligned along the sidewalk on shopping streets. Residential porches or "stoops" should be located along residential sides of projects. Parking should be located along rear alleys or under the housing.

Small parks and plazas should be developed as part of the neighborhood. Plazas along shopping streets should have retail uses around the edges.



4. Lighting

Lighting should be an integral part of the planning and design of mixed-use projects anticipating the needs of the shopping street, storefront businesses, and residents.

- Lighting on commercial elevations of mixed-use projects should support overall objectives for the street and storefront design.
- Residential front porches should have individual lights that illuminate entries and walkways.
- Lighting in common areas should be shielded from adjacent residential units.
- All lighting should be shielded and meet the intent of Dark Sky Ordinances

5. Materials and Color

Selection of materials and finishes should reflect the materials in the district and support overall image and massing concepts.

- Commercial frontage portions of mixed-use projects should utilize materials and colors that support retailing and image objectives for shopping environments.
- Portions of mixed-use projects with residential frontage should use colors and materials that enhance the project's architectural concepts and are compatible with adjacent residential streets.
- Architecture within each mixed-use project should use a palette of materials that convey an image of quality and durability. Certain materials have an inherently inexpensive, insubstantial, or garish quality. These materials should not be used in new construction or renovation.

Examples include: Roofs: glazed or painted tiles, highly reflective metal or sheet materials, fake shingles made from metal or plastic materials.

Walls: vinyl, metal, plywood, T-111 siding, Masonite or other sheet materials

- Wood or hardboard siding, if used, should be, lap, shiplap or board-and-batten.
- Shiplap should be installed so there are no visible joints. Board-and-batten should be installed so there are no visible joints in the underlying "board" material.
- Painted surfaces should use colors that reinforce architectural concepts and are compatible with natural materials, such as brick or stone.



Above: DESIRABLE
 This mixed-use project transitions in scale and design as it “turns the corner” from a storefront shopping street to a residential block. It features:

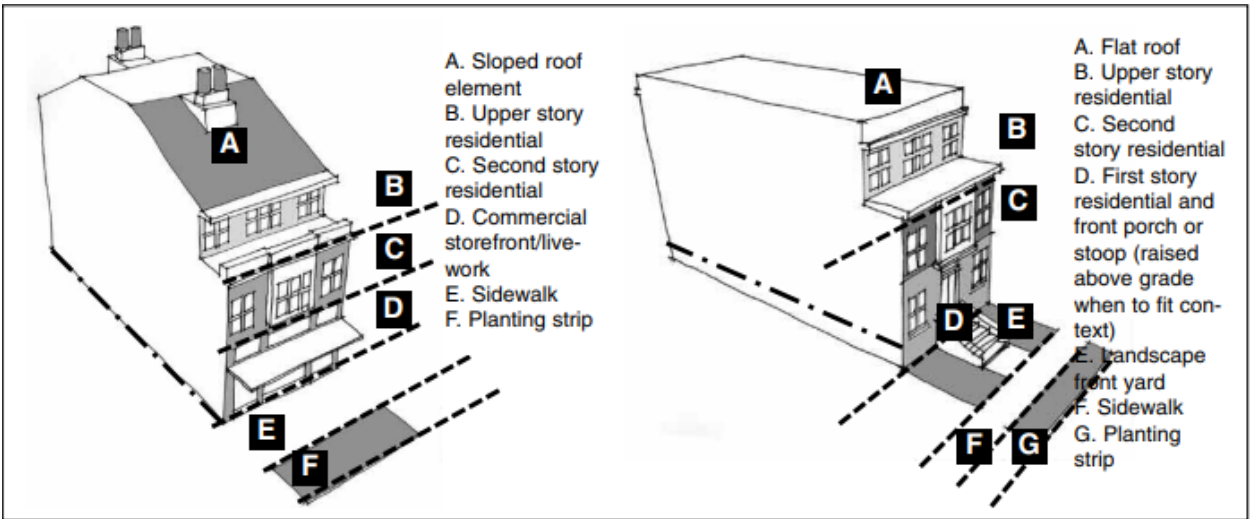
- Transparent storefront level with neighborhood services and housing above;
- Stepping storefront building up into a third story under a pitched roof; and
- Designing attached housing to reflect the patterns and scale of single family housing found on the block.



6. Streetscape

New and infill mixed-use residential projects should provide street trees, lighting and street furniture that support the streetscape concepts for the district.

- Sidewalks adjacent to mixed-use development should be wide enough to accommodate outdoor sitting areas and landscape. This should include an area for planting, for sitting, and for pedestrian travel.
- Street trees are required for sidewalk areas. Trees should be spaced to be coordinated with the bay spacing and storefront design of the project. Coordination of tree types with the Shade Tree Commission is encouraged.
- Street furniture and pedestrian-scale lighting should be included in development planning for mixed-use projects.



Above: DESIRABLE
 This illustrates guidelines for a building bay in a two and three story residential context where commercial or live-work uses are on the ground floor.

Above: DESIRABLE
 This illustrates a typical residential building bay in a context with flat roofs on adjacent buildings. On traditional residential streets with front yards, units should be set back and have stoops or porches facing the street.

COMMERCIAL MIXED-USE REGULATIONS

SECTION 1 ESTABLISHMENT OF ZONING REGULATIONS.

- A. **Purpose.** The purpose of these Zoning Regulations is to implement the Master Plan.
- B. **Applicability.** The Zoning Regulations set forth in Section 1 of this Ordinance shall apply citywide to all Permit Applications, as defined in this Ordinance. As they apply to the City's review and consideration of Permit Applications, these Zoning Regulations supersede any conflicting provisions of the Existing Zoning Ordinance in effect on the effective date of these Zoning Regulations,
- C. **Land Use Definitions to Implement Zoning Regulations.** The following definitions are for the purpose of implementing the Zoning Regulations established by Section 1 of this Ordinance.

Artisan/Small-Scale Manufacturing. The artisan/small-scale manufacturing use type refers to establishments primarily engaged in on-site production of goods by hand manufacturing or artistic endeavor, which involves only the use of hands tools or domestic mechanical equipment not exceeding five horsepower or kilns not exceeding 25 kilowatts, and the incidental direct sale to consumers of only those goods produced on site. Typical uses include ceramic studios, candle making shops, and custom jewelry manufacturers.

