International Sign Association

Finding Common Ground:

Answers to Common Questions About Electronic Message Centers (EMCs)

Finding Common Ground:

Answers to Common Questions Involving On-Premise Electronic Message Centers

Is your community trying to determine how to treat on-premise electronic message center signs (EMCs)? Are you trying to strike a balance between the desire for businesses to use EMCs and community aesthetics? Do you have concerns about the safety of EMCs? Are you confused or frustrated about how to properly regulate these types of signs?

If you have answered in the affirmative to any of these questions, you are not alone. Planners, community officials, small businesses and sign companies have struggled with these questions for several years. As the trade association for the on-premise sign industry, ISA has worked with hundreds of communities across the country on EMC issues, lending our expertise in helping to develop reasonable and beneficial code language governing this modern and innovative sign technology.

Just to clarify, EMCs are not digital billboards, which advertise a good or service that is located away from where the sign is located. Rather, EMCs are digital signs that are located on the premises of the business, and that advertise goods and services that are provided at the location.

(Left) Electronic message center (EMC) / on-premise sign advertising a product that is located at the place of buiness

(Right) Digital billboard / off-premise sign advertising a business away from where the sign is located

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. For the purposes of this publication, we are focusing solely and exclusively on EMCs.

We have compiled this guide in order to help all stakeholders make informed decisions about EMCs, addressing common concerns and providing the perspective necessary for the development of effective sign regulations. We hope that the information in this publication can assist each community in finding common ground in the quest for appropriate EMC regulation.

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The traditional multitenant sign at the top is forced to use unimaginative fonts and colors in order to fit in all the businesses; the same multitenant sign on the bottom has added an EMC which advertises each tenant every ten seconds, making the sign less cluttered and more attractive.

EMCs and Aesthetics

Issue

Some communities are concerned with the impact of EMCs on the visual environment. Most concerns regarding aesthetics can be resolved with effective regulation. Proper brightness standards and regulated content presentation standards can resolve the majority of aesthetic concerns. When properly regulated and utilized, EMCs can actually enhance community aesthetics.

The manually-changeable reader board, an ancestor to EMC technology, is common in most communities. Mis-matched letters, bland fonts, and other design limitations make a reader board to electronic message center conversion an improvement in aesthetics. A properly regulated EMC is considered by some to be more attractive than a traditional reader board.

Another example of sometimes aesthetically-displeasing signs is multi-tenant panel signs that can be found in many retail multi-tenant shopping centers. Frequently these signs are packed with a long list of tenants, which are functionally invisible to the motoring public. Such lack of visibility affects the viability of the retail center, and unviable businesses can eventually become an eyesore. Allowing an EMC in a retail shopping center can give tenants the visibility they need, replace functionally invisible signs with an effective sign without increasing over all square footage, and thus improve the aesthetic appearance of the shopping center.

Lack of visibility and the ability to change advertising messages often results in some business owners using alternate methods to get the message out. Ironically, prohibitions or severe restrictions on EMCs can result in the very thing such sign codes are intended to avoid; namely, visual clutter by excessive signage. By allowing properly regulated EMCs to operate in a community, you can avoid these aesthetically objectionable behaviors from occurring. If a business owner is able to use an EMC, the need for excessive banners and other forms of visual clutter are eliminated.

Associating these signs with Las Vegas is a common concern voiced in the debate over EMCs and aesthetics. A closer look at the size, height, spacing and content delivery methods on signs on the Las Vegas strip reveals that this comparison is inaccurate. Signs on the Las Vegas strip have few or no set back requirements, spacing limitations, or height restrictions. It is not uncommon for signs on the Las Vegas strip to exceed two hundred feet in height, and most of the larger signs exceed several thousand square feet in total sign area. Most communities do not even come close to allowing signs such as these. Unless your community allows signs of this magnitude, it is highly unlikely that your community will resemble anything like Las Vegas.

Recommendations

The key to addressing aesthetic concerns regarding EMCs is to ensure that the message brightness, duration, and transition method are properly regulated and enforced in conformity to community aesthetic values. EMCs in and of themselves are not aesthetically displeasing.

