



Photo by William Brinton.

## BILLBOARDS *in the* DIGITAL AGE

UNSAFE (AND UNSIGHTLY) AT ANY SPEED

**IMAGINE DRIVING** along a twisting, two-lane Alabama road at night. As you slow for a curve, suddenly an enormous television screen pops into your field of vision, temporarily blinding you before flashing an ad for an insurance company.

The glaring lights of this particular sign, slapped up in suburban Vestavia Hills, blindsided city zoning officials as well. They had unknowingly given entrée to digital billboard technology when they approved what appeared to be a routine application to add lighting to a sign grandfathered in years ago. The application made no mention of changeable messages and gave no indication it would transform an old, static board into a giant vehicle for digital TV-like images.

Police officers immediately complained the board posed a major safety hazard. Neighbors complained about the glaring lights. Lamar Advertising Company, which owns the board, claimed they'd made the changes in "good faith."

Anyone who has been following the digital-billboard movement may recognize that argument as a popular tactic employed by an industry that finds it easier to ask localities for forgiveness than permission. It's one of many strategies being used to bring digital technology to as many cities and towns as possible, before localities have a chance to explore the implications of the new technology, update their sign ordinances, or ban digital signs outright.

"There's a full-court press going on at the national, state, and local level, being waged by Lamar, Clear Channel, and CBS Outdoor," said Bill Brinton, an attorney specializing in sign law and a member of the board of Scenic America. Lobbyists are pushing state legislators to pass bills that clear the way for LED (light-emitting diode) signs on state and federal roads, and the industry is pressuring state departments of transportation to rewrite regulations to allow them to transform static signs into digital boards. And in cities and counties across America, they are pressing for looser sign ordinances or simply installing the new technology without permission to do so.

*"For in your face results that won't end in a restraining order, out of home is the only way to go."*

[www.lamaroutdoor.com](http://www.lamaroutdoor.com)

Digital signs are far more of a threat than their predecessors, said Kevin Fry, president of Scenic America. They're brighter, which makes them visible from far greater distances; they're much more distracting, because of their brightness and because the messages are constantly changing; they're often taller than regular boards, giving the appearance of large, plasma-screen TVs; and they're substantially more expensive to remove, so localities without amortization laws could find themselves unable to afford taking them down. This would be especially true for signs along federal-aid highways where the use of amortization is prohibited by the Highway Beautification Act.

Despite higher installation costs, the profitability of digital boards provides a powerful incentive for companies to put up as many as possible. Clear Channel Outdoor spent \$3.5 million converting seven static boards to digital in Cleveland, but watched revenue jump from \$300,000 to \$3 million in the network's first year, according to Mark P. Mays, Clear Channel's CEO.

That's because digital boards allow companies to sell ad space to 10 times as many clients as static ones; most signs change messages every six seconds. They also allow advertisers to change content several times a day or week, and unlike the static boards, which require contractors to change messages manually, digital boards allow operators to change content from remote locations in a matter of seconds, with just a click of a mouse.

Lamar Advertising boasts that it has digital billboards in as many as 44 states. Clear Channel, the world's largest outdoor advertising company, is similarly upfront about its goals for spreading digital technology. In a November 2006 press release announcing the launch of multi-sign digital networks in Milwaukee and Tampa, Clear Channel Outdoor Global President Paul Meyer put it bluntly: ▶

*continued*

“New digital technologies provide us with the capability to execute both general market and targeted advertising campaigns that *consumers can't mute, fast forward or erase,*” he said. [Emphasis added.]

When digital comes to town, local governments are often caught off guard. As was the case in Vestavia Hills, billboard owners are not always upfront about what they are doing, and the technology may be installed without notice.