Artist's Studio. Workspace for an artist or artisan, including individuals practicing one of the fine arts or performing arts, or an applied art or craft. This use may include incidental display and retail sales of items produced on the premises and instructional space for small groups of no more than 18 students per instruction. It does not include joint living and working units (See Live-Work).

- **Studio-Light.** Small-scale art production that is generally of a low impact and no more than a maximum floor area of 2,500 square feet. Typical uses include painting, photography, jewelry, glass, textile, and pottery studios.
- **Studio-Heavy.** Art production on a medium or large scale generally using heavy equipment and greater floor area than 2,500 square feet. Typical uses include large-scale metal and woodworking studios.

Brewpub. A full-service or limited-service restaurant with a micro-brewery as an accessory use that meets the requirements of Michigan Liquor Control Commission, where no more than 5,000 barrels of beer are produced per year. A brewpub may sell other supplier's beer, including other hand-crafted or micro-brewed beers as well as wine to patrons for consumption on its premises.

Breweries, Limited. Small-scale facilities that produce beer and similar beverages onsite.

- **Brewery, Brew-on-Premises.** A do-it-yourself brewery where customers produce craft style beer or wine on the premises of a brewery or micro-brewery. Customers also may purchase the ingredients, rent the equipment, time, and space, and be provided assistance by an on-site brewmaster.
- **Micro-brewery.** An establishment that produces annually less than 5,000 barrels of ales, beers, meads, hard ciders and/or similar beverages onsite. Micro- breweries may also serve beverages onsite and sell beverages for offsite consumption pursuant to the regulations of the Michigan Liquor Control Board and the federal

COMMERCIAL MIXED-USE REGULATIONS

Bureau of Alcohol, Tobacco, and Firearms.

Catering Service. A business that prepares food for consumption on the premises of a client or at any other location separate from where the food was prepared.

Cultural Facility. Facilities engaged in activities to serve and promote aesthetic and educational interest in the community that are open to the public on a regular basis. This classification includes performing arts centers for theater, music, dance, and events; spaces for display or preservation of objects of interest in the arts or sciences; libraries; museums; and public art galleries. It does not include schools or institutions of higher education providing curricula of a general nature.

Media Production. Facilities for production of motion pictures, television, video, sound, computer, and other communications media production.

Offices for Walk-In Clientele. Offices providing direct services to patrons or clients without prior appointments. This use classification includes employment agencies, insurance agent offices, real estate offices, travel agencies, utility company offices, and offices for elected officials. It does not include banks or check-cashing facilities, which are separately classified and regulated.

Printing & Publishing. A use engaged in printing by letterpress, lithography, gravure, screen, offset, or electrostatic (xerographic) copying; and other activities serving the printing trade such as bookbinding, typesetting, engraving, photo-engraving and electrotyping. This use also applies to the publishing of newspapers, books, and periodicals; manufacturing business forms and binding devices. Quick printing services are included in the Printing and Copying use classification.

Research and Development. The research and development use type refers to establishments primarily engaged in the research, development, and controlled production of high-technology electronic, industrial or scientific products or commodities for sale, but excludes uses that may be objectionable by reason of production of offensive odor, dust, noise, bright lights, vibration or the storage of hazardous material or products, or uses that threaten public safety. Typical uses include biotechnology and software development firms.

Retail Sales.

- **General Retail Sales, Small-Scale.** The retail sale or rental of merchandise not specifically listed under another use classification. This classification includes retail establishments with 15,000 square feet or less of sales area; including department stores, clothing stores, pet supply stores, small hardware and garden supply/nurseries stores, and businesses retailing goods including, but not limited to, the following: toys, hobby materials, handcrafted items, jewelry, cameras, photographic supplies and services (including portraiture and retail photo processing), medical supplies and equipment, pharmacies, electronic equipment, sporting goods, kitchen utensils, hardware, appliances, antiques, private art galleries, art supplies and services, glass and windows, paint and wallpaper, carpeting and floor covering, office supplies, bicycles, video rental, and **new automotive parts and accessories** (excluding vehicle service and installation). Retail sales may be combined with other services such as office machine, computer, electronics, and similar small-item repairs.
- **General Retail Sales, Large-Scale.** Retail establishments with over 15,000 square feet of sales area that sell merchandise and bulk goods for individual

COMMERCIAL MIXED-USE REGULATIONS

consumption, including membership warehouse clubs, where sales of grocery items do not occupy more than 25 percent of the floor area.

- **With Drive-Through.** A retail establishment with drive-through facilities.

D. **Overlay Districts Established.** The purpose of this subsection D is to establish the following Overlay Districts consistent with the Master Plan. The locations and boundaries of the Overlay Districts are delineated in Exhibit A attached hereto and incorporated herein.

1. **MU-R Residential Mixed Use.** The Residential Mixed-Use district prioritizes residential development with associated non-residential development, neighborhood-scale retail and office space. In addition to a mix of housing types, other uses like live/work units, artist studios, and businesses that are less than 4,000 square feet are permitted. Residential units are required with densities ranging between 16 and 30 housing units per gross acre.
2. **MU-CL Corridor Mixed Use Low.** The Corridor Mixed Use Low district provides for developments that integrate residential and non-residential uses. It is intended for a mixture of uses in a single building; however, if a mixture of uses is infeasible due to site constraints or development costs, single uses are allowed, including neighborhood and community retail; eating and drinking establishments; small-scale commercial recreation; residential; financial, business, and personal services; educational and social services; and offices. No separate residential density standards shall apply.

E. **Effect of Ordinance on Existing Zoning Districts.** To the extent that the Existing Zoning Ordinance applies a different zoning district designation to any area within the boundaries of an Overlay District established by this Ordinance, the zoning district designation of the Existing Zoning Ordinance shall be superseded and have no force.

F. **Basis for Zoning Map.** The Zoning Districts established in Exhibit A are based on the Master Plan Land Use Designations for Mixed Use for pedestrian-oriented development.

G. **Zoning District Regulations.** The purpose of this subsection G is to establish use and development regulations for the Zoning Districts.

