Village of Lincolnwood
Plan Commission

Meeting
Wednesday, June 5, 2019
7:00 P.M.
in the
Council Chambers Room
Lincolnwood Village Hall - 6900 North Lincoln Avenue

Agenda

1. Call to Order/Roll Call

2. Pledge of Allegiance

3. Approval of Minutes
   May 1, 2019 Meeting Minutes

   Request: Consideration of a Village Board Referral of Zoning Code Text Amendments proposed to modify the permissibility and requirements for certain signage including: 1) permitting Electronic Message Signs, with specific regulations, for properties and/or developments deemed to be “large-scale”; 2) amending existing regulations related to Temporary Signs for Special Events and Grand Openings; 3) permitting Temporary Sign Coverings/Panels on Freestanding Signs; 4) amending required setbacks for Temporary and Permanent Freestanding Signs; and 5) amending existing regulations related to specific design limitations for Portable Signs.

5. Next Meeting: Wednesday July 2, 2019

6. Public Comment

7. Adjournment

POSTED: May 31, 2019
MEMBERS PRESENT:
Chairman Mark Yohanna
Sue Auerbach (arrived after Pledge of Allegiance)
Steve Jakubowski
Adi Kohn
Henry Novoselsky
Anthony Pauletto
Don Sampen

MEMBERS ABSENT:

STAFF PRESENT:
Doug Hammel, Community Development Manager
Kathryn Kasprzyk, Community Development Coordinator

I. Call to Order
Chairman Yohanna noted a quorum of six members and called the meeting to order at 7:03 p.m.

II. Pledge of Allegiance

III. Approval of Minutes
Motion to recommend approval of the April 4, 2019 Plan Commission Meeting Minutes was made by Commissioner Pauletto and seconded by Commissioner Novoselsky.

Aye: Pauletto, Novoselsky, Kohn, Sampen, and Yohanna
Nay: None
Abstained: Jakubowski
Motion Approved: 5-0

Development Manager Hammel announced Case #PC-06-18 was inadvertently included on tonight’s agenda. As this Case was previously continued to the June 5, 2019 Plan Commission meeting, no discussion will take place.
IV. Case #PC-01-19: 7373 North Cicero Avenue and 7384 North Lincoln Avenue – Final Plat of Subdivision and Subdivision Variations

Chairman Yohanna announced Case #PC-01-19 for consideration of a request by Puig Holding Company and Heartland Arena, LLC, property owners of 7373 North Cicero Avenue and 7384 North Lincoln Avenue, respectively, to approve a Subdivision of 7373 North Cicero Avenue and a Consolidation of lots for 7384 North Lincoln Avenue, including the following approvals: 1) Variation from Section 16-5-2(B) related to lot shape (applicable to both properties); 2) Variation from Section 16-5-2(D) to allow the consolidation of more than two lots for 7384 North Lincoln Avenue; and 3) Variation from Section 16-5-2(E)(2) to allow 7384 North Lincoln Avenue to have access to a street solely through another lot by means of an easement. Chairman Yohanna swore in the Petitioner’s representative, Mr. Dan Lauer.

Development Manager Hammel reviewed the required approvals which include Final Plat review and Subdivision Variations pertaining to the shape of the resultant lots, consolidation of more than two lots, and street access.

A portion of the property at 7373 North Cicero Avenue was conveyed to the Heartland Ice Arena to preserve long-term parking. The Heartland Ice Arena is prepared to enter into an easement agreement with Zeigler, as the prospective purchaser of 7373 North Cicero Avenue, to allow vehicular access through the auto dealership property to Cicero Avenue for the purpose of accessing the Ice Arena’s parking area. Any conveyance of a parcel requires Subdivision and Consolidation approval, and Zeigler cannot develop the property until these approvals are fully recorded. This agreement is only terminable with the approval of both parties. Staff recommends recording the Final Plat not occur until the easement agreement is fully executed and recorded and the demolition of the existing structure at 7373 North Cicero Avenue. Revisions to the Plat will also require approval by the Village Engineer before Village Board consideration.

Chairman Yohanna asked if there was anyone from the audience who would like to address the Plan Commission. Let the record state that no one came forward. With no further discussion, Chairman Yohanna requested a motion.

Motion to recommend approval of the Subdivision of 7373 North Cicero Avenue and a Consolidation of lots for 7384 North Lincoln Avenue to include: 1) a Variation from Section 16-5-2(B) related to lot shape; 2) a Variation from Section 16-5-2(D) to allow the consolidation of more than two lots at 7384 North Lincoln Avenue; and 3) a Variation from Section 16-5-2(E)(2) to allow 7384 North Lincoln Avenue to have access to a street solely through another lot by means of an easement in addition to the conditions recommended by Staff that the Easement Agreement must be executed and recorded before recordation of the Plat, demolition of the existing structure at 7373 North Cicero Avenue must be completed before recordation of the Plat, and revisions must be made to the Plat to the satisfaction of the Village Engineer before the Village Board consideration was made by Commissioner Sampen and seconded by Commissioner Novoselsky. Case #PC-01-19 will tentatively be heard at the May 21, 2019 meeting of the Village Board.
VI. Next Meeting

The next meeting of the Plan Commission is scheduled for Wednesday, June 5, 2019.