But in a rare victory for billboard opponents, the Vestavia Hills Board of Zoning Adjustment (BZA) ordered Lamar to turn off the lights and shut its board down—at least until they could hold a hearing for a zoning variance. The board ruled that the switch had been made under “false pretenses.” Had Lamar asked for permission to add digital animation, the board likely would have said no, particularly for that location, zoning officials said. *In fact, Vestavia Hills' new sign ordinance, which was under consideration at the time, would outlaw this kind of sign entirely. The BZA later denied the variance request, and the billboard company filed a lawsuit which is now in the county court system. In the meantime, the digital board has been covered with a traditional sign. A permit request to install a digital face on the other side of the sign was denied.*

City officials in several Minnesota communities were likewise surprised last year when digital billboards began to appear on Clear Channel and Lamar sign structures. In most cases, the companies that leased the signs had sought building permits only to upgrade them, omitting from their applications any indication they planned to hang digital displays on those structures after the upgrades. Their chosen locations included communities with some of the strongest billboard prohibitions.

Clear Channel's strategy backfired, especially in Minnetonka, which for more than 41 years has carried a prohibition on illuminated signs that change in color or intensity. The city pulled the plug on the signs, issued stop-work orders, and then defeated an effort by Clear Channel to obtain an injunction. As Judge Lloyd Zimmerman later found, “there is substantial evidence to support Minnetonka's claim that Clear Channel avoided disclosing its plans to deploy LED billboards in the City of Minnetonka, and operated ‘under the radar’ in order to get the billboards up and running, in order to meet its expansion and profit goals for 2006.”

Meanwhile, one Minnesota community after another has adopted a moratorium on digital display devices to temporarily protect themselves against a repeat of the companies' subterfuge.

It's not unusual for billboard operators to erect digital signs even when State-Federal agreements or local ordinances prohibit them, knowing that local enforcement can be difficult due to lax or inefficient enforcement or the prospect of the lengthy and costly litigation that inevitably follows.

The Texas Department of Transportation's State-Federal agreement clearly prohibits digital billboards. In fact, when state transportation officials requested clarification from the Federal Highway Administration (FHWA) to see if they could allow the boards, they were told in no uncertain terms they could not.

“While the technology for LED displays did not exist at the time of the agreement, the wording in the agreement clearly

prohibits such signs,” the FHWA wrote to Texas transportation officials in a letter dated March 15, 2006.

Nonetheless, LED signs have gone up in several cities around the state. And in a recent media interview, Clear Channel Communications CEO Mark Mays made it clear his company had big plans for Texas, particularly San Antonio.

“The question becomes how big an opportunity it will be over the next 10 years,” he said. “Is it going to be half the signs in San Antonio, is it going to be a quarter of the signs in San Antonio or is it going to be 10 percent?”

“If Texas is going to allow this, the public should be involved,” said Margaret Lloyd, policy director for Scenic Texas. “In my judgment, we need at least three things: first, a safety study funded by a neutral, objective party; second, a cost study to determine the taxpayer burden if these signs have to be condemned for highway widenings; and finally, a public opinion survey to determine if citizens want these signs to be erected along their publicly funded highways.”



One state where the industry hasn't been successful in getting what it wants is Kentucky, where state transportation regulations prohibit both Tri-Vision and LED signs.

Tom Fitzgerald, director of the Kentucky Resources Council, said the outdoor advertising industry has tried on several occasions to push through legislation that would allow them to add the new technology, but lawmakers in the House have stood firmly against it. They came closest in 2004, when the industry had someone insert language allowing Tri-Vision signs into a bill that focused on tree-cutting around billboards.

“That bill got through the Senate and into the House before people realized the provision was even in there,” Fitzgerald said. But the House leadership killed the bill, as it has done to tree-cutting bills consistently over the years. This year, a bill that would have allowed electronic billboards and Tri-Vision signs was introduced but died in committee.

“We've not really had a toe-to-toe fight on electronic billboards yet,” Fitzgerald said. “I believe there are strong public safety issues at stake.”

For many outraged citizens, traditional concerns about “litter on a stick,” have now been supplanted by the prospect of confronting “PowerPoint on a stick” along their communities' roadways. The advent of digital technology has opened a new front in the battle against blight—with more at stake than ever before.

# ARE THEY SAFE?

The billboard industry often tries to win support for its signs by offering to display public service messages. But no amount of these inducements can compensate for the potential public safety consequences of these devices.