EMCs and Code Enforcement

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Issue

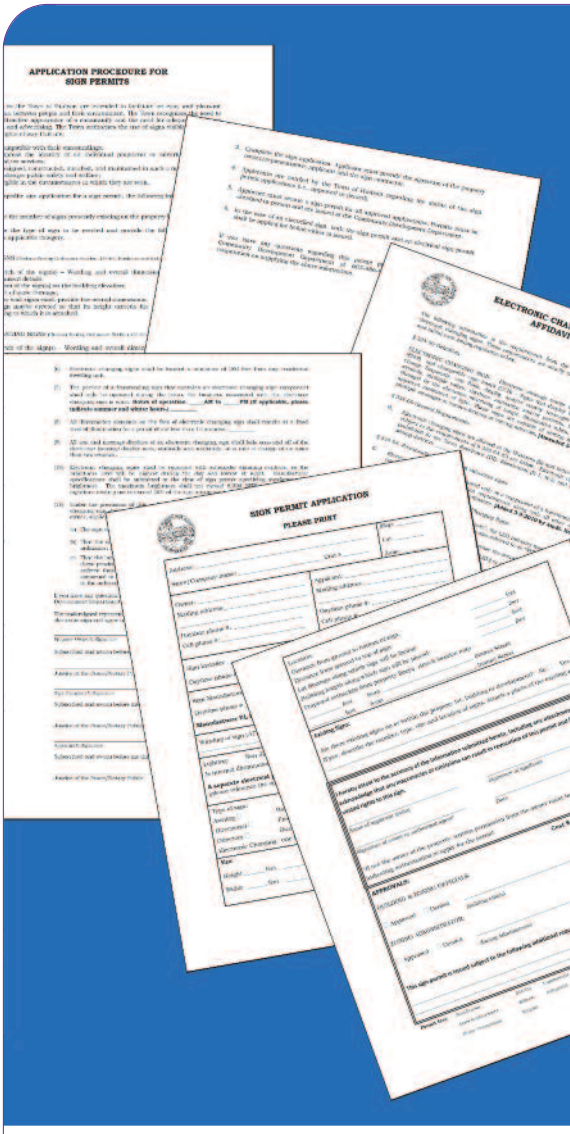
Local sign codes often have provisions regarding the regulation of EMCs. Sign companies help their customers learn what regulations govern their EMCs when the product is sold. Once the EMC is permitted, it is up to the sign owner to make sure that they program their sign so that it is in compliance with the local sign code. EMC manufacturers can only build signs that are capable of compliance.

In some rare instances, out of fear that some extra-judicial programming will take place after an EMC is permitted and operational, some local regulators have attempted to take the position that such signs are prohibited altogether.

Recommendations

The sign industry encourages strict compliance with sign codes and should always educate customers on how to properly operate EMCs. However, occasionally EMCs are programmed beyond the limitations of local regulation by their owners. Acknowledging the difficulty of city code enforcement, one way of encouraging proper and legal use of these signs by their owners is to have the owner sign an affidavit at the same time the sign is permitted in which the owner agrees to abide by the local regulations or else be cited and pay a fine.

There is no legal basis to deny a static-display electronic sign, as it is legally indistinguishable from any other illuminated sign. Car usage is not prohibited merely because cars are designed so that they can exceed the speed limit; tickets are issued to the driver if they *do* exceed the speed limit. Likewise, if a sign owner *actually* violates the zoning or sign code, the remedy is to cite them for the violation, not to presume that they will do so and refuse to issue permits at the outset.



Cities can require EMC users to promise that they will program and use their signs in compliance with the local sign code, including imposing penalties for knowingly violating the ordinance.

This EMC user can only use amber-colored text messages, which can be bland and limit the creativity of their business's message.

EMCs and Color Restrictions

Issue

Some jurisdictions have established restrictions on the types of content displayed on EMCs. Among the restrictions are limits to the number of colors displayed or a prohibition on full-color images. Many of these limitations are based on a belief that multiple colors or "photo-quality" images are more intrusive or distracting to motorists. We believe that restrictions on the appearance of EMC displays fail to advance any compelling governmental interest and represent an impermissible content-based regulation.