VII. Public Comment

Chairman Yohanna asked if there was anyone from the audience who would like to address the Plan Commission. Let the record state that no one came forward. With no further discussion, Chairman Yohanna requested a motion to adjourn.

VIII. Adjournment

Motion to recommend adjournment was made by Commissioner Pauletto and seconded by Commissioner Sampen. Meeting adjourned at 7:30 p.m.

Aye: Pauletto, Sampen, Auerbach, Jakubowski, Kohn, Novoselsky, and Yohanna
Nay: None
Motion Approved: 7-0

Respectfully submitted,

Kathryn Kasprzyk
Community Development Coordinator
Subject: Consideration of a Text Amendment to Modify the Permissibility of Electronic Signs

Requested Action: Text Amendment to Article XI, Signs, of the Village Zoning Code to modify the permissibility of Electronic Signs

Petitioner: Village Board

Summary:
In early 2018, the Village Board referred to the Plan Commission a series of proposed Sign Code Amendments for consideration, in order to reduce unnecessary restrictions and provide more business-friendly regulations. The goal of these Amendments is to: 1) provide appropriate flexibility for commercial signage, especially for larger properties that require a certain level of visibility; and 2) reasonably expand opportunities for commercial businesses to promote their products and services. The Plan Commission began a Workshop to discuss these proposed Amendments at the March 7, 2018 meeting, at which time the topics to be considered were introduced. At the June 6, 2018 meeting, the Plan Commission determined that it was prudent to continue the review of all proposed Sign Code Amendments, with the exception of those related to electronic signs for large-scale developments, review of which was to be tabled until a recommendation had been made on the other proposed Amendments. The Plan Commission concluded those discussions and made a recommendation at the March 6, 2019 meeting, providing the opportunity to return to discussion and consideration of certain electronic signs.

Electronic Signs for Large-Scale Developments
Section 11.06 of the Zoning Code (see Attachment #1) specifically prohibits “electronic message signs” and “animated signs”. Staff understands that these prohibitions were likely enacted specifically with an older style of digital sign (designed with individual light bulbs programmed to form a message) in mind. These signs were prevalent in the 1970s, 1980s, and 1990s throughout the country in the form of time/temperature signs and single-color scrolling message signs. Over time, Electronic Message Center (EMC) signs have become popular replacements for the individual letter (non-electronic) message boards (aka “Static Reader Boards”) that have been found at larger retail outlets, fast food restaurants, and strip retail shopping centers for decades, since they are cleaner, more dynamic/visible, and easier to change instantly. As the Plan Commission is aware, the technology behind EMCS has grown exponentially in the past ten years to the point that many of these signs are of the same quality as the high-definition video boards that can be found at major stadiums. Given the overall aesthetic improvement in these types of signs in recent years, and prevalence of this type of messaging in today’s commercial environment, staff believes it appropriate to consider permitting EMCS, with certain conditions.
Survey of Surrounding Communities:
At the initial March 7, 2018 Workshop regarding the proposed Sign Code Amendments, the Plan Commission directed staff to conduct a survey of related regulations in our comparison communities. Staff has since received responses from five of those eight communities (Des Plaines, Glenview, Skokie, Niles, and Wilmette). Given the lower response rate, we also added Lincolnshire to the list, for a total of six communities. The six comparison communities are mixed on their permissibility of EMCs. Four of the six communities allow such signs in some form, with some limitations on zoning district (all allow commercial, one allows residential), setbacks from residential properties (0 - 250’), illumination levels (vary) and size (ranging from 25-50% of the total sign area). Wilmette prohibits all such signs.

Issues to be Addressed:
Following, is a list of issues that should be addressed should the Plan Commission wish to consider permitting EMCs:

1. **Definition** – The simplest definition found in staff’s research is as follows: “Electronic Message Center – A sign capable of displaying words, symbols, figures, or images that can be electronically or mechanically changed by remote or automatic means.” Any additions or subtractions from this draft definition should be discussed at Wednesday’s meeting;

2. **Permissible Locations** – The locations that EMCs may be permitted can be regulated by zoning district, the physical attributes of the lot (lot size, single vs. multi-tenant commercial properties), and the proximity to sensitive uses (i.e., residential uses). An appropriate setback from a residential property line should be strongly considered;