**BILLBOARDS ARE ADVERTISEMENTS.** They are designed to grab our attention, and hold it, just like a television or radio commercial or an ad in a magazine. The latest in billboard technology—the digital or electronic sign—tries to hold our attention even longer by changing messages and pictures every few seconds using a series of extremely bright, colorful images produced mainly via LED (light-emitting diode) technologies.

Common sense tells us that if we are looking at a billboard and not at the road when we are driving, that's a dangerous thing. Brightly lit signs that change messages every few seconds compel us to notice them, much the same way our eyes move to the television screen when it's on. They lure our attention away from what's happening on the road and onto the sign. It's just human nature. And it works. That's why these signs are so incredibly lucrative for the billboard industry.

Proponents of digital billboards say nobody has ever proven that they increase traffic accidents. This statement is only partially true. Some studies have shown a link between digital billboards (as well as static boards) and traffic safety problems, while others remained inconclusive. *Importantly, no objective studies have shown them to be safe, nor have studies been conducted since these signs have started to proliferate.*

## What does the research currently say?

■ A Wisconsin Department of Transportation study conducted in the 1980s examined crash rates on I-94 East and West adjacent to the Milwaukee County stadium, after a variable message sign that showed sports scores and ads had been installed. The study found that *sideswipe and rear-end collisions were up as much as 35 percent where the sign was most visible.*

*“No empirical studies are necessary for reasonable people to conclude that billboards pose a traffic hazard, since by their very nature they are designed to distract drivers and their passengers from maintaining their view of the road.”*

—Major Media of the Southeast v. City of Raleigh, 621 F.Supp. 1446, 1450 (E.D.N.C. 1985), *aff'd*, 792 F.2d 1269 (4th Cir. 1986), *cert denied*, 479 U.S. 1102 (1987).

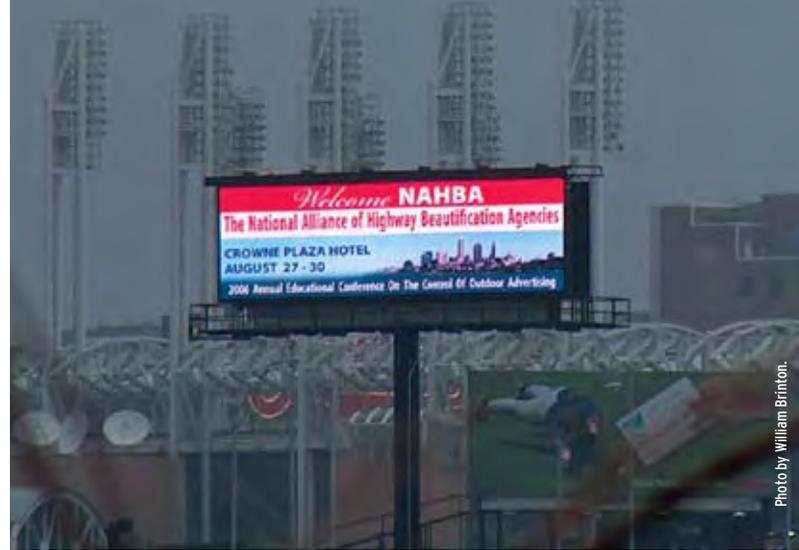


Photo by William Britton.

## THE TWO SECOND RULE: What Every Community Should Know

An analysis of the *100-Car Naturalistic Driving Study*, conducted by the National Highway Traffic Safety Administration, released in 2006, *showed that taking one's eyes off the road for more than two seconds for any reason not directly related to driving (such as checking the rearview mirror) “significantly increased individual near-crash/crash risk.”*

### Are electronic signs especially attention-getting?

*“Nothing’s as eye-catching as an electronic LED display. The brightly-lit text and graphics can be seen from hundreds of feet away, drawing the attention of everyone within view.”*

Source: Voiceover narration of Trans-Lux promotional video ([www.impactmovie.com/trans-lux](http://www.impactmovie.com/trans-lux))

What factors make drivers likely to look at an electronic sign for more than two seconds at a time, and therefore put themselves and others at risk?