1. **Uses Permitted, Conditionally Permitted, and Prohibited.** Land uses, as classified in the Existing Zoning Ordinance and in this Ordinance, are permitted, conditionally permitted, or prohibited in the Zoning Districts as indicated in Table 1. Permitted uses are indicated by a "P", conditionally permitted uses are indicated by a "C", uses subject to specific standards are indicated by a "S", and prohibited uses are indicated by a blank. Where a subclassification, which is indented, has a different designation from the one given to the more general land use, that designation governs. Conditionally permitted uses are allowed upon the approval of a use permit pursuant to Section 153.234 of the Zoning Ordinance and any additional findings that may be required by this Ordinance.

TABLE 1: DRAFT LAND USE REGULATIONS FOR MIXED USE ZONES

*P = Permitted C = Conditional S = Specific Standards Apply; See Section 153.234
Blank= Not Allowed*

Zoning Districts	MU-R	MU-CL	Additional Regulations
A. Commercial Uses			
1. Animal care and sales			

COMMERCIAL MIXED-USE REGULATIONS

Animal care facilities, excluding exterior pens or runs		p	
Animal retail sales and supplies, excluding exterior pens or runs		p	
Taxidermy shops			
2. Business sales and service			
Locksmith		p	
Office furniture sales and rentals		p	
Office supply and equipment shops (incl. accessory repair)			
Printing and copy shops		p	
Printing and publishing		p	
3. Food and beverage service establishments, stores			
Food service establishments	<i>See subclassifications below</i>		*For restaurants, cocktail lounges and bars, with outdoor seating see Sec 153.118 (C)
With or without accessory serving of beer or wine	CS*	p	
With a bar, live entertainment or dancing		CS	Drive-through, see Sec 153.118 (B)
With drive-through use		CS	
Food and beverage stores, specialty	p	p	*C if operating 24 hours or before 7AM and/or adjacent to residential
Bakeries, retail	P*	P*	
Brewpubs		CS	
Catering service			
Convenience market	C	p	
Grocery stores and supermarkets		p	
Liquor stores		C*	
- Motor vehicle sales and service			
Sales, new or used vehicles (including repair accessory to sales)			
Sales, parts and supplies (and accessory service)			
5. Personal services			
Artist studio, light	p	p	*C if> than 5,000 sf
Artist's studio, heavy		p	
Barber shops, beauty salons, nail salons, personal grooming	p	p	
Check cashing, bail bond services			
Dry cleaning, laundromats, laundries		P*	
Mail services	p	p	
Shoe repair and shoeshine	p	p	
Tailor/seamstress	p	p	
Travel agencies		p	
Weight loss establishments		p	
6. Recreation facilities, commercial			
Health clubs/gyms		p	*C if > than 3,000 sf
Health spas, nails, other	P*	p	
7. Retail uses			

COMMERCIAL MIXED-USE REGULATIONS

Zoning Districts	MU-R	MU-CL	Additional Regulations
Auction house			*C if > than 5,000 sf Drive-through, see Sec 153.118 (B)
General Retail Sales	See subclassifications below		
Large scale			
Small scale		p	
With drive through uses		CS	
Second hand and pawn shops		p	
Shopping centers			
8. Visitor accommodations			
Hotels, motels, STRs		P*	*C if > than10,000 sf
Visitor information centers		p	
B. Industrial Uses			
Artisan/small-scale manufacturing		p	
"Boutique" food processing with retail sales		p	
C. Offices and Related Uses			
1. Financial services			
Banks, savings and loans, and other financial institutions		P*	*C if > than 5 ,000 sf
Financial services offices		p	
2. Offices and Related Uses			
Clinics		C	
Media production		p	
Medical, dental and health-related offices		P*	*C if > than 5,000 sf
Office (administrative, business, and professional)		P*	*C if > than 5,000 sf
Offices with walk-in clientele	p	p	
D. Public and Quasi-Public Uses			
1. General			
Clubs and lodges, including for youth		P	
Cultural facility		P	
Other public/quasi-public uses of an administrative, educational, religious, communications or public service nature		P	
2. Schools			
Parochial, private	C	C	
Public	p	p	
Vocational, business trades			
3. Transportation facilities			
Parking facilities, commercial or municipal (5+ spaces)		C	
Transit or bus stations			

COMMERCIAL MIXED-USE REGULATIONS

Zoning Districts	MU-R	MU-CL	Additional Regulations
Single-family attached	p	p	For condominiums, see Sec. 153.117(B)
Multifamily residential	p	p	
Group residential, including SROs	CS	CS	
Live/work developments		C	
F. Accessory Structures and Uses			
Accessory structures and uses	P if principal use is permitted; C if principal use requires a use permit. See Chapter 153.116		
Automatic teller machines		p	
G. Other Uses			
Nonresidential condominiums		p	See standards Ch. 153.117 (B)

2. Additional Land Use Regulations

- a. Mixed use development. Mixed use development is permitted on a site that (i) is designated for mixed uses by the Master Plan, (ii) all of the proposed uses are permitted in the applicable zoning district, and (iii) no conversion of an existing residential rental unit is proposed.
- b. Residential rental units. Conversion of existing residential rental units to nonresidential units is allowed only with a conditional use permit and is subject to the same standards as new development unless waived by the Planning Commission.
- c. Commercial Development in MU-R District. Commercial only development is not allowed. The area devoted to commercial uses cannot exceed 30 percent of the total building floor area, and all non-residential uses must be located at the ground level.

3. **Development Standards.** The development standards for the Commercial Mixed-Use Zoning Districts are shown in Table 2.