   Staff previously suggested that these uses may be most suitable on larger properties (seven acres or greater in size), which tend to be properties with unique physical characteristics or needs. The properties in the Village that would meet these requirements include: Town Center Mall, District 1860, School District 74 campus, Lowe’s, Loeber Motors “campus” and Bryn Mawr Country Club. The Town Center Warehouse and Trim-Tex, at 3700 West Pratt Avenue, also exceed seven acres in size but are industrial in nature and less likely to require messaging as a core part of their business;

3. **Sign Types** – EMCs are typically used as part of a monument or pole sign, rather than a wall sign. In the Village, a pole sign is referred to as a “Special Sign”, which requires a special approval. Given that monument signs are the most prevalent sign type incorporating EMCs and that the Village generally discourages pole signs (exhibited by the fact that a Variation is required for such a “Special Sign”), as they often don’t meet the aesthetic standards set for free-standing signs, staff recommends that permissibility be concentrated in monument signs;

4. **Sign Sizes** – This relates to size parameters (both the area and height above grade), as well as the overall percentage of sign area that can be devoted to EMCs versus the identification portion of the sign. Staff would recommend that monument signs containing EMCs be permitted to exceed the typical height and area of a standard monument sign, due to the necessity to make it visible so that it not only serves commercial purposes, but also meets the correct proportions to be viewable without causing safety concerns to the driving public;
5. **Approval Process** – Should such signs be permitted if certain parameters are met or should they be Special Uses, requiring a public review process, similar to the review process a pole sign must undertake? Staff believes that the aesthetic issues associated with a sign incorporating EMCs are at least as important to review as a pole sign and would recommend these be permitted only as a Special Use or as a “Special Sign” (which requires a Variation);

6. **Brightness** – This is the most common concern that municipalities have when regulating EMCs. While previous discussion with the Plan Commission was with regard to measuring brightness in “nits” (the amount of light output equal to one candela per square meter), staff has found through additional research that there are other ways to measure brightness, including by footcandles. Staff finds benefits to measuring in footcandles, including the fact that this is a more common measurement in the industry. In addition, the cost of a light meter to measure nits is ten times more expensive than one measuring footcandles. Research from around the country shows that many municipalities have determined that EMCs should have an automatic dimmer that requires them to dim when it gets dark to an illumination level that is 0.3 footcandles above ambient light;

7. **Movement** – This is the second most common concern that municipalities have when regulating EMCs. There are two parts to this discussion: 1) should animation be allowed; and 2) what is the amount of time a static image must remain before it transitions to another image? The transition from one image to another must be regulated to ensure that an EMC doesn’t become a “flashing sign”, which is prohibited in the Village Sign Regulations, as is the case in the vast majority of communications. Flashing signs can become dangerous by diverting a driver’s attention. Community ordinances regulating transition time range from 3 seconds to 24 hours. However, the typical static slide transition times are from 5-10 seconds (with Skokie as the outlier at 20 seconds), with 5 seconds being prevalent and supported by the sign industry (based on their own testing); and

8. **Hours of operation** – Communities differ on whether or not they permit EMC signs to remain illuminated 24 hours a day versus permitting them only when the business is open, which is the standard for Lincolnwood as it relates to all other illuminated signs. Staff is not aware of a reasonable argument to allow EMCs to be illuminated for hours that expand beyond what is permitted for any other illuminated sign.

![Examples of Electronic Message Center Signs for Private and Public Uses](image-url)
Staff Recommendation
The purpose of Wednesday night’s discussion is to re-introduce the idea of EMCs and discuss the areas of regulation that should be considered, with some direction for staff follow-up. Feedback from the Plan Commission will help focus staff’s continued research, and, ultimately, lead to the preparation of draft code language, with the assistance of the Village Attorney.

Staff will also work, in the coming weeks toward compiling a list and photos of existing EMCs in the area for use in order to hone in on acceptable parameters for regulation.

Documents Attached
1. Pertinent Existing Village Code Section
2. International Sign Association PowerPoint – Brightness of EMCs
11.06 Prohibited signs.
The following sign types are specifically prohibited in all locations within the Village:

(1) [Reserved]
Editor's Note: Former Subsection (1), which prohibited A-frame, sandwich board and other portable signs, was repealed 10-1-2013 by Ord. No. 2013-3071.

(2) Abandoned signs.
(3) Advertising vehicles.
(4) Off-premises advertising signs, except:
[Ord. No. 2011-2937]

(5) Animated signs.
(6) Bench signs.
(7) Billboards.

(8) Flashing signs.
(9) Light pole signs.
(10) Painted wall signs.
(11) Portable signs, except special event signs.
(12) Projecting signs.
(14) Signs consisting of a string, cluster or series of lights, with the exception of holiday decorations.
(15) Signs on exterior doors, except: (a) signs displaying door operating instructions; (b) government required signs; and (c) signs displaying hours of operation.
(16) Roof signs.
(17) Inflatable signs.

(18) Electronic message signs.