Color-Based Limits

Color restrictions can take the form of limiting the total number of colors displayed ("**one color** only" or "no more than 3 colors") or specifying the colors allowed ("amber only" or "no red lights"). As a practical issue, most EMCs are comprised of RGB pixels capable of displaying full color images. In order to display most colors, the image actually consists of a mixture of individual LEDs displaying red, green, or blue in varying amounts. Even if the display appears to be a single color ("white"), when viewed at a close distance the EMC can be seen to generating multiple colors of light that blend together as the viewing distance increases. Restrictions on the number of colors are problematic to enforce as questions of color shading and the "black" appearance of unlit LEDs complicate the ability to precisely determine the number of colors being displayed.

Additionally, many EMCs are designed to display information in a format similar to conventional signs. A filling station commonly displays the prices of gasoline, diesel fuel, ethanol and kerosene using different colored numerals. If a manual changeable copy panel can display a message using multiple colors, an EMC should be afforded the ability to display the identical message.

Recommendations

Any attempt to regulate EMCs based on the appearance of the display may run afoul of judicial scrutiny of content-based regulations. Other federal protections on the display of registered trademarks also may affect controls on the display of logos (for example, the Federal Lanham Trademark Act.)

Any EMC should be allowed to display text information, graphics, or images identical to a permanent display on a non-EMC sign. EMC-specific regulations should avoid restrictions on the information displayed and be limited to appropriate controls on sign brightness, size, and message change.

EMCs and Definitional Problems & Solutions

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Issue

When it comes to drafting and enforcing signs codes, it is important for the language and definitions have clear, reasonable, workable and easily understandable meanings. This is especially true when it comes to definitions in the part of the sign code that covers EMCs. This language can often be technologically incorrect, difficult to implement, and unworkable in practice, resulting in sign codes that don't benefit regulators, sign users or the community.

Terms that need consistent clarification in regard to EMC regulatory language can be as basic as the definition of a changeable message sign. There are two kinds of such signs, manually-changed and electronically-changed. Most manually-changed signs involve a background surface with horizontal channels, into which plastic letters and numbers are inserted into the channels on the sign face. The message must be changed by having an employee or technician remove the existing plastic letters and replacing them with the new message.

On the other hand, for the most part EMCs use light emitting display technologies such as LEDs. These kids of changeable message signs are operated via computer at a remote location and can change messages as fast as they can be programmed. For the purposes of this document, we are focusing on the definitional issues that arise when it comes to EMCs

Recommendations

EMC regulatory language should cover certain technical capabilities of such signs such as:

ANIMATION — the usage of multiple frames running at a fast enough speed that the human eye perceives the content to be in continuous movement.

DISSOLVE — a mode of message transition on an EMC accomplished by varying the light intensity or pattern, where the first message gradually appears to dissipate and lose legibility simultaneously with the gradual appearance and legibility of the second message.

FADE — a mode of message transition on an EMC accomplished by varying the light intensity, where the first message gradually reduces intensity to the point of not being legible and the subsequent message gradually increases intensity to the point of legibility.

FLASHING — an intermittent or flashing light source where the identical EMC message is constantly repeated at extremely fast intervals.

FRAME — a complete, static display screen on an EMC.

