Digital Billboards

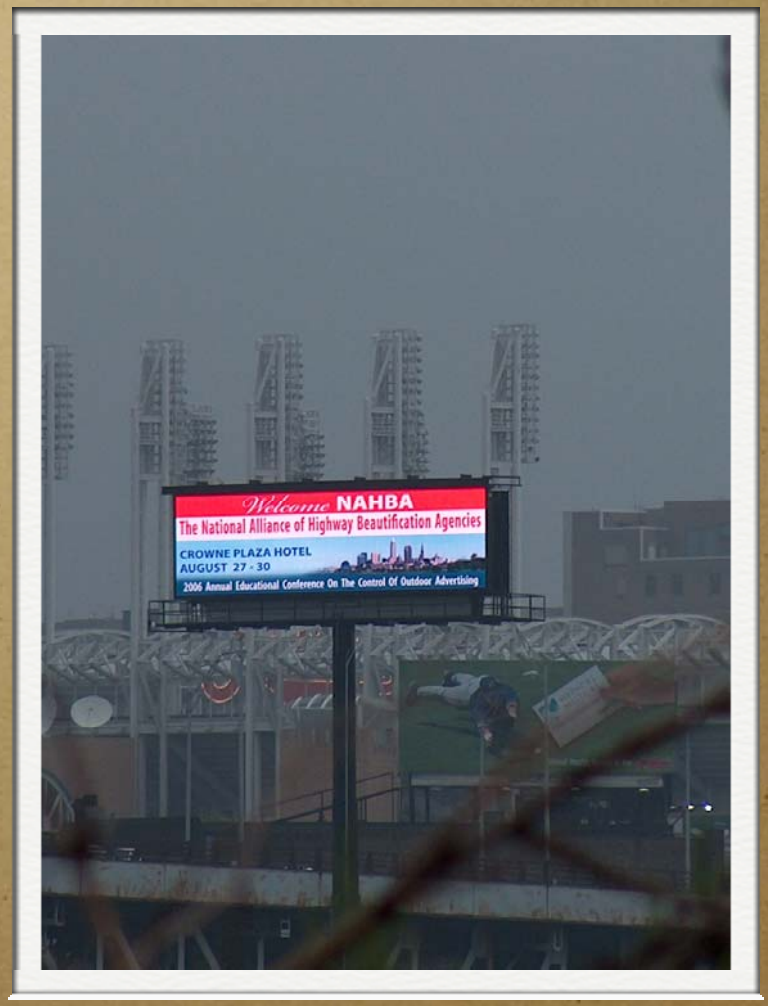
Unsafe and Unsightly at Any Speed

What's wrong with digital signs?

Aesthetic Concerns

Highway Safety Implications

Environmental Consequences



Aesthetics

- Brightest objects in the landscape
- Become dominant visual element and overwhelm the fundamental character of the place
- On-premise digital displays with motion can be particularly garish
- Distraction from other visual/scenic qualities
- Clash with historic or established architectural elements, even at great distances

Other Considerations

- Effects on property values
- Light and noise effects on nearby households and businesses
- Enormous compensation costs if signs are altered, moved, or removed

Highway Safety

- Brightest object in the driver's field of vision, especially at night
- Cause inadvertent and instinctual glances
- Images rotate every 4, 6, or 8 seconds causing lingering looks to see what's next
- Complex messages often take 5 seconds to comprehend

How bright is a digital billboard?

- **The sun is measured at 6,500 nits**
- **During the daytime, a digital sign can be set at over 10,000 nits**
- **The Virginia Tech Transportation Institute found digital billboards to be 10X brighter than the surrounding area, and 3X brighter than a traditional billboard**

What do we know?

(Source: 100-Car Naturalistic Driving Study, USDOT National Highway Traffic Safety Administration)

- Anything that distracts the driver from the forward roadway for more than **two seconds** significantly increases the chances of crashes and near crashes.
- 23% of crashes and near-crashes that occur in metropolitan environments are attributable to eyes off the forward roadway greater than **two seconds**.
- Nearly 80% of the crashes and 65% of near crashes were caused by distractions that made the driver look away for **up to three seconds**.