- They are extremely bright and are designed to be visible in bright sunlight and at night. The eye is drawn to them far more strongly than to traditional illuminated billboards. They are designed to be eye-catching, and they are.
- They can be seen from great distances, even as far away as six-tenths of a mile, making them distracting even before they begin to communicate their messages.
- The images rotate every 6–10 seconds and drivers will naturally look at the sign long enough to see what comes up next. There may be as many as 10 messages in the rotation.
- The Florida Department of Transportation’s official position is that it takes a minimum of six seconds to comprehend the message on an electronic billboard, which is already three times the safe period for driver distraction.

### Will people stare at a changing sign to see what’s next?

*“The reason [electronic] advertising works is because it is impactful. If you see people parked at the stoplight watching it, you see their eyes waiting for it to change.”*

Source: Clear Channel Outdoor Des Moines division president Tim Jameson, quoted in the *Des Moines Business Record*, Feb. 4, 2007

- Because the messages change daily or even hourly, even commuters who pass by the signs every day will look to see what’s new. Traditional signs become visual background noise for local drivers, and thus have less safety impact; but electronic signs never blend into the background.
- Younger drivers may be more easily distracted by electronic media, and older drivers may require longer viewing times to comprehend often confusing, elaborate, and colorful images.

See Additional Resources on the back page for links to the studies referenced above.

- A 1998 FHWA memo noted that digital signs raise “significant highway safety questions because of the potential to be extremely bright, rapidly changing, and distracting to motorists.”
- A 2001 FHWA review of billboard safety studies found that “the safety consequences of distraction from the driving task can be profound.”
- A 2003 report titled External-To-Vehicle Driver Distraction, by the Development Department Research Programme in Scotland, found that “there is overwhelming evidence that advertisements and signs placed near junctions can function as distracters, and that this constitutes a major threat to road safety.” It further noted that, “Young (aged 17–21) drivers are particularly prone to external-to-vehicle driver distraction.”

If other studies have remained inconclusive, there is good reason, researchers say. First, many of the studies have been funded, and directed, by the billboard industry (see sidebar). Second, there are inherent difficulties in conducting traffic safety research.

Jerry Wachtel, an engineering psychologist with 25 years of experience in the field of driver behavior, said too many variables contribute to traffic accidents to make it possible to prove causality from a single source. “Most accidents are not caused by one thing, but multiple things happening at once,” he said.

According to Wachtel, digital billboards undoubtedly contribute to the growing number of distractions that vie for a driver’s attention today. Cell phones, navigational systems, and DVD players constitute in-car distractions, while billboards, especially those that change messages, constitute external distractions. Both, he said, contribute to traffic safety hazards that he believes are growing increasingly worse.

“The outdoor advertising industry in my opinion is one part of the problem, but a significant part,” he said.

Wachtel co-authored a report for the Federal Highway Administration back in the 1980s, updated in 2001, which concluded that “some studies showed a clear relationship between the presence of outdoor signs and driver error or accidents and other studies hadn’t shown anything.” It recommended government-funded research into the issue, but the research was never funded.

The Federal Highway Administration in January 2007, however, announced that it will initiate a study to examine the safety issues related to electronic signs. Details on the scope and timing of the research have not been released, but results are not expected until 2009.

## Court Rules Virginia Tech Billboard Safety Study Lacks Credibility

To overcome the argument that billboards are a distraction to drivers, the outdoor advertising industry often points to a study it says “definitively” shows the signs create no safety risks whatsoever. This study, conducted by Dr. Suzanne Lee of the Virginia Tech Transportation Institute, often pops up in outdoor advertising litigation, or may be given to lawmakers in hopes of persuading them of the supposed safety of highway signs.

This study is not only inherently flawed and biased; its uselessness was noted by a federal district court judge in New York. In *Nichols Media Group v. The Towns of Babylon and Islip*, the court held that “the Lee Study is so infected by industry bias as to lack credibility and reliability.” It based its opinion on several factors:

- “The study was funded by the Foundation for Outdoor Advertising Research and Education, a close affiliate of the Outdoor Advertising Association of America.”
- “Trial testimony revealed that representatives of the OAAA were intimately involved in the design and conduct of the Lee Study.”
- “The Lee Study has been neither widely disseminated nor subject to peer review. Nor have the conclusions of the Lee Study been replicated in any other study.”