TABLE 2: CM USE DISTRICTS-PROPERTY DEVELOPMENT STANDARDS

Property Development Standards	MU-R	MU- CL	Additional Standards
Maximum density (units/gross acre)	25*	NA	* >.5 round up
Maximum Height (in feet)	27	39	
Maximum number of stories	2	3	
Minimum lot area (sq. ft)	6,000	6,000	

COMMERCIAL MIXED-USE REGULATIONS

Minimum lot frontage (feet) at front property line	50	50	
Front setback (feet)			(1)
- Arterial or collector	15	10	(2)
- Local street	15	15	(2)
Street side setback (feet)			
- Arterial or collector	15		(3)
- Local street	15	10	(3)
Garage door setbacks from street (feet)	20	20	
Side and Rear setback (feet)	Non-residential: none, residential: see Sec. 153.072 standards for R-1 & R-2 districts		(4)

Notes:

- (1) Front and street side setbacks may be reduced to 10 feet with design review when the reduction improves the overall site design, design of the building or better integrates the building with its site and surroundings and a 10-foot-wide sidewalk is provided.
- (2) Street side setbacks may be reduced to 10 feet for 2 story buildings and 10 feet for 3 story buildings with design review when the reduction improves the overall site design, design of the building or better integrates the building with its site and surroundings and a 6-foot-wide sidewalk is provided.
- (3) Commercial and mixed-use development on land that abuts a residential district will be designed and constructed, and will be operated and maintained to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity; will be compatible with adjacent uses of land; and will not change the essential character of the area in which it is proposed;
4. **Build-to Line.** Buildings shall be constructed at the street frontage or required setback line (the "build-to" line) for at least 60 percent of the building frontage. Portions of the area between the building and lot line shall be paved so that it functions as a wider public sidewalk and public areas. This requirement may be modified or waived by the Planning Commission upon finding that:
 - a. Substantial landscaping will be located between the build-to line and ground floor residential units to soften visual impact of buildings;
 - b. Entry courtyards, plazas, entries, or outdoor eating and display areas will be located between the build-to line and building, provided that the buildings will be built to the edge of the courtyard, plaza, or outdoor dining area; or
 - c. The building will incorporate an alternative entrance design that will create a welcoming entry feature facing the street.
5. **Required Side and Rear Yards for Residential Uses.** In order to provide light

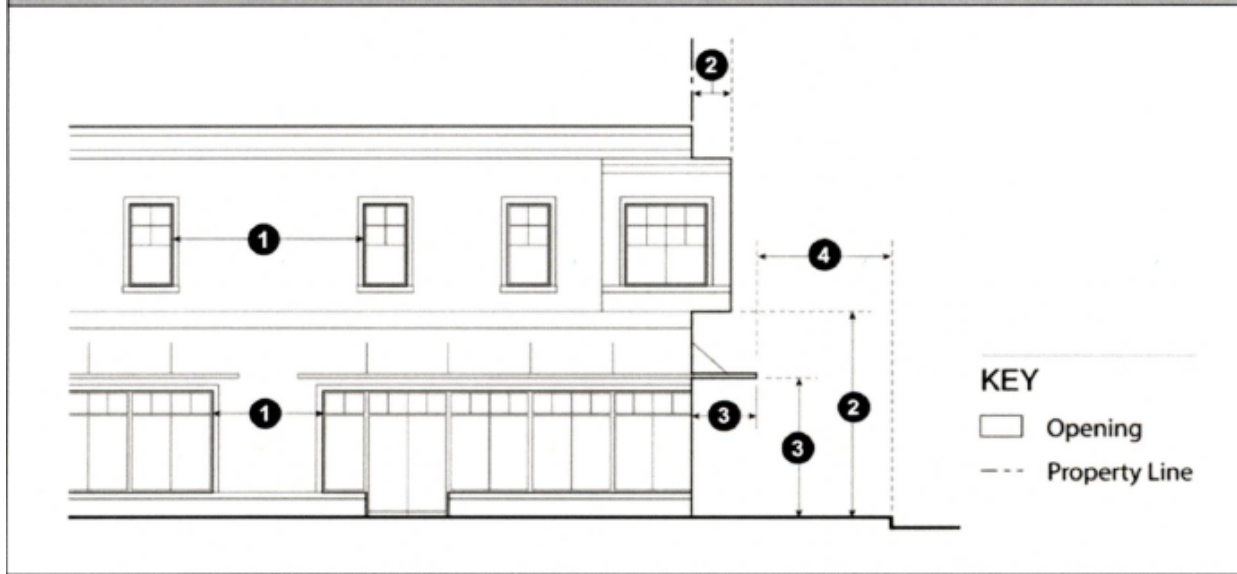
COMMERCIAL MIXED-USE REGULATIONS

and air for residential units, the following minimum setbacks apply to any building wall containing windows for residential units and facing an interior side or rear yard.

- a. For any wall containing windows, a setback of at least 5 feet shall be provided.
 - b. For any wall containing bedroom windows, a setback of at least 10 feet shall be provided.
 - c. For any wall containing a living room or other primary room windows, a setback of at least 10 feet shall be provided.
 - d. The required setbacks apply to that portion of the building wall containing a window and extending three feet on either side of the window.
6. **Minimum Ground-floor Height.** The minimum ground-floor height shall be 12 feet for residential uses and 15 feet for non-residential uses.
7. **Exceptions to Maximum Height Limits.**
- a. Architectural Features. A parapet wall, cornice, or mechanical equipment may project up to six feet above the maximum height limit.
 - b. Towers. If the project site is greater than 15,000 square feet, a tower or other projecting architectural elements may extend up to 12 feet above the top of a pitched roof, provided that the square footage of the element(s) do not total more than 15 percent of the building footprint. The area above the uppermost permitted floor of the element(s) shall not be a habitable space.
 - i. The composition of the tower element shall be balanced, where the width of the tower has a proportional relationship to the height of the tower.
 - ii. The tower element shall be proportional to the rest of the building.
 - iii. The tower element shall not be stepped back at any point,
 - iv. The maximum horizontal dimension of the tower element shall not exceed 52 feet. Fenestration shall be greater at the base of the tower than at the top.
 - v. The roof shall include architectural detailing, such as a cornice or eave.
8. **Upper Story Limitations.** For the MU-CL zoning district abutting a R1 or R2 residential zoning district, the top story of all three-story buildings shall contain only residential uses and shall be stepped back a minimum of 10 feet from the story below on the abutting side.
9. **Wide Buildings.** Any non-residential building over 50 feet wide shall be broken down to read as a series of buildings no wider than 50 feet each or 30 feet in the MU-R Zoning District. Increases in the maximum building width may be approved through design review if recesses, offsets, or other architectural articulation modulate a "box-like" appearance.
10. **Maximum Building Length and Length of Blank Walls.** The maximum building length is 100 feet. See Table 3. This limitation does not apply to buildings with unique design requirements, such as gyms and auditoriums. Increases in the maximum building length may be approved through design review if recesses, offsets, or other architectural articulation modulate a "box-like" appearance. The maximum length of blank walls is 10 feet on the ground floor and 25 feet on upper floors.

