



THE ABCs OF DIGITAL BILLBOARDS

Billboards are a very effective form of advertising. At least, they must be, or why are there more of them every year? It's not like you've ever heard anyone say, "Hurray! Another billboard!" We're so used to them on the roadways that we generally don't even notice one unless it catches our eyes for some reason—it's new, the text or graphic is particularly colorful, or we're interested in the product. Advertisers are always looking for ways to make their signs stand out. The newest methods are to invigorate on- and off-premise signs with scrolling text, building-sized supergraphics, or ever-changing digital graphics. Digital billboards have a high-resolution, internally lit display; they are sometimes called "TV on a stick"—and we all know how difficult it is to not watch a TV. Plus, the message changes every few seconds. You could drive by it half a dozen times and see a different message each time. What's the down side? If we have to have billboards, isn't it better to have clean graphics and a variety of ads?

The answer is—it depends. For jurisdictions that are considering ordinances or whether to lease space for a digital billboard, it's essential to understand the basics. Besides the clearly beneficial revenue possibilities and the obvious drawbacks, digital billboards have some consequences that are not so apparent.

SOME NOT-SO-PLEASANT ASPECTS OF DIGITAL BILLBOARDS

The most obvious thing about a digital billboard is that it's...um...obvious. Really obvious. If you have any doubts, drive on a freeway in an urban area, especially at night. They dominate the field of view, and this is true of all digital billboards (or DBs), even when they're in the background. Most controversy about DBs revolves around this visual unavoidability—especially issues of driver distraction and light trespass. Numerous studies have shown that DBs are

dangerous distractions to drivers—or that they're not. It's usually a matter of who funds the study, the billboard industry or an independent organization. The Federal Highway Administration released a long-awaited study early in 2013 concluding that digital billboards were not a dangerous distraction—the first study with that finding that was not funded by the industry.¹ But even the FHWA recommends that you don't put DBs in places where drivers already have numerous distractions and hazards to navigate, like freeway ramps, busy intersections, or pedestrian crossings. The agency also has guidelines for other distractors, such as brightness and length of message. A car accident is bad enough—especially if it involves a pedestrian or bicyclist—but how much worse if the driver were distracted by an advertisement?

Even if DBs aren't dangerously distracting to drivers, they can be seriously annoying to nearby residents due to brightness, blinking, and noise. Various sources recommend light trespass thresholds for a DB, with the most reasonable ranging from 0.1 foot-candle (fc) at the property line of the receptor to 0.3 fc at a maximum of 350 feet away. (0.1 fc is about the same as deep twilight.²) Brightness is measured on an all-white billboard because it is brighter than colors. And some lighting recommendations address nighttime lighting contrast instead of the total light generated, because billboards appear brighter against a dark sky than on a sunny day, even at the same luminance level. Another issue is that DBs change messages every few seconds. That means that the light may appear to blink. A person can adapt to a discernible, steady light source that's not too bright, but a blinking light at the same brightness is far more distracting.



Photo by Joe Wolf



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Digital billboards can be surprisingly loud as well. First, a computer generates the images on DBs, and computers pushing that much data day and night get hot. They need a fan or even an air conditioner so they don't overheat and fry their circuitry. Also, light-emitting diodes (LED) don't work well when they're hot, so they need another fan or air conditioner. One resident likened the fan noise in the summer to the "drone of an airplane or the rumble of a truck engine."³

One would expect a savings in energy with DBs because they use LEDs. But they use hundreds or thousands of LEDs, so they actually consume more energy than a regular billboard. Dimming the lights conserves energy (and makes the neighbors happier), but is that enough? A study from 2010 compared the annual kilowatt hours (kWh) of two 14- by 48-foot billboards: a standard wooden billboard with four halide lamps and a digital billboard. The halide lamps used 7,008 kWh annually, and the DB used 162,902 kWh. Billboard companies claim to have cut this usage by 70 percent since 2010, but that is still almost 49,000 kWh per year. Some of that energy runs the computer, but most goes to the cooling system, which means that peak energy use hours for DBs are the same as peak use hours

for residences and businesses. Widespread use of DBs could place a heavier burden on electrical infrastructure.

And finally, there's hacking. It doesn't happen often, but when it does, it's oh so public. The examples here are both in Europe, not because US security measures are so much more effective, but because Europe has so many more DBs. In one instance, two computer science students in Belgrade hacked into a digital billboard with their cell phones and played a game of Space Invaders. And someone hacked into a digital display in Moscow and replaced the advertisement with a pornographic movie.⁴

THE BOTTOM LINE

Despite these disadvantages, DBs are becoming more common. Their two great advantages are that they work really well for advertisers, and they return a boatload of money. A DB costs \$250k to \$500k to buy and install. That's pricey compared to a regular billboard, but a DB can handle at least eight ads at a time instead of only one. And billboard companies can charge premium prices because their signs are REALLY VISIBLE. A billboard operator can rake in \$1.42 million per month with only

one billboard (eight customers), and that's after you subtract \$30k as a conservative estimate for electricity, rent, maintenance, etc. Even an initial investment of \$500k pales before a first-year return of up to \$16.5 million.