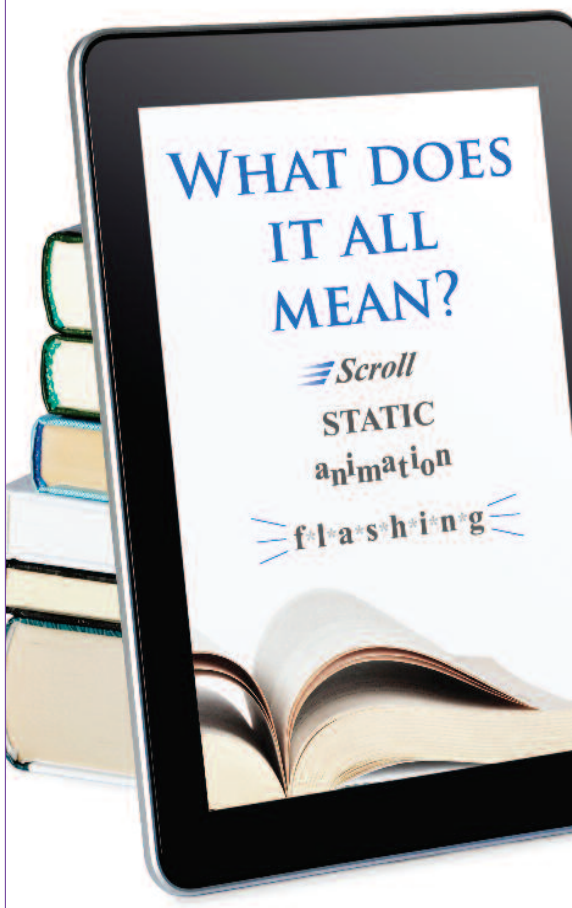
FRAME EFFECT — a visual effect on an EMC applied to a single frame to attract the attention of viewers.

SCROLL — a mode of message transition on an EMC where the message appears to move vertically across the display surface.

STATIC MESSAGE — messages that contain static messages only, and do not have movement, or the appearance or optical illusion of movement during the static display period, of any part of the sign structure, design, or pictorial segment of the sign, including the movement or appearance of movement.

TRANSITION — a visual effect used on an EMC to change from one message to another.

TRAVEL — a mode of message transition on an EMC where the message appears to move horizontally across the display surface.



The school sign on the top has been allotted a very small area for its EMC as compared to the school sign on the bottom. The school sign on the bottom is therefore able to present more information in a more legible fashion on the screen in comparison.

EMCs use light emitting diodes, or LEDs, which are one of the more energy-efficient forms of lighting available today.

EMCs and Digital Area Size Limitations

Issue

Some jurisdictions have adopted restrictive square footage area restrictions for EMCs. For example, restrictive allowable square footage for EMCs would be to only allow 25% of the maximum square footage for a sign. We believe that if square footage restrictions for electronic message centers are too restrictive this may lead to limiting the type of message that a business can display. A smaller EMC may only lend itself to effectively displaying text, restricting the business to utilize images. Since EMC's are considered such an effective method for a business to advertise, this will also have a potential negative economic impact on a business.

Economic Considerations

EMCs have proven to be a very cost effective method of advertising, especially when compared to radio, television, and print media. A typical small business does not have the recognition of a national chain. Therefore, affordable and effective advertising that is provided by an EMC can be an important factor of a successful business.

Recommendations

In support of the business community and particularly small business, no square footage area restrictions or minimal restrictions of the allowable square footage, are recommended for EMCs. This will afford a business the flexibility to display images or text providing, full marketing advantage afforded by electronic message centers. By allowing the business community greater flexibility in the allowable square footage of EMC's can also lead to overall support and economic enhancement of the community. An additional advantage of allowing minimal restrictions on the allowable area for EMC's will enable enhanced messaging for community or civic events.

EMCs and Energy Consumption

Issue

Some jurisdictions are concerned about the amount of energy consumption by electronic signs, including EMCs. Modern EMCs use light-emitting diode or "LED" lighting technology to produce changeable messages. LED lighting is one of the most energy efficient forms of lighting, according to the U.S. Department of Energy.

Recommendations

Gains in LED efficiency over the past few years have been dramatic. Many EMC manufacturers have reported efficiency gains of almost 80% over a five-year period, and it appears that the trend towards more efficiency will continue. EMCs are on the cutting edge of the most energy efficient sign technologies.

When compared to other forms of advertising such as print media, radio, or television, and EMC is a more environmentally responsible form of advertising. The energy, paper, and equipment used in other forms of advertising far outweigh the energy consumption and overall environmental impact of an EMC.

EMCs and the Highway Beautification Act

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Issue

The Highway Beautification Act (23 USC 131) of 1965 calls for control of outdoor advertising or billboards within 660 feet of the nation's Interstate Highway System and the existing federal-aid primary highway system.

Since its passage, the Highway Beautification Act has been consistently interpreted as exempting on-premise signs under its jurisdiction. However, in recent years a few state and federal officials have mistakenly sought to regulate on-premise signs using the Act as justification.