Don’t let industry lobbyists use this discredited study as “proof” that billboards are safe. The only thing it proves is how much money the billboard industry is willing to spend making bogus arguments.

*Digital signs are often the brightest objects in the landscape, especially at night. They dominate the field of view and offer dangerous distractions for the traveling public.*



# TALKING POINTS

Studies show drivers who take their eyes off the road for more than two seconds are far more likely to suffer a crash or near crash. Digital billboards often attract drivers' attention for more than two seconds because they are extremely bright and colorful and employ messages that change frequently.

Most images change every six seconds because that's how long it takes to comprehend the message. That's also three times longer than it takes to cause an accident. Motorists stay focused on the sign to see what's next. Many signs have up to 10 different messages in rotation.

Commuters can learn to tune out traditional boards because the message doesn't change. But digital signs change messages frequently, creating fresh, daily distractions. Young and elderly drivers are particularly susceptible to distractions, making these signs especially problematic for drivers already at higher risk.

Local and state governments should enact moratoriums on digital signs until definitive safety research is concluded. Severe liability issues could ensue if governments approve signs that are later proven to be unsafe. The costs of buying out those signs would be enormous.

Many state agreements with the Federal Highway Administration prohibit digital billboards but are not being enforced or are being interpreted to favor the new signs. The FHWA declared in 1996 that if a state agreement bans boards that contain "flashing, intermittent, or moving lights," it effectively bans digital billboards.

Banning digital billboards does not violate the First Amendment right to free speech. Most local jurisdictions have the right to enact strict bans on digital signs in spite of state rules that may permit them.

Digital billboards can often be seen from more than a half-mile away, uselessly and adversely affecting visual quality long before the viewer is close enough to read the sign. This violates the spirit of requirements regarding the spacing of signs along the highway.

State and local governments should reevaluate their rules related to on-premise signs, which often permit electronic signs using highly distracting full-motion video, in spite of being located adjacent to highways. On- and off-premise electronic signs should not be regulated differently when safety is at issue.

Donated ad space and Amber Alerts cannot compensate for the threat to public safety or the aesthetic harm done by digital signs. Alternatives exist for emergency communication along highways.



*Bright electronic signs with complex, changing messages contribute extra distractions to motorists already confronted by visually cluttered environments. How long would it take you to comprehend the messages on this sign? More than two seconds?*

## A Word of Caution for Local and State Governments

Local and state governments should be wary of approving electronic signs, pending the outcome of definitive objective studies regarding their safety. If research proves these signs to be unsafe, governments could face significant liability and negligence issues if accidents occur in the vicinity of the signs. Additionally, if the signs must later be removed because they are deemed a hazard, the cost of compensating sign owners would be enormous, particularly along federal-aid highways where the Highway Beautification Act requires cash compensation and prohibits compensation via amortization.

*There is no objective evidence that these signs are safe. To protect themselves from potentially catastrophic costs in the future, governments at all levels should enact immediate moratoriums on these signs until it is known for sure whether or not they pose a hazard to the motoring public.*

Photo by William Jonson.

# ARE THEY LEGAL?

**THE FIRST STEP** in fighting a digital billboard that has been erected or proposed in your locality is to find out whether your state's agreement with the Federal Highway Administration (FHWA) already prohibits them. Many do. While that hasn't stopped the billboard industry from erecting the signs anyway, it can give you some powerful ammunition with which to challenge them and argue for their removal.

## Flashing, Intermittent, or Moving Lights

On July 17, 1996, the FHWA issued a memorandum clarifying the status of "changeable message signs." It noted that many State-Federal agreements would allow for changeable messages such as the Tri-Vision signs that use rotating panels or slats. However, it also noted that, even if Tri-Vision signs were allowed, the agreement probably wouldn't allow LED signs. "In nearly all States, these signs may still not contain flashing, intermittent, or moving lights," the memo states.

