

INTERNATIONAL SIGN ASSOCIATION

# The Importance of Effectively Illuminated Signs at Night

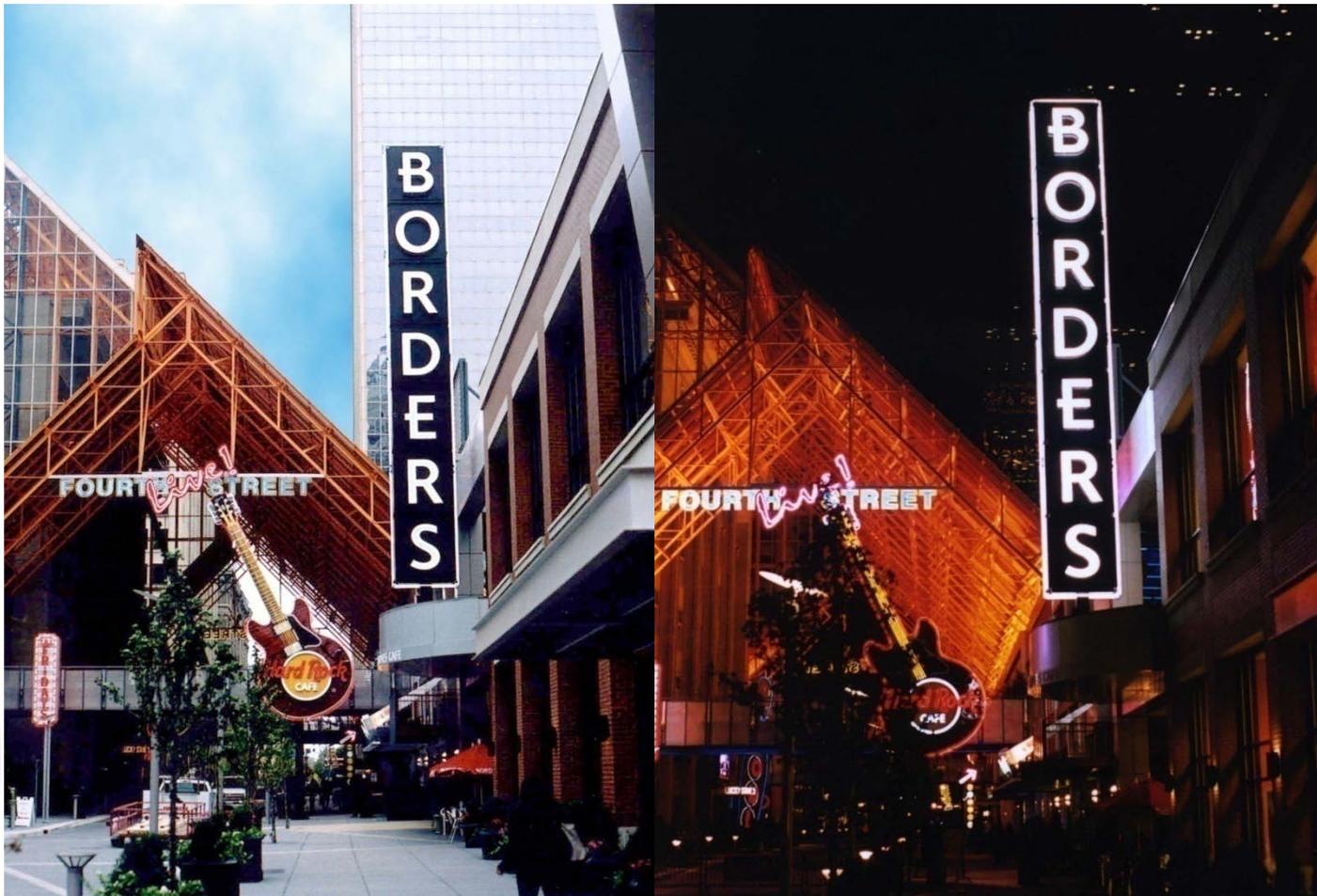
MAG Dark Sky Stakeholders Group

Tuesday, April 19, 2011

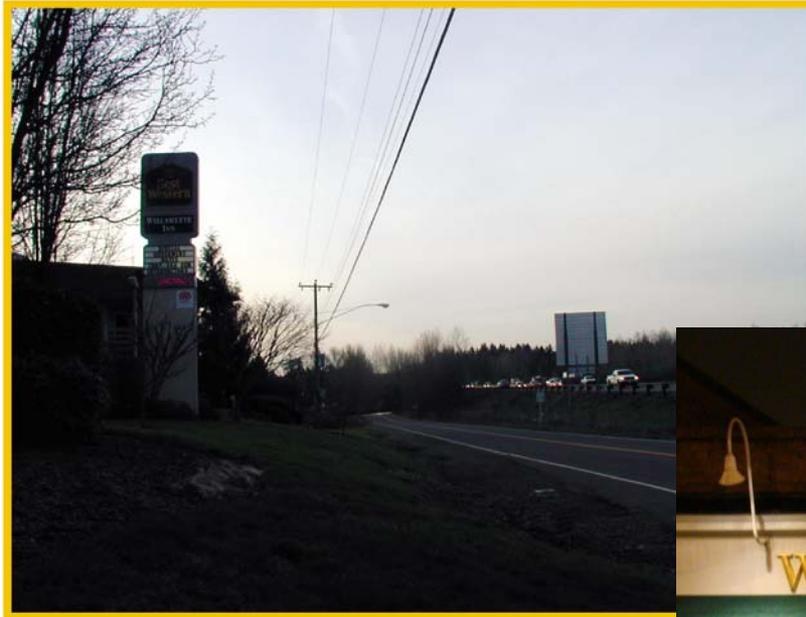
# Signs are Valuable to Communities

- \* They help small businesses advertise
- \* They convey community-oriented messages
- \* They can promote driver safety
- \* They can provide for easier way-finding
  
- \* **Just as important at night** \*

# Signs are Valuable to Communities



# Effectively Illuminated Signs are Necessary at Night



# Economic Value of Signs

## Mobile Study of Fast-Food Restaurants

Print/electronic advertising	10%
Word of mouth	14%
Always knew	29%
<i>Saw it while passing (sign)</i>	<i>35%</i>

- Mobile customers who stop and purchase on impulse
- Retail & service companies rely heavily on impulse customers to grow their business

# Economic Value of Signs

- As indicated by the SBA on-premise signs are by far the most cost effective method of advertising
- When compared with other methods of advertising on-premise signs cost a fraction of billboards, radio, TV, and newspaper
- Trickle down impact as the sign “value” supports: taxes, employment and ancillary businesses.

# Economic Value of Signs

- More effective branding and easier to communicate using illuminated signs at night



# Lighting Restrictions and Small Businesses

- Larger businesses can rely on other forms of advertising (TV ads, direct mail, radio, etc)
- Larger businesses often have elaborate storefront lighting, while small businesses often rely *solely on their signs* for identification and advertising at night