Recommendations

The Highway Beautification Act cannot be used as justification for government officials to regulate on-premise signs. The HBA does not apply to all signs within 660 feet of a primary aid highway or interstate system. 23 USC 131(c)(2) and 23 USC 131(c)(3) of the Act provide exceptions for on-premise signs, including for on-premise EMCs. It was never the legislative intent of the drafters of the Highway Beautification Act or its subsequent amendments to place on-premise signs under any federal control.

President Lyndon Johnson and his wife "Lady Bird" at the signing of the 1965 Highway Beautification Act, which regulates outdoor advertising (billboards), not on-premise signs

Electronic message centers have often been the target of moratoriums by local officials. However, prohibiting these types of signs (or other typess, such as pole signs or window signs) can often hurt existing businesses in the community and could discourage the development of new businesses.

EMCs and Moratoriums

Issue

Moratoriums are not necessary to change a sign ordinance unless it can be proven that specific kinds of signs imminently threaten public health and safety. Communities should be able to research options and revise their sign codes without resorting to moratoriums.

Many communities enact temporary moratoriums on certain kinds of signs while they consider how to regulate these specific signs. During this period of time, permits are not issued for the specific types of signs. In some cases, a temporary moratorium leads to a permanent ban on the kinds of signs in question.

Recommendations

ISA believes that sign moratoriums make for poor public policy for several reasons, including the following:

(1) moratoriums can have the affect of favoring businesses which have the targeted signs already in existence;
(2) government signs are often not included under moratoriums;
(3) moratoriums often take place during important economic opportunities (i.e. Christmas, summer tourism season etc) for local businesses; and
(4) moratoriums could discourage development of new businesses.

Most importantly, sign moratoriums can usually be avoided by effectively involving and communicating with the appropriate community stakeholders.

If a community elects to enact or extend a sign moratorium, it should be used as a last resort, and only then in furtherance of an imminent health or safety concern. A sign moratorium should be limited to the shortest possible duration.

EMCs and Night-time Brightness

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Issue

EMCs that are too bright at night can be offensive and ineffective. EMC brightness at night is an issue where sign users, the sign industry, and community leaders have a common goal: ensuring that EMCs are appropriately legible. The messages that these signs convey can be rendered unattractive and perhaps even unreadable if they are programmed too bright when it is dark outside.

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.

Recommendations

In 2008, the International Sign Association (ISA) retained Dr. Ian Lewin of Lighting Sciences to help the industry develop scientifically-researched, understandable recommendations for EMC brightness. Dr. Lewin is a past chair of the Illuminating Engineering Society of North America (IES), and is 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 this research, the recommended night-time brightness level for EMCs is 0.3 foot candles above ambient light conditions when measured at an appropriate distance. This is a lighting level that works in theory and in practice. Dozens of jurisdictions across the country have adopted these standards, either in whole or in part.

Included with this research and recommendations are model statutory language and six short steps to help guide the process. You can find these EMC Night-time Brightness Recommendations at www.signs.org/brightness.

EMCs and Off-Premise Messages

This shopping center's electronic message center (EMC) is communicating a message not about any goods or services sold on the property, but about a non-commercial community-oriented event that is happening at a place other than at the location of the sign. It is perfectly acceptable for an on-premise EMC to broadcast such a non-commercial message; however, if the same sign were to communicate a commercial message about a store in the next town or advertise for a product that was not sold at that particular location, it would be in danger of losing its permitted status as an on-premise sign and could instead be classified as an off-premise sign. This new classification would usually entail undergoing a new permitting process, additional fees and other arduous procedures.

Issue

An on-premise sign is a communication device whose message and design relate to a business, an event, goods, profession or service being conducted, sold, or offered at the same location as where the sign is erected. An off-premise sign is any sign that is not appurtenant to the use of the property, a product sold, or the sale or lease of the property on which it is displayed and that does not identify the place of business as purveyor of the merchandise, services, etc. advertised upon the sign.