A 2006 letter to Texas Department of Transportation officials goes even further. If the state agreement prohibits signs "illuminated by any *flashing, intermittent or moving light* or lights...including any type of screen using animated or scrolling displays, such as LED (light-emitting diode) screen or any other type of video display, *even if the message is stationary*," then "the wording in the agreement clearly prohibits such signs," it states.

## Nonconforming Signs

Another industry trick is to convert a static, nonconforming sign to an LED sign and claim that the change is not an "improvement," and therefore not prohibited. The 1996 FHWA memo clearly states that this is not permitted, as "applying updated technology to nonconforming signs would be considered a substantial change and inconsistent" with federal regulations.

A July 1998 FHWA memo offers further guidance. It declares that signs with animation or scrolling messages should be considered nonconforming signs and notes that they raise "significant highway safety questions because of the potential to be extremely bright, rapidly changing, and distracting to motorists."

Additionally, nonconforming signs on state or local roads not covered by the Highway Beautification Act are often governed by local ordinances that do not allow them to be substantially altered or expanded either. Local jurisdictions have denied permits for conversion to digital technology, although some of those denials have been challenged.

*Local cities, towns or counties may usually impose stricter regulations on outdoor advertising than the state or federal government does.*

## Can Local Governments Prohibit Signs Allowed in State-Federal Agreements?

Yes, in almost all states. Local cities, towns or counties may usually impose stricter regulations on outdoor advertising than the state or federal government does. The State-Federal agreements govern signs on interstate and federal-aid highways. Localities may also create stricter standards for state and local roads.

## The First Amendment

Often, billboard industry representatives try to convince local governments that if they ban billboards, they will be violating the First Amendment right to free speech. *This is not true.*

In almost all states, localities may ban billboards outright, or may restrict the size and types of billboards that are allowed. The only thing they cannot restrict is what they say.

"It's only when you get into banning content that you get into trouble," said Eric Kelly, an attorney and professor of urban planning at Ball State University, who often helps local cities and towns draft or revise their sign ordinances.

Kelly recommends that local governments also make any rules regarding sign technology consistent between on-premise and off-premise signs to avoid potential litigation that might charge they are giving preferential treatment to one type of business over another. But that doesn't mean that you have to allow digital billboards if you allow banks to show the time and temperature, or gas stations to regularly change the prices posted on their signs, he said.

Allowing signs to change messages no more than once per minute, or restricting the size of the sign to no more than 30 square feet, allows for time and temperature signs, gas stations and church message boards but essentially bans Tri-Vision billboards and digital message boards that show new ads every six or eight seconds.

It also helps, said Kelly, to include language in the ordinance explaining why the restrictions are there. If the ordinance states that its mission is to promote safety and aesthetics, and ties this goal back to goals in the local comprehensive plan, it strengthens the ordinance and helps protect it from legal challenges.

*Follow this sign's instructions and you may regret it. By taking extra seconds to watch the sign change and change and change, drivers place themselves and others in potential danger.*



## WARNING SIGNS: Industry Tactics to Watch Out For

Billboard owners often lament on industry websites that current regulations and public sentiment present their biggest hurdles to mass deployment of digital signs. But in addition to the industry's normal political influence, it frequently employs some common strategies with local officials for overcoming those roadblocks. Here is what your community can expect to encounter if permission is sought for electronic signs:

### Amber Alerts and Other Public Service Announcements

When Clear Channel installed a network of 10 digital billboards in Albuquerque, part of its deal with the state was that it would run Amber Alerts and other emergency messages for free. It made the same deal in Cleveland. "Strategic relationships with the community are important," a company representative told the *Albuquerque Tribune*.

But many cities and states don't need digital billboards to run Amber Alerts. Existing government-operated digital highway signs, which have been in place for many years, as well as television and radio, already provide a system for emergency communication.

Nonprofits and police departments should not allow themselves to be used as justification for the visual degradation of their community. No amount of donated ad space or Amber Alerts can compensate for the aesthetic and safety damage done by these signs.

### Let's Trade

To erect seven digital billboards on highways entering Cleveland, Clear Channel took down several hundred billboards elsewhere in the city.