COMMERCIAL MIXED-USE REGULATIONS

TABLE 3: BUILDING FORM STANDARDS – MIXED-USE DISTRICTS



<i>District</i>	<i>MU-R</i>	<i>MU-CL</i>		<i>Additional Regulations</i>	<i>#</i>
Maximum Building Length (ft.)	100	100			
Maximum Length of Blank Wall (ft.)	10 for ground floor, 25 for upper floors	10 for ground floor, 25 for upper floors			1
Bay Window	Max. 3 feet from primary facade and min. 12 feet above				2
Awnings & Overhangs (ft.)	Max. 4 feet from primary facade and 8 feet above sidewalk grade above public ROW				3
Awning setback from Curb	Min. 4 feet clear				4

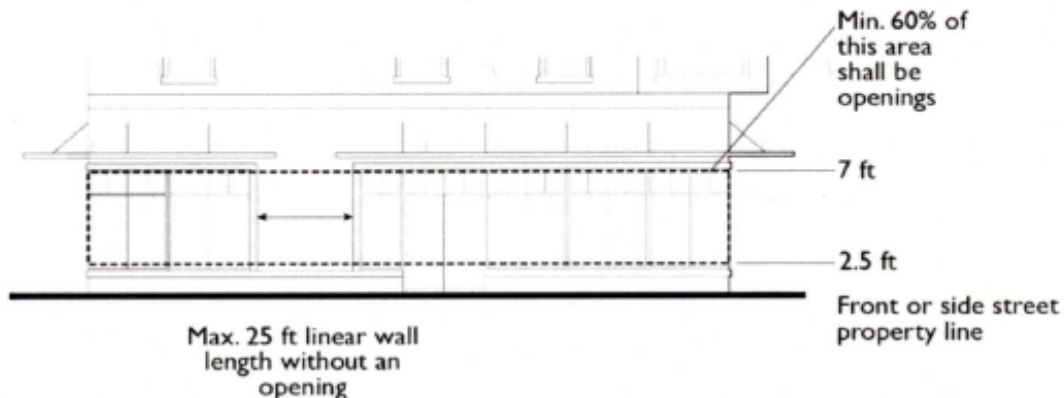
11. **Building Projections.** The maximum width of any projection, including bay windows, is 10 feet, and the total of all projections along a building face may not be more than 10 feet wide or 25 percent of the building frontage, whichever is greater.
12. **Building Orientation and Entrances.**
 - a. Buildings shall be oriented to face public streets or pedestrian-oriented areas.
 - b. Building frontages shall be generally parallel to streets, and the primary building entrances shall be located on or within 15 feet of a public sidewalk.
 - c. At least one entrance shall be provided per 100 linear feet of building frontage unless the building has unique security needs.
 - d. Entrances located at corners shall generally be oriented at a 45-degree angle to the corner and shall have a distinct architectural treatment to animate the

COMMERCIAL MIXED-USE REGULATIONS

intersection and facilitate pedestrian flow around the corner. Different treatments may include angled or rounded corners, arches, and other architectural elements.

- e. Entrances to residential units shall be physically separated from the entrance to the permitted commercial uses and clearly marked with a physical feature incorporated into the building or an appropriately scaled element applied to the facade.
13. **Building Transparency; Required Openings for Non-Residential Uses.** Exterior walls facing and within 15 feet of a front or street side property line shall include windows, glass doors, or other openings for at least 60 percent of the building wall area located between 2.5 and 7 feet above the level of the sidewalk (see Figure 1). No wall may run in a continuous plane for more than 25 feet without a window or other opening.

**FIGURE 1: REQUIRED OPENINGS FOR NON-RESIDENTIAL USES
IN MIXED USE DISTRICTS**



- a. Design of Required Openings. Openings fulfilling this requirement shall have transparent glazing and provide views into work areas, display areas, sales areas, lobbies, or similar active spaces, or into window displays that are at least two feet deep.
 - b. Exceptions for Parking Garages. Garages are not required to meet the building transparency requirement of this subsection. Instead, they must be screened with buffer landscaping.
 - c. Alternatives through Design Review. Alternatives to the building transparency requirement may be approved if the Planning Commission finds that:
 - i. The proposed use has unique operational characteristics with which providing the required windows and openings is incompatible, such as in the case of a cinema or theater; and
 - ii. Street-facing building walls will exhibit architectural relief and detail and will be enhanced with landscaping in such a way as to create visual interest at the pedestrian level.
14. **Building Design and Articulation.** Buildings shall provide adequate architectural articulation and detail to avoid a bulky and "box-like" appearance. Building design shall reflect and complement the architectural style of significant historic buildings

COMMERCIAL MIXED-USE REGULATIONS

within the city. This may be accomplished through the incorporation of architectural style, colors, and materials similar to those used for historic buildings in the City. The following standards apply to development projects in the Mixed-Use Districts:

- a. Massing. Building massing shall align with the street grid of adjacent blocks.
- b. Relation to Existing Buildings. Buildings shall be designed to appear integrated with existing buildings in the district.
- c. Vertical Relationship. Buildings shall be designed to have a distinctive base (ground floor level), middle (intermediate upper floor levels), and top (either top floor or roof level). Cornices, balconies, roof terraces, and other architectural elements should be used, as appropriate, to terminate rooflines and accentuate setbacks between stories.
- d. Windows.
 - i. Window frames shall be inset at least two inches from the face of the building to enhance shadow-line around opening.
 - ii. Snap-in vinyl mullions between double pane glass is prohibited. If a divided light appearance is desired, mullions must be made of dimensional material projecting in front of the panes on both the inside and outside of the window.
 - iii. Exceptions may be granted through the design review process to accommodate alternative window design complementary to the architectural style of the structure.
- e. **Exterior Building Materials and Colors.**
 - i. A unified palette of materials shall be used on all sides of buildings.
 - ii. Exterior building materials shall be stone, brick, stucco, architectural concrete block, painted wood clap-board, painted metal clapboard or other quality, durable materials approved through the design review process.
 - iii. A wainscoting of quality materials on the bottom of the ground floor facade is required.
 - iv. Colors shall be used to help delineate windows and other architectural features to increase architectural interest.
- f. **Building Details.**
 - i. Building facades shall include building projections or recesses, doorway and window trim, and other details that provide architectural articulation and design interest.
 - ii. All applied surface ornamentation or decorative detailing shall be consistent with the architectural style of the building.
 - iii. All balconies shall have a minimum horizontal dimension of two feet.
 - iv. Each side of the building that is visible from a public right-of-way shall be designed with a complementary level of detailing.