When an on-premise EMC is programmed to include among its several messages one that advertises a business, an event, goods, profession or service being conducted, sold, or offered at a different location from where the sign is erected, it may be viewed by some government officials as being an off-premise sign, and need to be permitted and regulated as such. This can have adverse impacts on both the individual sign users as well as other future sign users who will need approval from zoning or permitting authorities.

Recommendations

ISA believes that the messages that should be displayed on signs permitted under on-premise sign regulations should be messages relating to a business, an event, goods, profession or service being conducted, sold, or offered at the same location as where the sign is erected. ISA also believes that on-premise signs should be permitted to display noncommercial messages and public service announcements without risk of losing their on-premise status or exemption from outdoor advertising restrictions.

EMCs and Text-Only Restrictions

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Issue

Some jurisdictions have established restrictions on the types of content displayed on EMCs. Among the restrictions are prohibitions on high-quality images. Many of these limitations are based on a belief that "photo-quality" images are more intrusive or distracting to motorists. We believe that restrictions on the appearance of EMC displays fail to advance any compelling governmental interest and represent an impermissible content-based regulation.

Alphanumeric Limits

Alphanumeric controls are designed to limit displays to the 62 Latin letters and Arabic numbers. Photographic images, graphics, and other characters are prohibited. While alphanumeric text allows messages to be expressed, the limited displays are not necessarily as effective as images can be. As noted in the APA's *Street Graphics and the Law*, (pictographic) images are encouraged as they are more easily comprehended than text. Additionally, images allow businesses to express the products offered at their location using registered trademarks and logos, which are much more readily identified than words expressing the same message.

Recommendations

Any attempt to regulate EMCs based on the appearance of the display may run afoul of judicial scrutiny of content-based regulations. Other federal protections on the display of registered trademarks also may affect controls on the display of logos.

Any EMC should be allowed to display text information, graphics, or images identical to a permanent display on a non-EMC sign. EMC-specific regulations should avoid restrictions on the information displayed and be limited to appropriate controls on sign brightness, size, and message change.

The Burger King EMC photo at the top can only use text, while the Burger King EMC photo on the bottom can also show pictures, logos, and other images.

Pictured is an official District of Columbia Department of Transportation digital sign, with a two-second time interval, informing motorists during rush-hour on a high-traffic area about their distracted driving law. That our nation's capital uses this type of signage technology to educate drivers demonstrates that digital technology enhances safe traffic conditions.

EMCs and Traffic Safety

Issue

Many jurisdictions that consider regulations on EMCs fear that allowing this technology to be used in signage will lead to an increase in traffic accidents. These fears are unfounded. The LED technology inherent in electronic message centers have been studied for over 30 years and have never been found to be hazardous to traffic safety. Studies from reputable organizations such as Virginia Tech Transportation Institute, Tantala Associates and even the Federal Highway Administration have found that digital signs are appropriate along the nation's roadways.

The Federal Government has accepted the use of this technology in signage along the roadways. Over forty State Governments have specifically adopted regulations allowing for its usage. In fact, digital signs are found throughout the United States.

Recommendations

There are two basic types of safety studies in the United States: Statistical and Human Factors. Neither type of study has ever shown that digital signs cause an increase in accidents or are a hazard to the traveling public.

Statistical studies look at multiple locations and attempt to determine whether the introduction of a stimulus (in this instance an EMC) caused an increase in accidents. The study begins by looking at traffic data at specific locations, for a number of years before the digital sign is erected. This data provides a baseline by which to judge whether there was an increase in accidents. The researcher then analyzes the same data that is present for these locations after the digital sign is erected. No statistical study has ever shown that digital signs cause an increase in accidents. In fact, a 2012 study by Texas A&M University researched over 120 locations of EMCs in four states, and found that there is "no statistically significant impact between the installation of on-premise digital signs and an increase in crashes."

Human Factors studies look at the way in which a stimulus affects a driver. Such studies have been done on any number of stimuli: eating and drinking, changing the radio-A/C dials, texting, etc. This type of study looks at how a driver may become distracted by a stimuli and how such distraction could increase the likelihood of an accident. No such study has ever found that digital signs are so distracting as to be the cause of an accident.

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