This might look like a good deal, but the truth is most of the boards taken down in these swaps are nonconforming or unprofitable signs anyway. Billboard companies are willing to make the swap because

## DON'T TAKE OUR WORD FOR IT...

### How Big is the Issue?

Electronics industry analyst, iSuppli, "predicts that by 2010, 75,000, or 15 percent of total billboards in the U.S., will be digital displays, up from a mere 500 digital billboards, or 0.1 percent, of all billboards in 2006."

Source: "Channel Viewpoint: Consumer electronics—just the sideshow to the advertising at CES," *eChannelLine Daily News*, January 9, 2007

### What's Bad for You is Good for Them

"Nobody likes being stuck in a traffic jam, but Clear Channel executives are coming to love them. 'Hey, traffic is a good thing,' quips Clear Channel Communications Inc. CEO Mark Mays. 'People listen to more radio, and they have more time to look at billboards.' Now that's a captive audience."

Source: *Business Week Online*, June 20, 2005

### And You Thought You'd Never Get that Big-Screen TV

"As one drives along Hwy. 101 between San Jose and San Francisco, there are many billboards that vie for your attention. But just as you near San Carlos, it is tough if not impossible to miss one particular two-sided billboard.... Its excellent positioning allows it to be seen by traffic as far

the digital boards are so much more profitable, and because they would otherwise be unable to erect them, since many localities have limitations on erecting new boards. And once the digital signs go up, they become cost-prohibitive to remove should the government later need to buy them out due to road improvements, commercial development, or if the signs are proven to be hazardous.

Governments should not fall for offers to take down old signs in exchange for permitting new digital ones. Whatever perceived benefits accrue from such deals don't outweigh the introduction of devices that will potentially lead to traffic deaths and injuries and degrade the visual character of the community. Further, in the absence of a complete moratorium on new signs, the old signs will inevitably be replaced somewhere within the jurisdiction.

### When an Improvement is Not an Improvement

These days, governments should be wary of seemingly innocuous applications to "improve" old signs or "add or upgrade lighting," which may hide a plan by a sign company to replace a static billboard with a digital sign. Installing digital technology over a regular board is not an update or "improvement," but should be treated as construction of an entirely new sign.

Some sign companies, in their eagerness to convert their signs, simply ignore rules and regulations and make changes without permission, hoping to intimidate local governments with the prospect of long and expensive legal battles or counting on a lack of political will to enforce the law.

## What Does the Public Think?

Billboard companies often claim that digital signs are very popular with the public, but never cite data to back up the claim. Perhaps that's because research shows the opposite.

A 2005 survey conducted in Arizona found that by a margin of 73 percent to 21 percent, citizens opposed laws that would allow electronic billboards on the state's highways. When the 21 percent favoring digital signs were then asked if they would still support the signs if they "might distract drivers," the opposition to electronic signs grew to 88 percent.

The survey of 682 adults had a statistical precision of plus or minus 3.8 percent.

as one kilometer from either side.... But then you couldn't miss a 34 ft. x 19 ft. Hi Definition TV on the side of the road that stands almost 40 feet above the ground, could you? And that's exactly what SiliconView's LED billboard looks like, a giant TV."

Source: *Outdoor Today*, January 2005

### If You Build It, They Will Stare... for More Than Two Seconds

"[Electronic] Billboard scheduling is based on a 'repeating loop' of advertising messages. The SiliconView loop contains six different messages, each displayed for five seconds with a one-second pause between each message. Thus, one message loop lasts approximately 36 seconds. The loop continuously repeats on a 24-hour basis, which gives each advertiser at least 2,880 viewing exposures per day.... A factor that determines dwell time, or the amount of time a commuter sees a billboard, is the vehicle's speed approaching the board. *At 65 mph, a Highway 101 driver sees one full rotation of the SiliconView billboard. During peak hours, when traffic slows, a driver could see three to five loops.*" [emphasis added]

Source: "Pixels and Prints: Outdoor's Future Fusion," *Signs of the Times*, August 2003

# ADDITIONAL RESOURCES

*A definitive study on the safety of electronic billboards has yet to be done, but the following documents contain information that is important to the current debate. The research papers referenced below are available as PDF files at the Scenic America website at [www.scenic.org/billboards/electronic](http://www.scenic.org/billboards/electronic). You will need to have the Adobe Acrobat Reader on your computer to read them.*

## The Impact of Driver Inattention on Near-Crash/ Crash Risk: An Analysis Using the 100-Car Naturalistic Driving Study Data

*April 2006, National Highway Traffic Safety Administration,  
U.S. Department of Transportation*

A major study of driver inattention, primarily involving distractions inside the car, but finding that any distraction of more than two seconds is a potential cause of crashes and near crashes.