15. **Pedestrian Access.**

COMMERCIAL MIXED-USE REGULATIONS

- a. Internal Connections. A system of pedestrian walkways shall connect all buildings on a site to each other, to on-site automobile and bicycle parking areas, and to any on-site open space areas or pedestrian amenities.
 - b. To Circulation Network. Regular connections between on-site walkways and the public sidewalk and other pedestrian walkways within the project shall be provided. An on-site walkway shall connect the primary building entry or entries to a public sidewalk on each street frontage.
 - c. To Neighbors. Direct and convenient access shall be provided from commercial and mixed-use projects to adjoining residential and commercial areas to the maximum extent feasible, while still providing safety and security.
 - d. Interior Pedestrian Walkway Design.
 - i. Walkways shall have a minimum clear, unobstructed width of six feet, where feasible, but at least four feet, shall be hard-surfaced, and paved with concrete, stone, tile, brick, or comparable material.
 - ii. Where a required walkway crosses driveways, parking areas, or loading areas, it must be clearly identifiable through the use of a raised crosswalk, a different paving material, or similar method.
 - iii. Where a required walkway is parallel and adjacent to an auto travel lane, it must be raised or separated from the auto travel lane by a raised curb at least four inches high, bollards, or other physical barrier.
16. **Limitations on Location of Parking.** Parking may be located within 40 feet of the street facing property line in accordance with Table 4 and the following standards.
- a. Underground and Partially Submerged Parking. Parking completely or partially underground, may match the setbacks of the main structure. The maximum height of a parking podium visible from a street is five feet from finished grade.
 - i. Surface Parking. Above ground surface parking may be located within 40 feet of a street facing property line if the Decision-Making Body makes all of the following findings:
 - ii. Buildings are built close to the public sidewalk to the maximum extent feasible;
 - iii. The parking area is screened along the public right-of-way with a wall, hedge, trellis, and/or landscaping; and
 - iv. The site is small and constrained such that underground, partially submerged, or surface parking located more than 40 feet from the street frontage is not feasible.
17. **Residential Open Space.** Residential open space is required for any mixed-use development with dwelling units (see Table 5); it may be provided as common or private open space. Private areas consist of balconies, decks, patios, or fenced yards directly accessible from the residence. Common areas consist of landscaped areas, walks, patios, swimming pools, barbeque areas, playgrounds, turf, rooftop areas, or other such improvements as are appropriate to enhance the outdoor living environment of the development. Landscaped courtyard entries that are oriented towards the public street which create a welcoming entry feature are also

COMMERCIAL MIXED-USE REGULATIONS

considered common areas. All areas not improved with buildings, parking, vehicular accessways, trash enclosures, and similar items or devoted to perimeter landscaping shall be developed as common areas with the types of attributes described above.

TABLE 4: PARKING AND LOADING STANDARDS - MIXED-USE DISTRICTS

KEY — Property Line // Parking Area ... Loading Area						
<i>District</i>	<i>MU-R</i>	<i>MU-CL</i>			<i>Additional Regulations</i>	<i>#</i>
Setback from Street Property Line (ft)	40 ft; Buildings shall be placed as close to the street as possible, with parking underground, behind a building, or on the interior side or rear of the site.					1
Setback from Buildings and Public Plazas (ft)	5 ft walkway plus 3 ft landscaping; Applicable only to above ground parking.					2
Access Location	Side street or alley wherever possible					
Curb Cuts	Minimized and in area least likely to impede					
Loading/Service Area	Side or rear of lot; must be screened from public ROW					4

TABLE 5: LANDSCAPING AND OPEN SPACE STANDARDS - MIXED-USE DISTRICTS

<i>District</i>	<i>MR-R</i>	<i>MU-CL</i>		<i>Additional Regulations</i>
Minimum Residential Private Open Space (sq ft per unit)	65	75		

COMMERCIAL MIXED-USE REGULATIONS

Minimum Public Open Space	For residential and mixed-use development: 60 sq ft per unit; For non-residential development: 10% of site			
Minimum Amount of Landscaping (% of site)	10	15		

a. **Minimum Dimensions.**

- i. *Private Open Space.* Private open space located on the ground level (e.g., yards, decks, patios) shall have no horizontal dimension less than 10 feet. Private open space located above ground level (e.g., balconies) shall have no horizontal dimension less than six feet.
- ii. *Common Open Space.* Minimum horizontal dimension of 20 feet.

b. **Usability.** A surface shall be provided that allows convenient use for outdoor living and/or recreation. Such surface may be any practicable combination of lawn, garden, flagstone, wood planking, concrete, or other serviceable, dust-free surfacing. The maximum slope shall not exceed 10 percent.

c. **Accessibility.**

- i. *Private Open Space.* The space shall be accessible to only one living unit by a doorway to a habitable room or hallway.
- ii. *Common Open Space.* The space shall be accessible to all of the living units on the lot. It shall be served by any stairway or other accessway qualifying as an egress facility from a habitable room.

H. **Mixed Use Residential District.** The Mixed Use Residential (MU-R) district applies to frontages on arterial streets that are designated for a pedestrian orientation in the MU-R Overlay District. This designation is intended to unify and strengthen the corridors where it applies by establishing standards that will create active street fronts with widened sidewalks and improved pedestrian connections.