(19) Any other sign that is not expressly permitted by this article.
Night-time Brightness Level Recommendations for On-Premise Electronic Message Centers

Updated August 2016
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>2</td>
</tr>
<tr>
<td>CASE STUDIES</td>
<td>4-6</td>
</tr>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>7</td>
</tr>
<tr>
<td>RECOMMENDED LANGUAGE</td>
<td>8</td>
</tr>
<tr>
<td>SIX STEPS: EMC BRIGHTNESS LEVELS</td>
<td></td>
</tr>
<tr>
<td>WITH OPERATIONAL CONTROL</td>
<td>9</td>
</tr>
<tr>
<td>WITHOUT OPERATIONAL CONTROL</td>
<td>11</td>
</tr>
</tbody>
</table>

## LEARN MORE ABOUT EMCS

The International Sign Association offers an Electronic Message Center (EMC) Resource Center, with resources on:

- EMCs and traffic safety
- A framework for developing EMC sign code language
- The differences between EMCs and digital billboards

www.signs.org/local

## ADDITIONAL SIGN CODE RESOURCES

The International Sign Association has developed numerous tools to help communities develop better sign codes. All are housed at www.signs.org/local, including:

- The Supreme Court ruling, *Reed v. Town of Gilbert*
- Model sign codes
- Best practices in regulating temporary and wayfinding signs
- The Economic Impact of On-Premise Signs

ISA’s advocacy team is available to provide complimentary assistance on sign codes and sign-related issues.

Contact SignHelp@signs.org or 703.836.4012.
INTRODUCTION

ELECTRONIC MESSAGE CENTERS (EMCs)

Electronic message centers, or EMCs, continue to grow in popularity for business and community use. You may have heard EMCs being referred to as changeable message displays or digital signs.

EMCs are not digital billboards, which advertise a good or service that is located away from the sign. Rather, EMCs are digital signs that are located on the premises, and that advertise goods and services that are available at the location.

There is often confusion regarding on- and off-premise digital signs. However, EMCs and digital billboards have very distinct capabilities and purposes, each targets a specific audience and each has traditionally been treated under separate legal and regulatory regimes, a zoning practice which was noted in the 2015 U.S. Supreme Court ruling in Reed v. the Town of Gilbert. For the purposes of this publication, we are focusing solely and exclusively on EMCs.

EMCs that are too bright at night can be offensive and ineffective. Night-time EMC brightness is an issue where sign users, the sign industry, and local offices have a common goal: ensuring that EMCs are appropriately legible. We know the messages that these signs convey can be rendered unattractive and perhaps even unreadable if they are programmed too bright.

That’s why many sign companies recommend to their customers that in order for these signs to be most effective, their brightness be set at such a level to be visible, readable and conspicuous.
The International Sign Association (ISA) retained noted lighting expert Dr. Ian Lewin of Lighting Sciences to help the industry develop scientifically-researched, understandable recommendations for EMC brightness. Dr. Lewin was a past chair of the Illuminating Engineering Society of North America (IES), and was greatly respected within the lighting field. His work for ISA was conducted with the input of experts within the sign industry.

As a result of his research, Dr. Lewin recommended two different brightness settings based on whether the EMC was located in an area of high or low ambient light. After field testing and utilizing Dr. Lewin’s recommendations, it was determined that using the more conservative recommendation is appropriate in areas of both low and high ambient light. In order to simplify Dr. Lewin’s recommendations, and to take a more reasonable approach to ensure that EMCs are sufficiently visible but not overly bright, it is recommended that EMCs not exceed 0.3 footcandles over ambient lighting conditions when measured at the recommended distance, based on the EMC size.

The research and the recommendations contained in this report pertain only to EMCs, not traditionally internally illuminated signs, such as these channel letter and neon signs below. EMCs use a different lighting technology than most of these types of signs, and as such the scientific approach differs.

Community leaders should understand that, while it is recommended that brightness measurements be taken perpendicular to the sign, sign viewers rarely see the sign at that same perpendicular approach. At any viewing point away from or off the forward angle, the apparent brightness will be reduced. In other words, the measurements will capture the recommended brightness levels, but, unless viewers are looking at the sign directly perpendicular, they will not perceive the brightness at the full level.

We have provided recommended statutory language and tips to measure brightness with and without control of the EMC. If you need further assistance, feel free to contact ISA, signhelp@signs.org or at (703) 836-4012 to answer any of your EMC questions.

FOOTCANDLES VS. NITS: WHICH MEASUREMENT IS BETTER?