- Commercial communication is protected speech, and it often relies on effective lighting as its sole medium of communication at night
- Lighting restrictions and curfews can make signs less visible, ineffective and hurt the bottom line

# Other Economic Issues to Consider

- Businesses paid initial investment so that their illuminated signs could be seen
- A business benefits from the advertising from an illuminated sign even when closed, because it helps reinforce memory of the business for recall and brands the site
- Retrofitting sign lighting can be costly for retailers
- An example- 2 businesses are required to turn off their sign panel due to the proposed curfew
- The estimated costs to: remove the sign partition each panel, add separate circuits, install new lighting for each tenant panel, reinstall the sign could be approximately \$40,000 or more...



# EMC Brightness Recommendations

- Developed by Dr. Ian Lewin, respected lighting expert
- Applies to Electronic Message Centers (EMC) only, not traditional electric signs
- Why? EMCs use LEDs, which can dim, and EMC lighting is not covered by sign face
- Increasing number of communities have accepted these recommendations

# EMC Brightness Recommendations



# Sign Luminance Basics

- Like stars in the evening sky, visibility of electric signs is a function of size, luminance and viewing distance (Inverse Square Law).
- As ambient light increases, signs must be brighter to afford sufficient visibility.
- Electric signs must be designed to overcome various brightness-limiting factors caused by environmental conditions.