1. **Street Frontage Improvements.** New development subject to an MU-R Overlay District shall provide street frontage improvements in accordance with the following:

a. **Between the Property Line and Curb.**

- i. *Sidewalks.* Sidewalks that are six to ten feet wide shall be provided if none exist or if the existing sidewalks are in poor condition.
- ii. *Street Furniture.* Trash receptacles, benches, bike racks, and other street furniture shall be provided.
- iii. *Landscaping.* Street landscaping will meet Section 153.171 of the Zoning Ordinance and 152.05 of the Tree Ordinance of the City.

b. **Interior from Property Line.** Except where occupied by a building or necessary for parking access, the street frontage, for a depth of 10 feet from the property line, shall be utilized for pedestrian circulation or active outdoor uses, including, but not limited to outdoor dining; paved for public uses so that it functions as part of a wider public sidewalk; or improved with landscaping,

COMMERCIAL MIXED-USE REGULATIONS

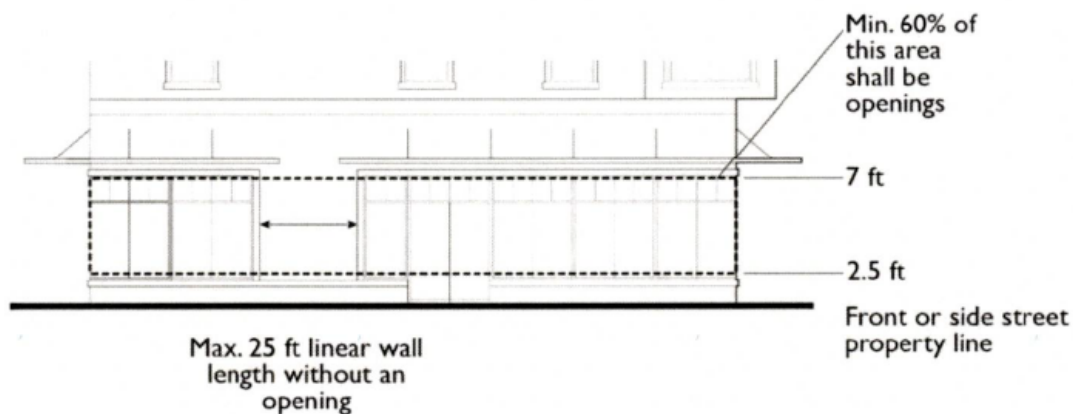
public art, and/or pedestrian amenities, such as outdoor seating.

2. Building Orientation and Entrances.

- a. Buildings shall be oriented to face public streets.
- b. Building frontages shall be generally parallel to streets, and the primary building entrances shall be located on or within 20 feet of a public sidewalk.
- c. At least one entrance shall be provided per 100 linear feet of building frontage unless the building has unique security needs.
- d. Entrances located at corners shall generally be oriented at a 45-degree angle to the corner and shall have a distinct architectural treatment to animate the intersection and facilitate pedestrian flow around the corner. Different treatments may include angled or rounded corners, arches, and other architectural elements.
- e. Entrances to residential units shall be physically separated from the entrance to the permitted commercial uses and clearly marked with a physical feature incorporated into the building or an appropriately scaled element applied to the facade.

3. **Building Transparency; Required Openings for Non-Residential Uses.** Exterior walls facing and within 20 feet of a front or street side property line shall include windows, glass doors, or other openings for at least 60 percent of the building wall area located between 2.5 and seven feet above the level of the sidewalk. No wall may run in a continuous plane for more than 25 feet without a window or other opening.

FIGURE 2: REQUIRED OPENINGS FOR NON-RESIDENTIAL USES IN A MIXED USE RESIDENTIAL OVERLAY DISTRICT



- a. Design of Required Openings. Openings fulfilling this requirement shall have transparent glazing and provide views into work areas, display areas, sales areas, lobbies, or similar active spaces, or into window displays that are at least three feet deep.
- b. Exceptions for Parking Garages. First floor garages are not required to meet the building transparency requirement of this subsection. Instead, they must

COMMERCIAL MIXED-USE REGULATIONS

be screened with buffer landscaping.

- c. Alternatives through Design Review. Alternatives to the building transparency requirement may be approved through the design review process if the Planning Commission makes all of the following findings:
 - i. The proposed use has unique operational characteristics with which providing the required windows and openings is incompatible, such as in the case of a cinema or theater; and
 - ii. Street-facing building walls will exhibit architectural relief and detail and will be enhanced with landscaping in such a way as to create visual interest at the pedestrian level.

4. **Pedestrian Access.**

- a. Internal Connections. A system of pedestrian walkways shall connect all buildings on a site to each other, to on-site automobile and bicycle parking areas, and to any on-site open space areas or pedestrian amenities.
- b. To Circulation Network. Regular connections between on-site walkways and the public sidewalk and other planned or existing pedestrian routes and trails shall be provided. An on-site walkway shall connect the primary building entry or entries to a public sidewalk on each street frontage.
- c. To Neighbors. Direct and convenient access shall be provided from commercial and mixed-use projects to adjoining residential and commercial areas to the maximum extent feasible, while still providing safety and security.
- d. To Transit. Safe and convenient pedestrian connections shall be provided from transit stops to building entrances.

Interior Pedestrian Walkway Design.

- i. Walkways shall have a minimum clear, unobstructed width of six feet, where feasible, but at least four feet, shall be hard-surfaced, and paved with concrete, stone, tile, brick, or comparable material.
- ii. Where a required walkway crosses driveways, parking areas, or loading areas, it must be clearly identifiable through the use of a raised crosswalk, a different paving material, or similar method.
- iii. Where a required walkway is parallel and adjacent to an auto travel lane, it must be raised or separated from the auto travel lane by a raised curb at least four inches high, bollards, or another physical barrier.

I. **Permit Application Review Process.**

- 1. **Process for Review of Permit Applications.** Each Permit Application shall be subject to the review procedure set forth below.
 - a. Preliminary Determination of Commercial Mixed-Use Standards Consistency. Under Step 1 of this Permit Application review process, the Director shall make a preliminary determination regarding whether the Project described in the Permit Application is consistent with the Commercial Mixed-Use Standards by determining whether the Project (i) is permitted under the applicable Zoning Ordinance Land Use Designation, and (ii) considering all its aspects, will further the goals, objectives and policies of the Commercial

COMMERCIAL MIXED-USE REGULATIONS

Mixed-Use Standards and not obstruct their attainment.