This document recommends communities adopt illumination measurements in footcandles as compared to nits. Here are a few reasons why more than 200 localities and many state departments of transportation have adopted the footcandle measurement for EMCs:

**FOOTCANDLES**
- Measures illuminance
- Accounts for ambient light conditions
- Luxmeter measuring device $100
- “Twilight” measurement possible
- Measures light impact and appearance
- Works with roadway lighting standards
- Easier to check and enforce

**NITS**
- Measures luminance
- Measures only the amount of brightness emitted
- Luminance spectrometer (nit gun) - $1,000
- Does not allow adjustment based on ambient light
- Does not measure appearance
- Difficult to measure accurately
- Difficult to enforce

*While the main advantage of using nits as compared to footcandles is that daytime measurement is possible, EMC brightness is typically more of an issue at night.*
CASE STUDY: Columbus, Ohio

COMMUNITY .. Columbus, Ohio
POPULATION .. 836,000
LOCATION .. As Ohio’s largest city and state capital, Columbus is the country’s 15th largest city.
SPECIFIC EMC ISSUE .. Crafting a reasonable, enforceable code that addresses complaints while preserving the ability for businesses to use what it termed automatic changeable copy signs.

As automatic changing copy signs—as Columbus refers to EMCs—grew in use, so did community complaints.

By 2011, city planners began to edit the graphics codes to limit special effects. The goal was to continue to allow for a variety of commercial graphics, “but not at the expense of neighborhoods,” said Lisa Russell, the city’s Planner II who facilitated the code development project.

The city had in place certain limits on automatic changing copy signs, aka EMCs, in the graphics code, limiting their use to commercial and manufacturing zoning districts and requiring that only half of the sign could be used for the changeable copy. But signs lacked brightness limits and a hold time.

Russell led a team to draft the new code, which incorporated a brightness limit for both on-premise and off-premise signs. The testing method also is included in the code.

It was the result of much scientific discussion. “I believe that the best answer is revealed if you have enough information,” Russell said. The committee included a community group leader who was an architect specializing in lighting and representatives from the sign and graphics industry.

“When we started exploring brightness, it appeared the footcandle method was the way to go,” Russell said. “However, some group members wanted us to explore the luminance method. ISA believed so strongly that the luminance method was problematic that they brought a demonstration to us.”

The demonstration included a field trip to visit a sign to show the impact of the two measurement methods. “They wanted to make sure that we didn’t go down the wrong path. They rented a lift and showed us that with the luminance method you’d have to get up in the lift, raise it and shine the nit gun at the sign. With the footcandle meter, you can stand on the ground.”

Russell helped the group to see that the “members of the professional sign and graphics industry are not the same as end-users of signs, such as an owner of a carryout who wants to draw attention to his shop over others. We all had an interest in developing reasonable regulations instead of just banning these signs. We also did not want to take away the rights that businesses had to display electronic signs.”

The new code has significantly lessened complaints about sign brightness. And when a complaint is received, the code enforcement officers have a verifiable process for determining whether the sign complies with the code.
CASE STUDY: Kitsap County, Washington

COMMUNITY ............. Kitsap County, Washington
POPULATION ............. 260,000
LOCATION ............ Across the Puget Sound from Seattle and bordered by rural communities on the west. It is the third most densely populated county in the state.
SPECIFIC EMC ISSUE ...... Existing codes did not cover electronic signs.

As a “transition” county between rural Washington and the metropolitan city of Seattle, Kitsap County had the challenges of creating regulations for electronic signs that fit the county’s dual personalities.

“The first step was to identify where these signs would be allowed,” said Darren Gurnee, a planner with the county. “We wanted to make sure these were restricted to areas of increased density and primarily non-residential use such as industrial zones and commercial zones within the urban growth area.”

Previously, the county had allowed electronic signs “as a matter of interpretation,” Gurnee said. Crafting more defined electronic sign regulations would provide a measure of stability—and help business owners know what was allowed and where. An added bonus: Gurnee felt the signs would be more attractive than the block letters signs that had to be changed manually.

While the county wanted to make it easier for businesses to convert existing static monument signs into electronic signs, it also wanted to ensure that the regulations were not written in a way that would allow billboards to convert.

“We were able to craft our regulations in a way that required signs be brought into conformance before any change could be made,” Gurnee said. “Billboards were non-conforming, so that would not be an issue.”

ISA provided Gurnee with industry standards—contained in this publication—and some background on the technology that today’s electronic signs offer, such as automatic dimming. It also incorporated some of the recommended language on animation, hold times and transitions.

“The regulation is written in a way that it would be easy to enforce,” Gurnee said, and easy to understand, without the ambiguities contained in the previous method. The ending code created a perfect fit for both of the community’s personalities.
CASE STUDY: SPARKS, NEVADA

COMMUNITY .......... Sparks, Nevada
POPULATION .......... 93,500
LOCATION ............. A rapidly growing community, Sparks is located near Lake Tahoe, California, and Reno, Nevada, and is Nevada’s fifth largest city.
SPECIFIC EMC ISSUE ...... Existing regulations were difficult to enforce and outdated.

Sparks, Nevada had existing regulations of electronic message centers—or electronic variable signs as the community deemed them. But “it wasn’t very explicit,” said senior planner Karen Melby. “The brightness standards were in lumens, which we didn’t even know how to measure.”