## Traffic Safety Evaluation of Video Advertising Signs

*Transportation Research Record: Journal of the Transportation Research Board,  
No. 1937, 2005*

A study of electronic signs in Toronto, which finds that "On the basis of the eye fixation study and the public survey data, it is apparent that video advertising can distract drivers inappropriately and lead to individual crashes," but calls for additional research due to other conflicting data.

## Research Review of Potential Safety Effects of Electronic Billboards on Driver Attention and Distraction

*September 11, 2001, Federal Highway Administration,  
U.S. Department of Transportation*

A summary of existing research (as of 2001), on the subject of the safety of electronic signs and a call for additional studies.

## Milwaukee County Stadium Variable Message Sign Study: Impacts of an Advertising Variable Message Sign on Freeway Traffic

*December 1994, Wisconsin Department of Transportation*

Study of the dangers posed by an electronic sign in Milwaukee along I-94, that concluded that "It is obvious that the variable message sign has had an effect on traffic, most notably in the increase of the side swipe crash rate."

BE SURE TO VISIT THE SCENIC AMERICA WEBSITE AT [WWW.SCENIC.ORG](http://WWW.SCENIC.ORG)  
FOR ADDITIONAL AND UPDATED INFORMATION ABOUT THIS AND OTHER SIGN CONTROL ISSUES.

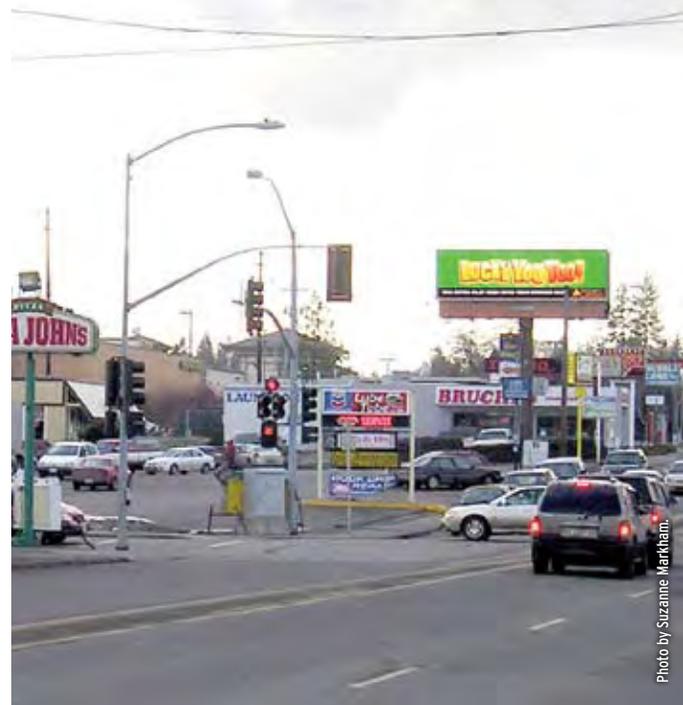


Photo by Suzanne Markham.

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Scenic America is the only national nonprofit organization dedicated solely to preserving and enhancing the scenic character of America's communities and countryside. Through national advocacy efforts and technical assistance services, local and national projects, and the support of its 11 state affiliates, Scenic America fights to reduce billboard blight and other forms of visual pollution; preserve the scenic character of the nation's highways and byways; promote context-sensitive highway solutions; ensure the mitigation of the visual impact of cell phone towers and other intrusions in the landscape; and promote scenic easements and other strategies to protect open space and preserve irreplaceable scenic resources.

**Change is inevitable. Ugliness is not.**

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