- b. If the Director determines that the Project described in the Permit Application is not consistent with the Commercial Mixed-Use Standards, the Permit Application shall not be further reviewed or processed until the applicant revises the Project to be consistent with the Commercial Mixed-Use Standards and/or files an application for a Zoning Variance. If the Director determines that the Project described in the Permit Application is consistent with the Commercial Mixed-Use Standards, the Permit Application shall continue. The Permit Application shall be reviewed and processed in accordance with the applicable development standards of the Existing Zoning District, including whether the proposed use is permitted by right, conditionally permitted, or not allowed.
- c. The Permit Application shall then be reviewed and processed in accordance with all of the applicable land use regulations set forth in the City of Charlevoix Zoning Ordinance.
- d. Appeal of Step 1 Preliminary Determinations. Upon completion of this Step 1, the Director shall issue to the applicant written notice of its Step 1 determinations (the "Preliminary Determinations Notice"). Not later than ten (10) days following the issuance of the Preliminary Determinations Notice, the applicant may file a single appeal to any or all of the Step 1 determinations set forth in the Preliminary Determinations Notice in accordance with the appeal procedures set forth in Section 153.240 of the Zoning Ordinance. Any appeal by the applicant must address all of the Step 1 determinations set forth in the Preliminary Determinations Notice, and failure to address any Step 1 determination in an applicant's appeal will result in the applicant's waiver of its right to appeal such determination. No appeal of a Step 1 determination may be made by an applicant unless and until the Director has issued the Preliminary Determinations Notice.

If no appeal is filed within ten (10) days of the issuance of the Preliminary Determination Notice, the Permit Application will proceed to the Decision-Making Body for review and action on the Permit Application.

- e. Step 2: Final Review and Action by the Planning Commission; Required Findings to Support Approval of Permit Application. Upon completion of Step 1 above, including the completion of any appeal from a Preliminary Determinations Notice, the Permit Application shall be reviewed and processed in accordance with all of the applicable land use and development standards of the applicable Zoning District as determined in Step 1. and acted upon by the Planning Commission. During the effective period of this Ordinance, no Permit Application may be approved unless and until the Planning Commission makes each and all of the following findings regarding the Project described in the Permit Application, in addition to any other findings required by the applicable provisions of the Zoning Ordinance and this Ordinance:
 - i. The Project will further the goals, objectives and policies of the Commercial Mixed-Use Standards and not obstruct their attainment; and
 - ii. The Project substantially conforms to the Zoning Ordinance requirements of the applicable Zoning District.

COMMERCIAL MIXED-USE REGULATIONS

2. **Appeal of Action by Decision-Making Body on Permit Application.** Any action on a Permit Application by the Decision-Making Body pursuant to this Ordinance may be appealed in accordance with the procedures set forth in Section 153.240 of the Zoning Ordinance.
3. **Generally Applicable Laws.** Nothing in this Ordinance shall be interpreted as exempting Permit Applications or development proposals from compliance with generally applicable state or local laws or regulations. Nothing in this Ordinance shall be construed to limit the rights of a property owner to apply to the City for a zoning amendment or general plan amendment pursuant to the procedures set forth in the Zoning Ordinance.

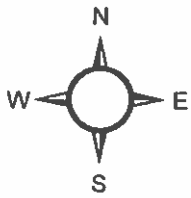
SECTION 2 SEVERABILITY.

If any section, sub-section, subdivision, paragraph, sentence, clause or phrase of this Ordinance, or any part thereof, is for any reason held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections or portions of this Ordinance or any part thereof. The City Council hereby declares that it would have passed each section, sub-section, subdivision, paragraph, sentence, clause or phrase of this Ordinance, irrespective of the fact that any one or more sections, sub-sections, subdivisions, paragraphs, sentences, clauses or phrases may be declared invalid or unconstitutional.



Map 7.1
Future Land Use Map

- | | | |
|---------------|-------------------------|--------------------------|
| Parcels | FLU Designation | Neighborhood Residential |
| City Boundary | Downtown Core | Private Club Residential |
| Roads | Charlevoix Corridor | Industrial |
| Highways | City Center Residential | Public Facilities |
| Water Bodies | Community Mixed Use | Scenic Reserve |
- MU-CL overlay District
- MU-R overlay District



0 0.25 0.5
Miles





To: The City of Charlevoix Planning Commission
From: Jonathan Scheel, Zoning Administrator
Subject: Zoning Administrator's Report re: thru February 2024

Permits Issued in 2023

Following are two types of breakdowns for the 91 permits issued by the zoning office so far in 2023:

<u>By month</u>	<u>By type</u>
January7	Banner permits5
February5	Fence permits2
March	Sidewalk café/use1
April	Sign
May.....	Zoning.....3
June.....	Use.....1
July.....	
August	
September.....	
October.....	
November.....	
December	

The fence, sign & zoning permits break down into the following zoning districts:

Central Business District (CBD).....2
Commercial Mixed (CM).....1
General Commercial (GC)
Industrial
Marine Commercial (MC)
Residential Private Club (PC)
Public Facilities
R-12
R-22

Level A Site Plan Administrative Review

None

Level B Site Plan Reviews / Special Use Permits

None

Variances to Zoning Board of Appeals

None

Other activities

I visited Crooked River Circle, a beautifully wooded neighborhood bordering the bike trail just West of US 31 in Brutus

The full project will soon become dotted with 36 new long-term rental homes. The efforts of Emmet County's **Planning Commission** to create opportunities for more effective land use and housing choice directly affected the potential of this community.

Thanks to these changes and with a strong mission to build high-quality, well-designed homes for our full-time residents, developers Douglas Shaw and Kevin Crute saw a way to build **36 units where only 12** would have been previously allowed. A Duplex and an Accessory Dwelling Unit on each parcel will accommodate a variety of housing choices; 24 will be 2–3-bedroom units and 12 will be single-bedroom cottages. Shaw and Crute note that “It is very important to utilize materials and technologies that are extremely efficient both for residents and the environment. Flexible layouts as well as lower utilities and maintenance costs will allow our community members to remain in their homes as their needs may change over time.” Rents will be targeted to 120% of Emmet County Area Median Income as set by HUD.

What are the attributes of the following buildings?

What attributes meet our new proposed ordinance language, if any?

Enhance existing pedestrian friendly streets?

Pedestrian connections between commercial and residential?

Social and economic centers for neighborhoods and the community?

Multi modal transit orientated?

Inviting to pedestrian traffic and visible from the street?

Parking at the rear or side?

Do they reflect the historic and traditional design elements that fit in the neighborhood?

Do they add any vibrancy to the neighborhood?

Do they include housing?