The regulations were outdated as well—having been drafted in 2002. Technology had changed dramatically and the costs of EMCs had dropped, putting them in the range of more businesses’ budgets. “We felt we could see more coming and felt that we needed to get a handle on it.”

As a first step, planners required that those seeking an EMC permit meet their standards before approval was granted, but nothing was written into the code. That method can create problems.

So Melby led the city through the code revision process. She sought out industry expertise from both the planning community and the sign and graphics industry. For industry insight, she turned to ISA. ISA provided feedback on how other communities were regulating electronic message centers, and recommendations on what was working for these communities.

One outside group felt strongly that the standards should be regulated in nits, not footcandles. They brought in an expert who opposed the proposed regulations. But Melby held strong on the issue of footcandles. “In my research, it seems like footcandle is what you can see with your eyes while a nit is pinpointing a spot on a sign. When you look at a sign, you’re looking at the whole thing, not just one small spot.”

The city adopted the widely recognized standard of 0.3 footcandles above ambient light, using the distance measurements outlined in this publication. Melby took that table, determined the formula and wrote the formula into the code.

The community allows smaller signs—those under 32 square feet—to include scrolling, while those larger do not.

The result has been a city that has successfully navigated the balance between business interests and community aesthetics. “We’ve had very few complaints,” Melby said. “When we do get a complaint about a sign being too bright, we go out and measure it. When they bring it down to standards, we don’t get complaints.”

Being able to use a simple light meter to measure brightness is far easier than simply guessing whether the sign is in compliance, Melby said. “The other method (measuring nits) was really based on opinion. What may seem bright to me may not seem bright to you. Now, we can say, ‘This is what the meter says.’”

By having clear standards that are easier to enforce, both community and business win.
EXECUTIVE SUMMARY

ISA ELECTRONIC MESSAGE CENTER NIGHT-TIME BRIGHTNESS RECOMMENDATIONS

This summary has been developed with an understanding that EMCs that are unreasonably bright are not effective for the communities or end users. This intends to help communities and stakeholders develop brightness standards for on-premise EMCs. The summary comprises:

1) An overview of the importance of ensuring appropriate brightness,
2) Technology utilized to ensure appropriate brightness, and
3) Recommended brightness standards

1. Overview of the importance of ensuring appropriate night-time brightness.

EMCs that are too bright at night can be offensive and ineffective. There are significant advantages to ensuring than an electronic display is not overly bright. These advantages include:

» Conservation of energy
» Increased life expectancy of the electronic display components
» Building goodwill with the community
» Ensuring the legibility of the display

It is in the best interest of all stakeholders to ensure that EMCs are sufficiently bright to ensure clear legibility, while at the same time avoiding a display that is overly bright.

2. Technology utilized to ensure appropriate brightness.

Most EMCs are designed to produce sufficient brightness to ensure clear legibility during daylight hours. However, daytime brightness settings are usually inappropriate for night-time viewing. The following general methods are used to dim an EMC for appropriate night-time viewing:

1. Manual Dimming. Using this method, the sign operator dims the display in response to changing ambient light conditions.

2. Scheduled Dimming. Sunset-sunrise tables allow an EMC to be programmed to dim at the same time that the sun sets and rises. This method is generally acceptable, but is more effective when used as a backup to automatic dimming controls capability, such as photocell technology.

3. Photocell Technology. An EMC that utilizes photocell technology can automatically dim as light conditions change. A photocell sensor alerts the display to adjust brightness according to ambient light conditions.

3. Recommended night-time brightness standards.

Dr. Lewin recommended the development of brightness criteria based on the Illuminating Engineering Society’s (IES) well-established standards pertaining to light trespass, IES Publication TM-11-00. The theory of light trespass is based on the concept of determining the amount of light that can spill over (or “trespass”) into an adjacent area without being offensive.

In order to simplify Dr. Lewin’s recommendations, and to take a more reasonable approach to ensure that EMCs are sufficiently visible but not overly bright, it is recommended that EMCs not exceed 0.3 footcandles over ambient lighting conditions when measured at the recommended distance, based on the EMC size.

Email signhelp@signs.org to receive Dr. Lewin’s original research.

...it is recommended that EMCs not exceed 0.3 footcandles over ambient lighting conditions when measured at the recommended distance, based on the EMC size.
**Electronic Message Center (EMC) Criteria:** The night-time illumination of an EMC shall conform with the criteria set forth in this section.

**A. EMC Illumination Measurement Criteria:** The illuminance of an EMC shall be measured with an illuminance meter set to measure footcandles accurate to at least two decimals. Illuminance shall be measured with the EMC off, and again with the EMC displaying a white image for a full color-capable EMC, or a solid message for a single-color EMC. All measurements shall be taken as close as practical to a perpendicular plane of the sign at the distance determined by the total square footage of the EMC as set forth in the accompanying Sign Area of a Sign versus Measurement Distance table.