Some common-sense math: add it up

Brightest object in driver's field of vision that attracts inadvertent and unwilling glances

+

Frequently changing intermittent messages cause glances to linger to see what's next in the show

+

Complex advertising messages that take five seconds to comprehend

=

More than two seconds

The scientifically established driver distraction threshold is shattered by digital signs.

Can a digital sign simultaneously be safe for motorists and effective as an advertising medium?

- If the motorist spends enough time to read and comprehend the sign, by definition they have taken their eyes away from the driving task too long
- Digital signs are designed to pull drivers' attention from the roadway, otherwise they are useless as advertising
- Drivers already have too much distraction inside and outside the car
- Digital signs, because they are especially distracting due to bright light, vibrant color, and image changes or motion, divert attention from official signs that are necessary for the safe operation of the car

What research is coming?

- Federal Highway Administration is planning research (completion 2009)
- The American Association of State Highway and Transportation Officials (AASHTO) is sponsoring preliminary research leading to future investigations
- The Transportation Research Board of the National Academy of Sciences is conducting a human-factors workshop and will manage AASHTO research

What Should State and Local Governments Do?

The only responsible action is a **moratorium** on electronic billboard permits until all the data is in and public safety can be assured,

because ...

Communities may expose themselves to enormous liabilities

- **The Highway Beautification Act requires cash compensation to sign owners of billboards on Interstate and federal-aid highways**
- **Compensation is usually defined as the value of the structure, plus lost revenue, making each digital sign worth millions of dollars**
- **The costs of compensating billboard owners will be enormous even in the course of normal highway widenings and improvements if the signs need to be moved or taken down**
- **Once studies are completed, and if the signs are found to be unsafe in their current configurations, any required changes to sign operations may cost governments millions in compensation payments**
- **Who will be held liable if accidents are influenced by the signs if it is shown that governments knowingly permitted their construction even in the face of pending research or critical safety studies?**

But isn’t there research that says these signs are safe?

The billboard industry sponsored two studies of digital signs in Cleveland conducted by Suzanne E. Lee and Tantala Associates, purporting to show they are safe.

According to the Philadelphia Inquirer (8/21/07), Clear Channel claims they paid for the research, although the reports say the Foundation for Outdoor Advertising Research and Education, an arm of the Outdoor Advertising Association of America.

The Maryland State Highway Administration commissioned human-factors expert Jerry Wachtel to assess the validity of the studies and prepare a peer-review report.

The Wachtel Report

Found serious deficiencies in both reports in terms of:

- Decisions and assumptions made in support of the research
- Methodology
- Review and application of cited literature
- Statistical methods, controls, and analyses
- Misleading and inconsistent reporting, and evidence of bias

“Having completed this peer review, it is our opinion that acceptance of these reports as valid is inappropriate and unsupported by scientific data, and that ordinance or code changes based on their findings is ill advised.”

Jerry Wachtel, CPE
The Veridian Group, Inc,
Berkeley, California

A Critical, Comprehensive Review of Two Studies Recently Released by the Outdoor Advertising Association of America

Prepared for
Maryland State Highway Administration
October 18, 2007

Digital Signs and the Highway Beautification Act

- Violate the Highway Beautification Act itself
- Violate HBA regulations which prohibit “intermittent” lights
- Catastrophic Federal Highway Administration memorandum of September 25 ignores law, regulations, existing research, future research, potential financial liabilities, and common sense

FHWA memorandum

- Violates HBA provisions on off-premise signs
- Violates regulatory prohibition on signs with “intermittent” lights
- Permits signs before FHWA research completed
- Ignores NHTSA findings on two-second distraction threshold
- Ignores later costs if signs must be altered or removed
- Subverts federal rule-making requirements

Environmental Considerations

- One digital billboard consumes 397,486 kWh/year*
- The carbon footprint of one digital billboard = 49 traditional billboards or 13.39 homes
- One digital billboard = 108.41 tons/year of carbon dioxide
- Standard size digital billboard contains 449,280 light-emitting diodes

* Source: U.S. Green Buildings Council Central Balcones Chapter (Texas)

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For More Information

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