# Factors Affecting Sign Luminance

*Why bright light sources are critical*

- **Plastic face thickness** (e.g. a 3/16-inch face transmits 25% less light than a 1/8-inch face)
- **UV exposure** on plastics (yellowing, etc.)
- **Dirt and dust** (like a car needing washed)
- **Face colors and amount of copy/graphics**
- **Aging of lamps** (degrades initial luminance)
- These factors especially apply to **internally illuminated signs**

*\* The sign industry developed conventional practices to compensate for these factors.*

# Sign Luminance Guidelines

- A 2005 laboratory study by Southern California Edison reported the following baseline luminance values for internally illuminated, plastic signs:

**1,200 cd/m<sup>2</sup> (nits):** 1/8" thickness face

**900 cd/m<sup>2</sup> (nits):** 3/16" thickness face

# Illuminated Signs and Traffic Safety

- “Sign deficiency” is a leading cause of accidents on primary and interstate highways
- “Failure to provide information – in a safe and effective manner – when and where it is needed by a driver”
- Arbitrary restrictions on illumination can adversely impact driver behavior
- Effectively illuminated signs enhance driver safety by providing conspicuous, legible and recognizable landmarks to motorists

# Illuminated Signs and Traffic Safety

- DOT studies of traffic signs show that brighter signs are more conspicuous, more legible and safer for motorists.
- A sign in a dark rural environment can be read with lower brightness than one in a brightly lit urban environment.
- The brightness of a message also has an impact on the visibility of the message. The brighter the message, the easier it is to read.
- The vision of older drivers at night should be taken into consideration

# Illuminated Signs and Traffic Safety



# Illuminated Signs and Wayfinding

- If they are visible enough or prominent in a community, illuminated signs can serve as wayfinding devices for motorists, directing them to their destinations



# Illuminated Signs and Public Safety

- Citizens feel more secure in well-lit areas at night
- Illuminated signs can make the street safer by deterring criminal activity and assisting emergency personnel in locating particular sites after dark.
- National Crime Prevention Council:  
*“If you position your illuminated sign so that light falls on the parking lot to augment street level lighting, then it absolutely will make a difference. Lighted signs help prevent theft and pilferage and can reduce the business owner’s premise liability...Illuminated on-premise signage is one way business owners can contribute to the community’s well-being.”* - NCPC Director of Research and Evaluation Jean O’Neil.

# Illuminated Signs and Public Safety



# Illuminated Signs and Energy Usage

- Production of most alternative advertising for the small business (including direct mail, coupons, TV ads, newspapers, etc.) consumes natural resources and energy which likely have a greater carbon footprint than an illuminated sign.
- Motorists can use more gasoline looking for their destinations because of poorly-lit signage
- Electrical sign components are becoming more energy efficient

# Other Policy Considerations

- The Manual on Uniform Traffic Control Devices (MUTCD) recommends that in order for a sign to be visible, it must be of adequate size, of adequate contrast, be properly located and be of adequate luminance.
- Keeping signs effectively lit means that signs won't have to be bigger or placed closer to the road to be safely visible
- Research indicates that internally illuminated signs are much more visible than externally illuminated signs
- Internally illuminated signs do not have as much problem with issues such as glow and light trespass as external lighting

# Conclusion

- Effectively illuminated signs are crucial for economic activity and safety purposes
- Some sign lighting can be dimmed, others cannot at this point in time
- Sign lighting components are becoming more innovative and energy efficient every day
- More research is needed before enacting policies that could harm small businesses and public safety

# Recommendations

- The Arizona Sign Association and the International Sign Association recommend that the sign section not be included in the Pattern Outdoor Lighting Code due to the public safety and potential economic impacts

# Leave the Lights On!



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