**B. EMC Illumination Limits:** The difference between the off and solid-message measurements using the EMC Measurement Criteria shall not exceed 0.3 footcandles at night.

**C. Dimming Capabilities:** All permitted EMCs shall be equipped with a sensor or other device that automatically determines the ambient illumination and programmed to automatically dim according to ambient light conditions, or that can be adjusted to comply with the 0.3 footcandle measurements.

**D. Definition of EMC:** A sign that utilizes computer-generated messages or some other electronic means of changing copy. These signs include displays using incandescent lamps, LEDs, LCDs or a flipper matrix.

---

### SIGN AREA VERSUS MEASUREMENT DISTANCE

<table>
<thead>
<tr>
<th>AREA OF SIGN sq. ft.</th>
<th>MEASUREMENT (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td>15</td>
<td>39</td>
</tr>
<tr>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>30</td>
<td>55</td>
</tr>
<tr>
<td>35</td>
<td>59</td>
</tr>
<tr>
<td>40</td>
<td>63</td>
</tr>
<tr>
<td>45</td>
<td>67</td>
</tr>
<tr>
<td>50</td>
<td>71</td>
</tr>
<tr>
<td>55</td>
<td>74</td>
</tr>
<tr>
<td>60</td>
<td>77</td>
</tr>
<tr>
<td>65</td>
<td>81</td>
</tr>
<tr>
<td>70</td>
<td>84</td>
</tr>
<tr>
<td>75</td>
<td>87</td>
</tr>
<tr>
<td>80</td>
<td>89</td>
</tr>
<tr>
<td>85</td>
<td>92</td>
</tr>
<tr>
<td>90</td>
<td>95</td>
</tr>
<tr>
<td>95</td>
<td>97</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>110</td>
<td>105</td>
</tr>
<tr>
<td>120</td>
<td>110</td>
</tr>
<tr>
<td>130</td>
<td>114</td>
</tr>
<tr>
<td>140</td>
<td>118</td>
</tr>
<tr>
<td>150</td>
<td>122</td>
</tr>
<tr>
<td>160</td>
<td>126</td>
</tr>
<tr>
<td>170</td>
<td>130</td>
</tr>
<tr>
<td>180</td>
<td>134</td>
</tr>
<tr>
<td>190</td>
<td>138</td>
</tr>
<tr>
<td>200</td>
<td>141</td>
</tr>
<tr>
<td>220</td>
<td>148</td>
</tr>
<tr>
<td>240</td>
<td>155</td>
</tr>
<tr>
<td>260</td>
<td>161</td>
</tr>
<tr>
<td>280</td>
<td>167</td>
</tr>
<tr>
<td>300</td>
<td>173</td>
</tr>
</tbody>
</table>

*For signs with an area in square feet other than those specifically listed in the table (i.e., 12 sq ft, 400 sq ft, etc), the measurement distance may be calculated with the following formula: Measurement Distance = \(\sqrt{\text{Area of Sign Sq. Ft.} \times 100}\)
HOW TO MEASURE THE NIGHT-TIME BRIGHTNESS OF AN EMC WITH OPERATIONAL CONTROL

(Note: This method can be completed by one individual, but requires operational control to shutoff the EMC)

**STEP 1**
**OBTAIN AN ILLUMINANCE METER.**

Purchase or otherwise procure an illuminance meter. Most city/county traffic departments have an illuminance meter, which are also referred to as lux or footcandle meters (lux is the metric measure of illuminance; footcandles is the English measure of illuminance). The illuminance meter must have the ability to provide a reading up to two decimal places and must be set to read footcandles. It is preferred to have an illuminance meter with a screw-mount that allows the sensor to be mounted on a tripod. A tripod ensures that the highly sensitive sensor is held perfectly still; otherwise it may be difficult to obtain an accurate reading.

**STEP 2**
**DETERMINE SQUARE FOOTAGE.**

Determine the square footage of the face of the electronic message sign (EMC) by multiplying the height and width of the EMC. This information may be available in a permit application, or can be determined by physically measuring the height and width of the EMC. Do not include the sign face square footage attributable to any additional static signs associated with the EMC (if applicable).

**STEP 3**
**DETERMINE THE MEASUREMENT DISTANCE.**

Using the total square footage found in Step 2, look up the measurement distance in the table provided in the Recommended Legislative Language on page 8, to determine the distance to measure the brightness of the EMC. The distance should be measured perpendicular to the EMC sign face. The use of a measuring wheel, laser finder or a smartphone app are the most convenient ways to measure the distance.
STEP 4
PREPARE THE DISPLAY FOR TESTING.

Ensure that the EMC is programmed to alternate between a solid white (or in the case of a monochrome display – the solid color of the display) message and a blank message. The community may require that the sign owner cooperate with testing by programming the EMC for testing upon written notice.