TIPS FOR LANDOWNERS

Given such stupendous returns, why shouldn't the landowner have a share? As a private landowner, you first need to determine if your jurisdiction allows DBs and under what conditions. Then you have to decide the terms of the lease and how much to charge. Despite what you may hear, there is no such thing as a standard lease for digital billboards. In general, landowners should charge a percentage of the net potential revenue of the sign, but that percentage varies from 15 to 50 percent, mostly depending on location. From there, the variables are almost infinite. For instance, contracting for yearly increases is a no-brainer, but should those increases be based on inflation or advertising rate increases? And how long should the lease be? At one time, twenty years was fairly standard, but now five years, one or two years, or even month to month (if you can get it) are more common and are better for the landowner.⁵ However, everyone (except billboard companies) seems to agree on a few things.

- » No automatically renewing contract. At the end of the lease period, the rent should go month to month until you can renegotiate.
- » Retain the right to remove the sign. Billboard companies make it fiendishly difficult to remove their signs without reimbursing them the purchase and installation costs, so this needs careful wording by an expert in billboard contracts.

INTERACTIVE BILLBOARDS

An interesting variation of the DB is the interactive billboard or radio frequency identification (RFID) billboard. Interactive displays work with cell phones, posting a number to text if you want to interact with the display.⁹ Some of these are quite interesting and inventive, but for safety's sake they are usually confined to pedestrian venues.

RFID is not interactive, but responds to radio signals from the viewer. The most famous RFID campaign in the States was launched by Mini Cooper in 2007. Participants had RF key fobs, and digital displays would create personalized messages as they went by in their cars. The possibilities for this technology in cell phones and credit cards in order to tailor ads to passersby was explored, but privacy issues have been a major obstacle. The closest active technology uses a camera and facial recognition software to analyze the faces of passersby and tailor ads to their age and sex.



- » Retain some control of content. Some signs might be inappropriate for your location; you should be able to veto them.
- » Finally and most important, “Billboard companies are known for using contracts that strongly favor their interests, so any paperwork offered by them should be reviewed by an attorney.”⁶

TIPS FOR PUBLIC ENTITIES

Jurisdictional entities that want to allow offsite DBs have a different set of responsibilities, though they should also be aware of the above precepts. First, a jurisdiction needs a sign ordinance that addresses digital off-premise signs. Most codes have not kept up with the new technology, which needs to be specifically addressed. These signs are not the same as conventional billboards, and it’s too late to regulate them after you’ve discovered just how different they are. Several cities across the country have ordinances that target digital signs, and though variations abound, some basic guidelines are:

- » A sign should not change more often than every 8 to 10 seconds. Require that it be blacked out if there is any visual dysfunction.
- » Maintain your right to remove the signs in case of land use changes or roadway widening. Otherwise, you will have to pay full compensation, which could be up to \$500k for each sign.
- » Be very clear about where such signs are allowed and where they are not, and about their maximum size given their location.
- » Have detailed light intensity/trespass standards, including luminance levels at night and on cloudy or dark days.
- » Make standards for billboard density: e.g., how many at an intersection or how many along a mile (or five) of road.

Some jurisdictions, including some states, do not allow any billboards, digital or not. If you decide to take this route, be prepared for a fight with the billboard companies. Nevertheless, there is more than one legal precedent on your side. One way that jurisdictions keep from being overrun by billboards without banning them altogether is under the condition that, for each digital billboard, the company must remove a certain number of regular billboards. This can be effective if you choose a number carefully, according to your own circumstances. Another way is to allow strictly conditioned sign districts for pedestrian-oriented commercial areas, though there is considerable debate about how well these districts work.

Jurisdictions can also potentially profit from digital signs. Some cities have made contracts with billboard companies to receive, not only sign fees, but a large amount of cash, payable over a number of years.⁷ Also, like landowners, jurisdictions can contract for a percentage of the advertising rates in addition to their yearly operating fees.⁸ It

may sound like you should grab as much as possible, but the truth is, you should. Digital billboards are hugely profitable right now, partly because they’re a new, exciting tech toy, and therefore relatively rare. As they become more common, their profitability might diminish, but it might not, and it won’t be in the near future. The 4,000 digital billboards in the country today make up only about 1 percent of all billboards.

FINAL CAVEAT

The organization Scenic America has filed suit against the FHWA (and others) in federal court over the administration’s 2007 ruling that message changing on billboards is not considered “flashing, intermittent, or moving light or lights,” which are prohibited except for public information. This was a reversal of its previous rulings on digital billboards. The court sided with FHWA in June 2014, but Scenic America will file an appeal in August 2014. You may want to check on its status before you commit to this form of advertisement on your land or in your community.

Endnotes

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Questions related to this PLACEVIEWS may be directed to:
Dwayne Mears, AICP at 714.966.9220
dmears@placeworks.com

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