STEP 5
USE AN ILLUMINANCE METER TO MEASURE THE BRIGHTNESS OF THE EMC.

Mount the sensor of your illuminance meter to a tripod and orient the sensor directly towards the face of the EMC at the measurement distance determined in Step 2.

Ensure that the illuminance meter is set to measure footcandles up to two decimal places. As the display alternates between a solid white message and an “off” message, note the range of values on the illuminance meter. If the difference between the readings is less than 0.3 footcandles, then the brightness of the display is in compliance. If not, the display will need to be adjusted to a lower brightness level using the manufacturer’s recommended procedures.

STEP 6
ENSURE THAT THE DISPLAY CAN ADJUST TO DIFFERENT AMBIENT CONDITIONS.

Inspect the sign to ensure that it incorporates a photocell or other technology to ensure that the display can adjust according to ambient lighting conditions.

As the display alternates between a solid white message and an “off” message, note the range of values on the illuminance meter. If the difference between the readings is less than 0.3 footcandles, then the brightness of the display is in compliance.
HOW TO MEASURE THE NIGHT-TIME BRIGHTNESS OF AN EMC—WITHOUT CONTROL OF THE SIGN

(Note: This method requires two individuals, but does not require operational control of the EMC.)

There will be instances where the EMC illumination needs to be evaluated to ensure that it does not exceed the brightness levels established in the municipal sign ordinance. If the municipality is unable to obtain access to the sign controls or attempting to take the measurement after business hours, this method should be followed.

Unlike the six-step process described previously, this process measures the difference in brightness between the sign in operation and when the sign is completely blocked from the illuminance meter. This procedure is extremely simple and requires only an illuminance meter and a piece of painted cardboard cut to the proper size.

STEP 1

OBTAIN AN ILLUMINANCE METER.
(See previous Step 1)

STEP 2

DETERMINE SQUARE FOOTAGE.
(See previous Step 2)

STEP 3

DETERMINE THE MEASUREMENT DISTANCE.
(See previous Step 3 or use $\sqrt{\text{(Area of Sign in Sq. Ft. x 100)}}$)

<table>
<thead>
<tr>
<th>EMC Area</th>
<th>Measurement Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 ft²</td>
<td>49 ft</td>
</tr>
<tr>
<td>32 ft²</td>
<td>57 ft</td>
</tr>
<tr>
<td>50 ft²</td>
<td>71 ft</td>
</tr>
<tr>
<td>100 ft²</td>
<td>100 ft</td>
</tr>
</tbody>
</table>

STEP 4

POSITION THE TESTERS.

Based on the size of the digital display, the person conducting the test should position themselves as close to directly in front of the digital display as practical, at the appropriate distance (calculated in Step 3).

A helper should position themselves about 7 ft. to 10 ft. in front of the light meter and hold up an opaque, black sheet of material that is roughly 12 in. high by 40 in. wide. (Regular cardboard painted matte black works well for this.) The sheet should be positioned so it blocks all light from the EMC, but still allows the remaining ambient light to register on the illuminance meter.

After the cardboard block is held in place, a reading should be taken for the ambient light.

In this example, various light sources are impacting the photocell measuring 2.3 footcandles of ambient light.

This is the baseline for the measurement. Write it down.
STEP 5
USE AN ILLUMINANCE METER.

The illuminance meter should be held at a height of about 5 ft. (which is approximately eye level) and aimed directly at the EMC. The illuminance meter will account for surrounding sources of light or the absence thereof.

In this case our ambient light reading was 2.3 fc. The new light reading with the LED displaying a full white frame cannot read above 2.6 fc or 2.3 (ambient) + 0.3 (threshold). If a full white frame cannot be arranged, watch the meter to see if any ad exceeds 2.6 fc.

At this point, readings should be taken from the illuminance meter to establish a baseline illumination level. (ISA recommends that the illuminance meter is capable of levels to 2 decimal places 0.00).

Once the baseline level is established, add 0.3 footcandles to the baseline level to calculate the max brightness limit. (For example: Baseline reading is 3.15 footcandles. The max brightness level is 3.45 footcandles.)

STEP 6
DETERMINE THE BRIGHTNESS LEVEL.

Remove the opaque sheet from blocking the EMC. Watch the foot-candle meter for 3 to 5 minutes to see if the max brightness level is exceeded by any of the images on the sign. If the readings do not exceed the max brightness levels, then the EMC illumination is in compliance.

If any of readings consistently exceed the max brightness level, the lighting level is not in compliance. In this scenario, the municipality will need to inform the sign owner of noncompliance and take appropriate steps to ensure that the EMC be adjusted to a lower brightness level using the manufacturer’s recommended procedures.

If any of readings consistently exceed the max brightness level, the lighting level is not in compliance.